An Online Automation System for Research and Publication Activities in Eastern Mediterranean University

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the Degree of

Master of Science
in
Computer Engineering

Eastern Mediterranean University
February, 2015
Gazimağusa, North Cyprus

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ABSTRACT

In this study, an online automation system for research and publication activities is developed in order to collect, keep, organize and process all activities of every academic staff in Eastern Mediterranean University dynamically in reliable, faster, up-to-date archiving, and easier way.

The developed system has various features such as: review mechanism; real-time statistics; advance search; reporting; academic point assignment; duplication detection mechanism; independent messaging system; and user friendly interface. Our system can be a solution to overcome the difficulties faced by the university administration regarding research and publication activities.

Although current system is developed for Eastern Mediterranean University, it can be used by some other Universities or Institutes as well.

ÖZ

Bu çalışmada, Doğu Akdeniz Üniversitesi'ndeki her akademik personelin tüm aktivitelerini güvenilir, daha hızlı, güncel arşivleme ve daha kolay yolla toplamak, tutmak, organize etme, ve işlemek için araştırma ve yayın aktiviteleri icin bir çevrimiçi otomasyon geliştirilmiştir.

Geliştirilen sistem çeşitli özelliklere sahiptir, örneğin: denetim mekanizması; gerçek zamanlı istatistik; gelişmiş arama; raporlarma; akademik puan atama, tekrarlama keşif mekanizması, bağımsız mesajlaşma sistemi, ve kullanıcı dostu arayüz. Bizim sistemimiz üniversite yönetiminin araştırma ve yayın aktiviteleri ile ilgili zorlukları aşmak için bir çözüm olabilir.

Bu sistem Doğu Akdeniz Üniversitesi için geliştirilmiş olmasına rağmen, diğer bazı üniversiteler ve enstitüler tarafından da kullanabilir.

Anahtar Kelimeler: Web uygulaması, akademik değerlendirme, akademik aktivite

To My Father: Abdulsattar Abdulrahman

To My Mother: Najla Hassan Hussein Karagöz

To My Fiancée: Hadeel Kadhm Almalak

To My Sister and Brothers

ACKNOWLEDGEMENTS

First of all, I am grateful to the Allah for establishing me to complete this thesis. I am deeply indebted to my supervisor Asst. Prof. Dr. Yıltan Bitirim for his helping and encouragement, guidance, and providing me with all necessary facilities during my work on this thesis.

My sincere gratitude to my family: to my father Abulsattar Abdulrahman, and to my mother Najla Hasan Karagöz for uninterrupted support to motivate me continue my education for my whole life.

Finally, I would like to thank my wife, Hadeel Kadhm Almallak I am extremely grateful and indebted to her for her love, support, encouragement, and great patience at all times.

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LIST OF ABBREVIATIONS

EMU   Eastern Mediterranean University

RPMA   Reviewer Process Management Application

MWA   Main Web Application

PHP   Hypertext Preprocessor

CSS   Cascading Style Sheet

MySQL   My Structured Query Language

Chapter 1

INTRODUCTION

As it is known, in Eastern Mediterranean University, activities of academic staff are not stored within a computer automation system. Currently, all the work in this regards is taking place manually. The administrative staff has to communicate individually with the academic staff in order to collect their activities. Due to the large number of academic staff in the university, this is a difficult task and processing these data takes more time. For gathering and analyzing the information regarding academic staff activities, lots of effort is needed. Therefore, we have decided to develop an online automation system for research and publication activities in order to collect, keep, organize and process all activities of every academic staff in the university dynamically in reliable, faster, up-to-date archiving, and easier way.

This system helps the administrative staff to have better access to all activities of all academic staffs at any time and at anywhere. This system has various benefits such as real-time statistics, advance search, evaluating the reliability of the activities by reviewers, and reporting. The developed system can be a solution to overcome the difficulties regarding activities faced by the University administration.

Although the current system is developed for Eastern Mediterranean University, it can be used by some other universities or institutes as well.

In this study, the following essential tools are used:

- PHP: it is an acronym for "PHP Hypertext Preprocessor" which is developed by Rasmus Ledrof and It is one of the easiest programming languages and prevalent which is used in more than 244 million websites [4]. PHP is the backbone of the world's most famous websites and it's designed primarily to be used for developing web applications [15]. Its characteristics are familiarity, simplicity, efficiency, security, flexibility and it runs on various platforms like Windows, Linux, and UNIX.

- JavaScript: it has developed by Netscape Company in order to add more life to the web pages to make it more active [13]. JavaScript has programmed based on the Java programming language, but it differs in many things including [14]:

  - It's simpler and relatively easier to learn.

  - The JavaScript does not require any Compiling process.

  - It can be embedded within your HTML pages and can be shown by the browser.

  - It works by modern browsers, whether Netscape Navigator or Internet Explorer.

- CSS: it is an acronym for Cascading Style Sheets was invented in 1995 and it is used to determine the characteristics of HTML documents which is usually care about color, type of fonts, margins, width/height of the page, background images, and the format of tables [3]. The difference between CSS and HTML is that HTML is used to create the structure and contents of a system and CSS is used to add design to its content [3]. Some benefits of CSS are [3]:

  - Control the design of the system through a single file.

  - Large possibility and accurate to control the design details.

  - Creates special viewing experience designs across a wide range of devices, such as screens and mobile phones, etc.

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- Many of the techniques and methods developed in order to control the design.

- JQuery: it's easy and uncomplicated JavaScript library that makes it easy to create fantastic effects on the elements of the HTML pages in a few lines of code [6]. The main JQuery components that have been used in the development of our system are:

  - TableSorter [7]: this tool is used to convert table format into sortable table.

  - Autogrow [8]: this tool is used to shrink the textareas dynamically.

  - SlimScroll [9]: this tool is used to make the div tag scrollable.

  - Uniform [10]: this tool is used to stylize html forms.

  - TinyMCE [11]: this tool is used to convert textareas into an editor.

  - Validate [12]: this tool is used for live validation checking.

- Regular Expressions: they are found by the mathematician Stephen Cole Kleene in 1956 [16]. They are sequence or pattern of characters that forms a search pattern, powerful tool for examining and modifying text, and are used for describing a pattern matching within string, or extracting matches [16].

- MySQL: it is a database management system and it depends on the SQL language. It is the second most open source database management system used in the world [17]. It's a well-known database which used in most web applications because of its speed and stability and ease of use, and easy to linking tables with user interface designed with different programming languages [18]. Learning MySQL is not that difficult just you need to have knowledge of the basics of HTML and PHP and the SQL.

The design of the system is going to be explained in details in chapter two. Next, the implementation of each module, and the system's automatic adaptation for handheld devices are discussed in chapter three. Comparison with related work is explained in chapter four. And finally, the conclusion and future work of the study are explained in chapter five.

Chapter 2

DESIGN OF THE SYSTEM

In the figure 2.1, general architecture of the research and publication activity automation system is shown. The system composed of six modules. These are "Administrator", "Rector", "Dean", "Chairman", "Instructor", and "Reviewer Process Management Application (RPMA)" modules.
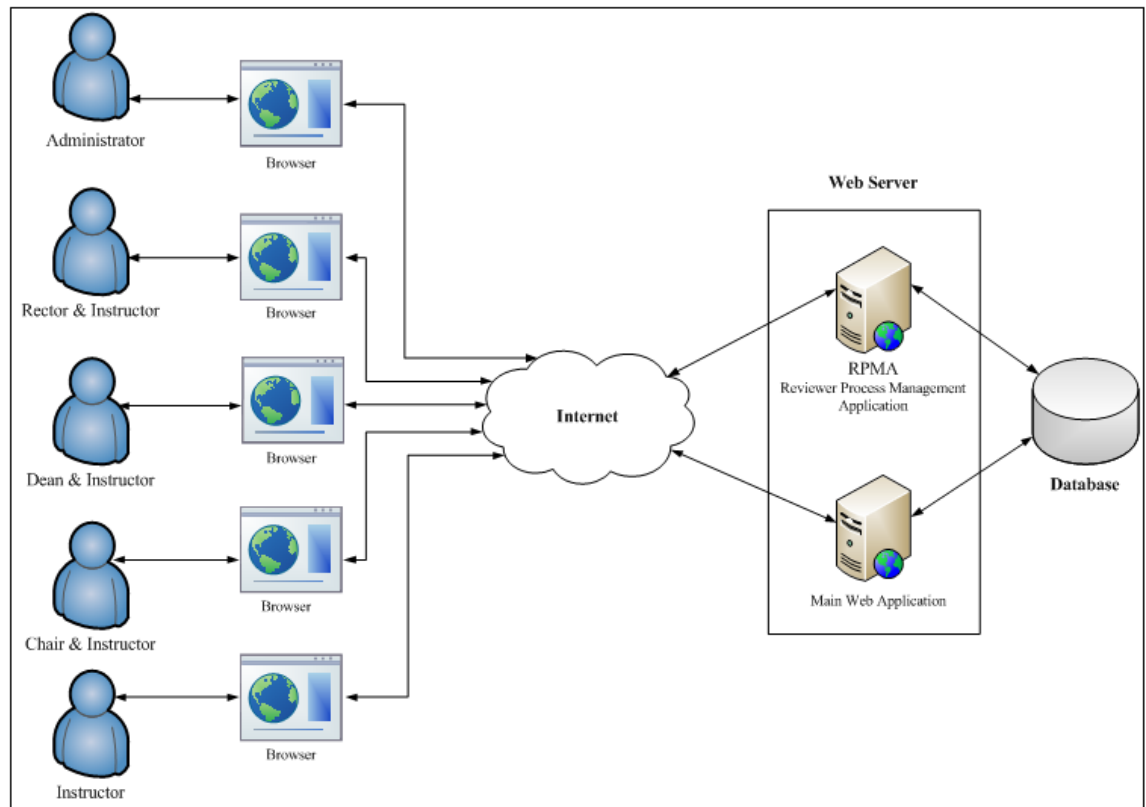
Figure 2.1: General Architecture of the System

2.1 Modules

The "Rector", "Dean", "Chairman", and "Instructor" modules are based on the user roles which are assigned by the administrator during the user creation process in order to enable the users to perform particular action in the system. At the Web server side there are two parts which are the RPMA (Review Process Management Application) for reviewing and evaluation processes, and the MWP (Main Web Application) which is the main system application that runs in the browser.

Each of the modules is described by detail in sections from 2.1.1 to 2.1.6. Additionally, the use case modeling is described in the section 2.2. Subsequently, the database design is described in section 2.3.

2.1.1 Administrator Module

The first module of the system is the administrator module, it has a full control of the entire system. The administrator is responsible of the user management (i.e. create new users, update users, list users, search users, and delete users), faculty and department management (i.e. create new faculty, or department, and list faculties, or departments), activity management (i.e. add new research activity, list research activities, assigning reviewers manually, advanced research activity search, and view research activity statistics), reviewers' load distribution list (i.e. list activity reviewers), reviewer's review period setting (i.e. set and update review deadlines), independent messaging management (i.e. compose new message, list all inbox/outbox messages, and delete inbox/outbox messages),and profile management (i.e. edit personal information).

Figure 2.2 shows the processes required to can create a new user account, update an existing user account, list all users, search for users in the system, and delete users by the administrator. Firstly, the administrator is responsible to create new users by entering the new user information user id, user title, user type, e-mail, department, research interests, gender, and permissions (Process 1). (The administrator can give a permission to the created user to be assigned as a reviewer by the system for evaluating other users' activities). The system is going to check the database for data duplication and if there is an existing user with the same id or e-mail address the operation cancels, otherwise a new user will be created and all the information will be stored in the database (Process 2). A response message will be sent to the administrator if the user cancelled or created (Process 3). The administrator can have the list of all users in the system. The administrator requests users list from the database (Process 4). The system forms the list from the database (Process 5). Then, the formed list will be sent to the administrator with the information consisting of academic title, name, surname, academic position, department, e-mail address, and added date (Process 6). The administrator is able to update the user account. Administrator requests user information by sending the user id from the list taken in process 6 (Process 7). The system will prepare the information consisting of id, user title, user type, department, research interests, assign reviewer, and gender (Process 8). Then, the formed information will be sent to the administrator (Process 9). The administrator can update user account by changing the following fields: user title, user type, department, research interests, assign reviewer, and gender; then, send the edited user information (Process 10). The system will update the user information in the database with the new information sent by the administrator (Process 11). Then the system will sent a response message to the administrator about the user information update (Process 12). The administrator has ability to search for users within the system. The administrator

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can search user by sending user data (name, middle name, surname, or e-mail) and a search field data (name, middle name, surname, email, or all fields) (Process 13). Then, the system will look for the user inside the database (Process 14). If the user is found, the user information user id, title, name, surname, user type id, department, and user add date will be sent to the administrator, otherwise a message will be sent to the administrator that the user is not found (Process 15). The administrator is able delete users from the system. Firstly, the administrator will send the id (by selecting it from the list taken in process 6) to delete the user information (Process 16). Then, the system will delete all the record of the user from the database (Process 17). Finally, the system will send a response message about the deletion process to the administrator (Process 18).
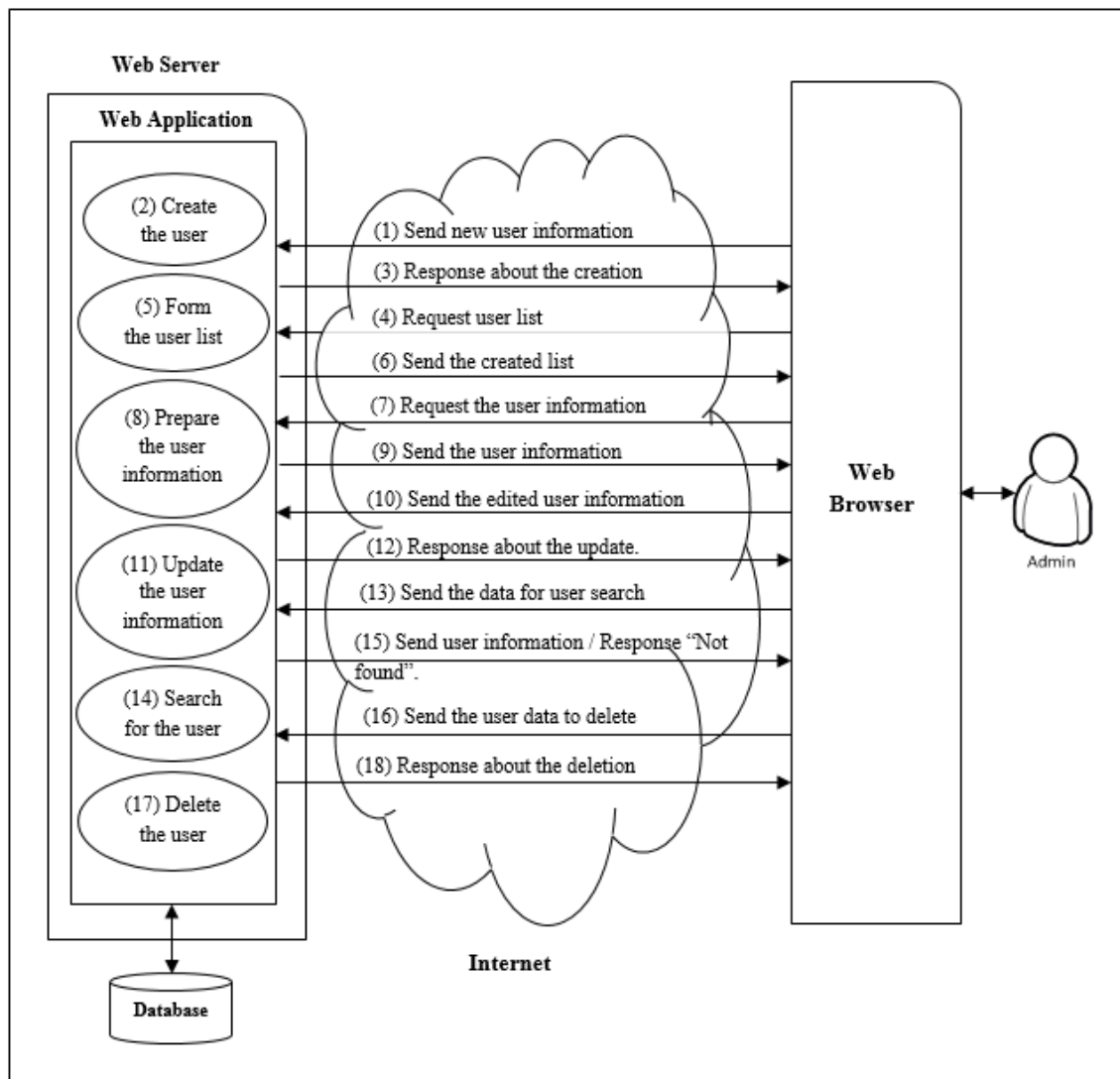
Figure 2.2: User Management

In the figure 2.3 as it shows, the processes of how the administrator can create new faculty/department, list all faculties/departments, and delete faculty/department. The administrator is responsible to create new faculty by sending new faculty information (i.e. faculty id, faculty name, and description) (Process 1). The system is going to check the database for data duplication and if there is existing faculty name the operation will be cancelled, otherwise the new faculty will be created and all information entered will be stored in the database (Process 2). A message will be sent to the administrator as the new faculty creation is done or cancelled (Process 3). The administrator can create a new department under faculty by sending new department information (i.e.

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department id, department name, description) together with the faculty id (Process 4). Then, the system will check the database for data duplication and if there is any existing department with the same name the operation will be cancelled; otherwise, the new department will be created and all the information will be stored in the database (Process 5). A message will be sent to the administrator as the new department creation is done or cancelled (Process 6). Administrator is able to list all faculties in the system, by requesting the list (Process 7). Then, the system forms the list (Process 8). The formed list will be sent to the administrator with the information consisting of faculty name, and description (Process 9). The administrator can delete a faculty from the system by sending faculty id (selecting it from the list taken in process 9) to delete the faculty (Process 10). Then, the system will delete all the record of that faculty from the database (Process 11). A message will be sent to the administrator about the deletion (Process 12). The administrator can list all departments of faculty. Firstly, the administrator requests the department list (Process 13). Then, the system forms the list (Process 14). The formed list will be sent to the administrator with the information consisting of department name and faculty name (Process 15). The administrator is able delete department from the faculty. Administrator sends the department id (selecting it from the list taken in process 15) to delete the department information (Process 16). Then, the system will delete record of the department (Process 17). Finally, a message will be sent to the administrator about the deletion process (Process 18).
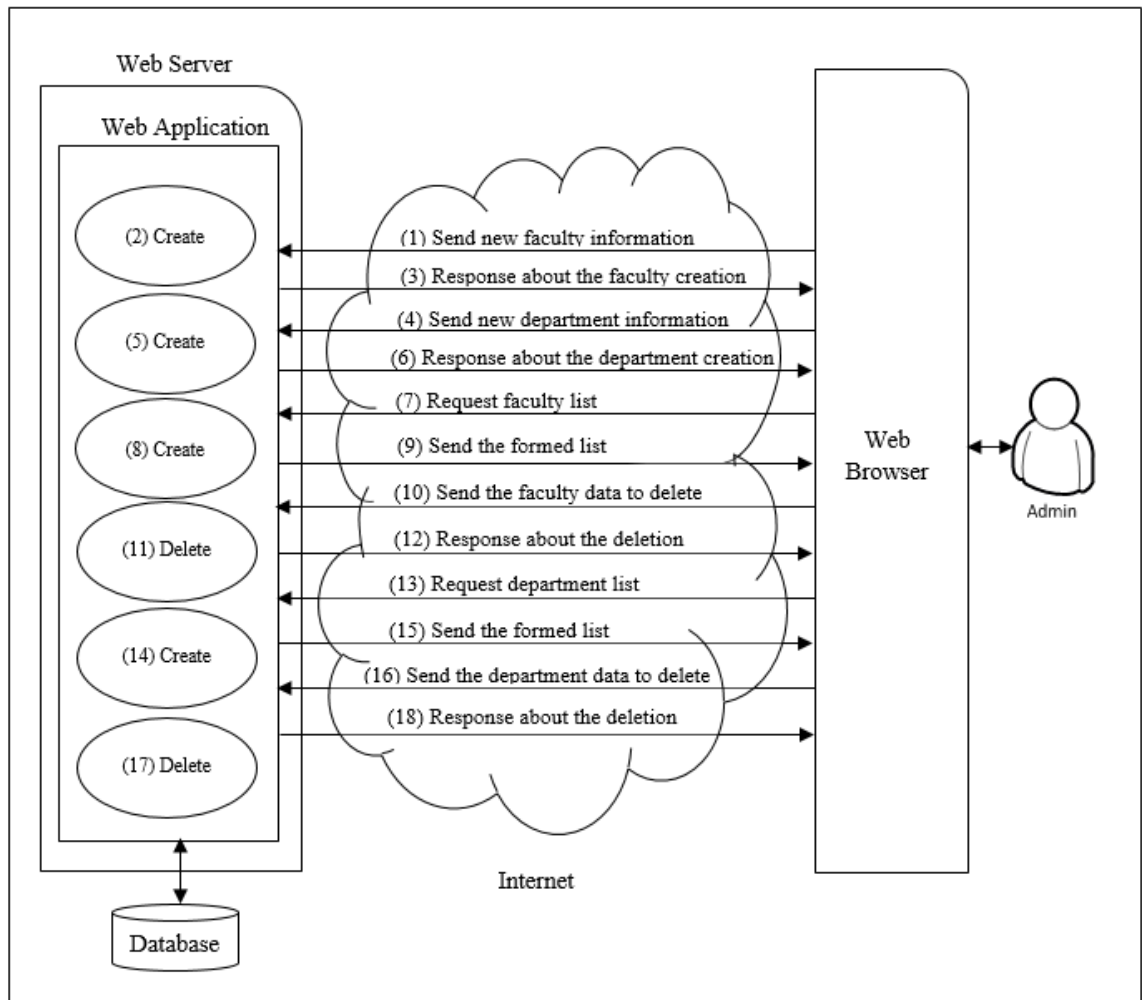
Figure 2.3: Faculties and Departments Management

Figure 2.4 shows the process needed by the administrator to create research interest, list all research interests, and delete a research interest. For creating new research interest firstly the administrator will send the new research interest data (i.e. research interest id, and research interest name) (Process 1). Then, the system will check the database for data duplication in order to prevent duplicate records. If there is existing interest name the operation will be cancelled; otherwise, the research interest will be created in the database with the following fields: research interest id and research interest name (Process 2). A message will be sent to the administrator as the new interest creation is done or cancelled (Process 3). The administrator can list all research interests in the system, by requesting it (Process 4). Then, the system forms the list

with the information consisting of research interest name (Process 5). The formed list will be sent to the administrator (Process 6). Administrator is able to delete research interest from the system. The administrator sends the research interest id (by selecting it from the list taken in process 6) to delete the interest (Process 7). Then, the system will delete the record of the interest from the database (Process 8). A message will be sent to the administrator about the deletion (Process 9). Administration is able to approve research interests sent by the users. Administrator requests users' research interests list (Process 10). Then, the system will form the list with the information consisting of research interest name and user name (Process 11). The formed list will be send to the administrator (Process 12). Then, the administrator will send the interest id (by selecting from the list taken in process 12) to approve the research interest (Process 13). The system will create the research interest and store the data in the database (Process 14). A message will be sent to the administrator about approve operation (Process 15). The administrator is able to reject research interests requested from the users; administrator will send the interest id (by selecting it from the list taken in process 12) to reject the research interest (Process 16). Then, the system will delete research interest data record in the database (Process 17). A message will be sent to the administrator about the reject operation (Process 18).
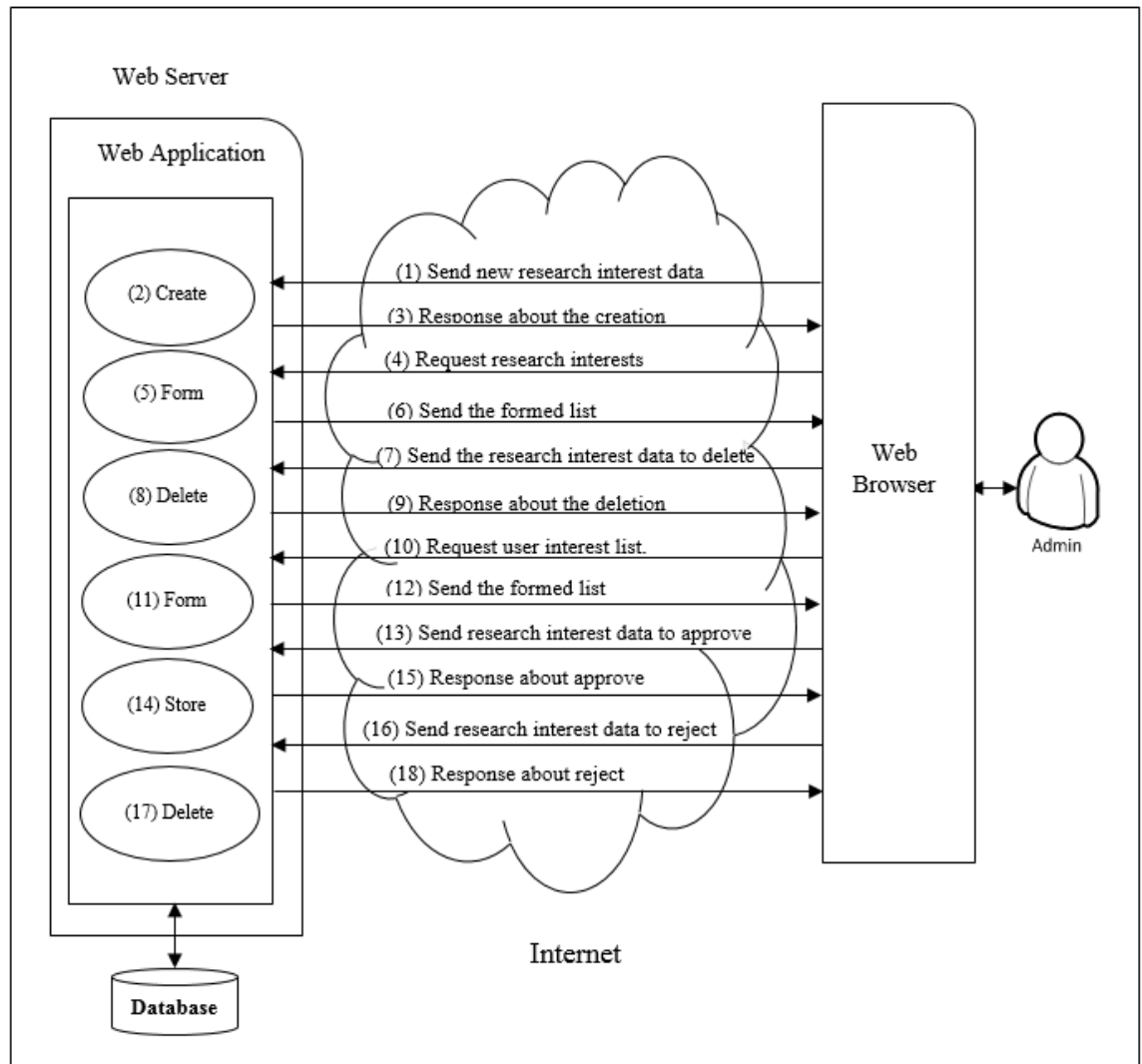
Figure 2.4: Research Interests Management

Figure 2.5 demonstrates how the activities are managed by the administrator. The administrator can assign reviewers manually, list pending activities, and search for activities. The administrator can update reviewers manually to evaluate skipped and delayed activities. Thus, the administrator requests assigning reviewer(s) list (Process 1). The system forms the list (Process 2). The formed list will be sent to the administrator (Process 3). The administrator will select the reviewer from the list (for updating current reviewer) and sends the activity with the reviewer for update (Process 4). After that, the system will update the current reviewer and send the activity information to the newly assigned reviewer for evaluation (Process 5). A message will

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be sent to the administrator about the update operation (Process 6). The administrator is able to search for activities across the entire system easily by sending the activity data consisting of the following criteria fields (Process 7):

❖ Area category ("Temel Bilimler ve Mühendislik", "Sosyal ve İdari Bilimler", "Mimarlık/Tasarım ve Görsel Sanatlar", or "Hukuk") [1].

❖ Main Category ("Uluslararası", or "Ulusal/Yerel") [1].

❖ Activity Type ("Makale", "Kitap", "Konferans", "Patent", or "Atıflar") [1].

❖ Type of Activity Type (All, or specific type) [1].

❖ Date (All years, year range, or monthly (1month/3months/6months))

❖ Faculty (All, or specific faculty name).

❖ Departments (All, or specific department name).

❖ Research Interests (All, or specific research interest name).

❖ Status (All, accepted, rejected, or waiting)

❖ Activity data (authors, activity title, ISBN, issue, journal name, or conference name) (optional).

Afterwards, the system will look for the activities in the database (Process 8). If activities were found, the activities information (i.e. activity title, author(s)/inventor(s)/editor(s)/organizer(s), faculty and department name, activity type, published year, and status) will be sent to the dean; otherwise, a message will be sent to the administrator that the activity not found (Process 9).
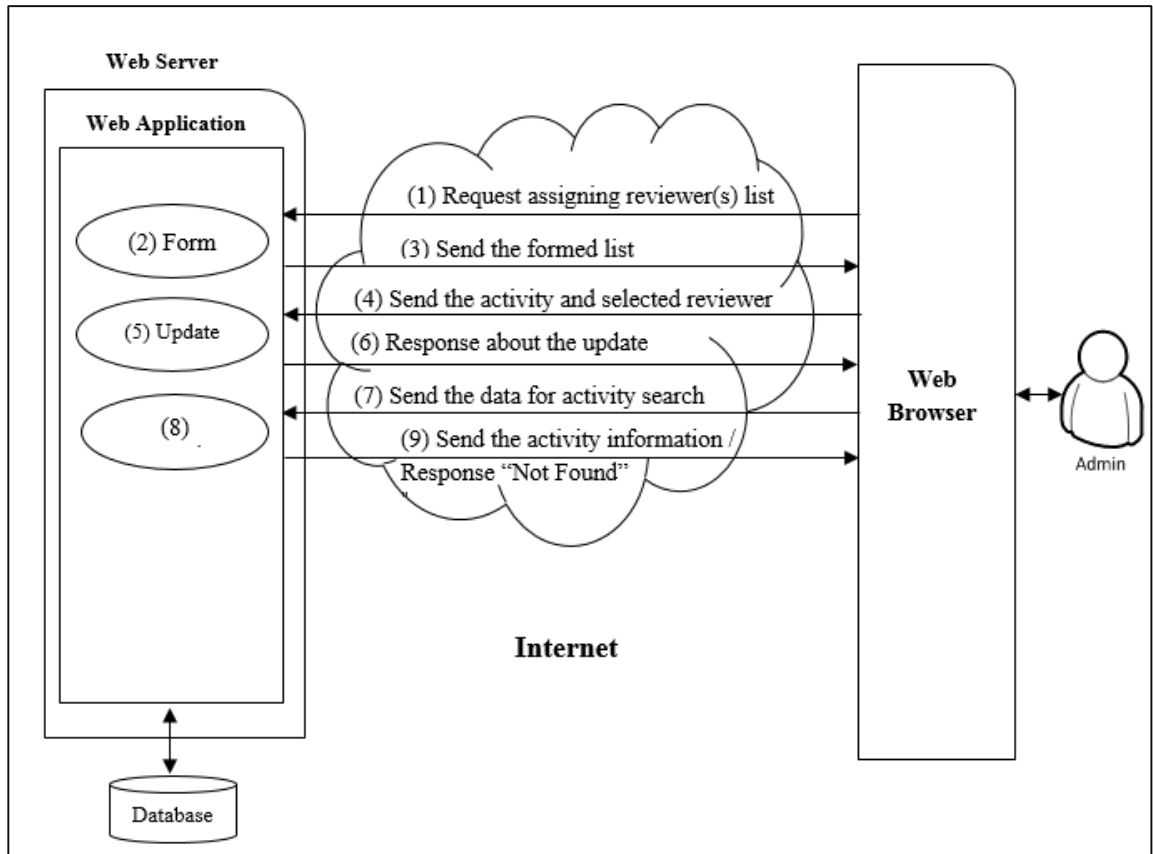
Figure 2.5: Administrator Activity Management

As it shown in figure 2.6, the administrator views the reviewers' load distribution list. To do this, first the administrator will request the list (Process 1). Then, the system forms the list with the information consisting of reviewers' name, number of assign activites, and activities title (Process 2). Then, the formed list will be sent to the administrator (Process 3).
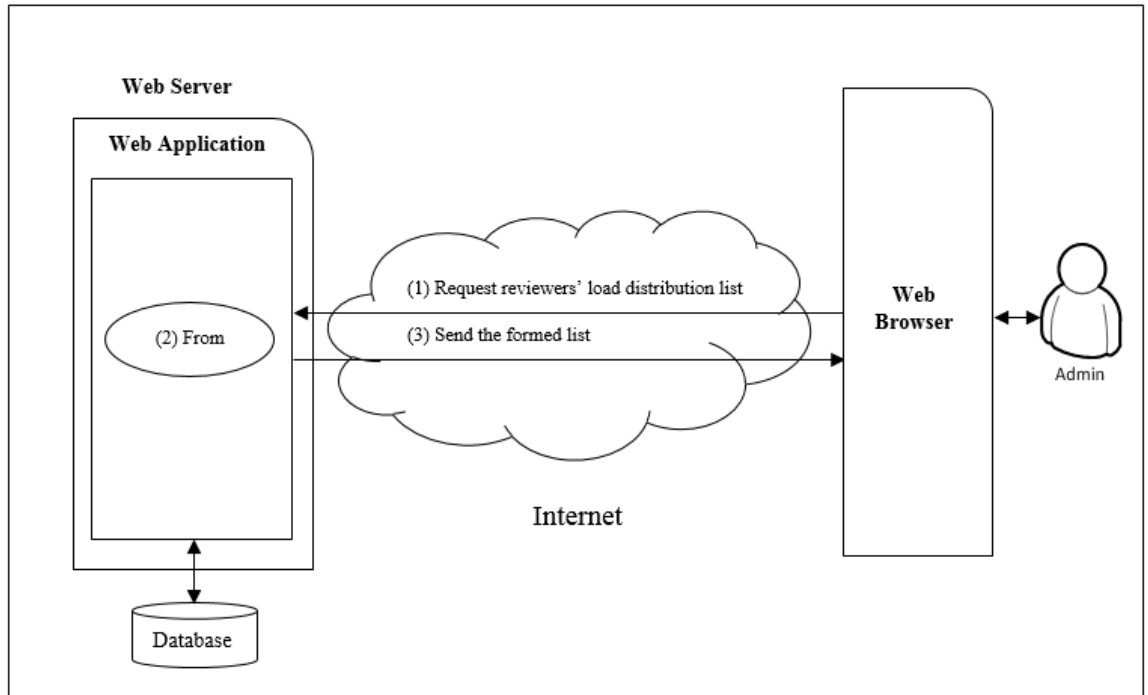
Figure 2.6: Reviewers' Load Distribution List

In the figure 2.7 as it can be seen the activities statistics is illustrated. The administrator is able to produce statistics of activities in the entire system. To continue, the administrator can obtain statistics by sending data consisting of the following criteria fields (Process 1):

- ❖ Main Category ("Araştirma Ve Yayin Etkinlikleri") [1].

- ❖ Region Category ("Uluslararası", or "Ulusal/Yerel") [1].

- ❖ Activity Type ("Makale", "Kitap", "Konferans", "Patent", or "Atıflar") [1].

- ❖ Date (All years, year range, or monthly (1month/3months/6months))

- ❖ Faculty (All or a specific faculty name).

- ❖ Departments (All, or specific department name).

- ❖ Authors (All, or specific author name).

Afterwards, the system will produce the statistics according to the criteria in process 1 (Process 2). Then, the statistics will be sent to the administrator with the information

years (start year/month/day, end year/month/day), type of activity type, total numbers of activities based on type of activity type, and number of activities by year/month/day (Process 3).
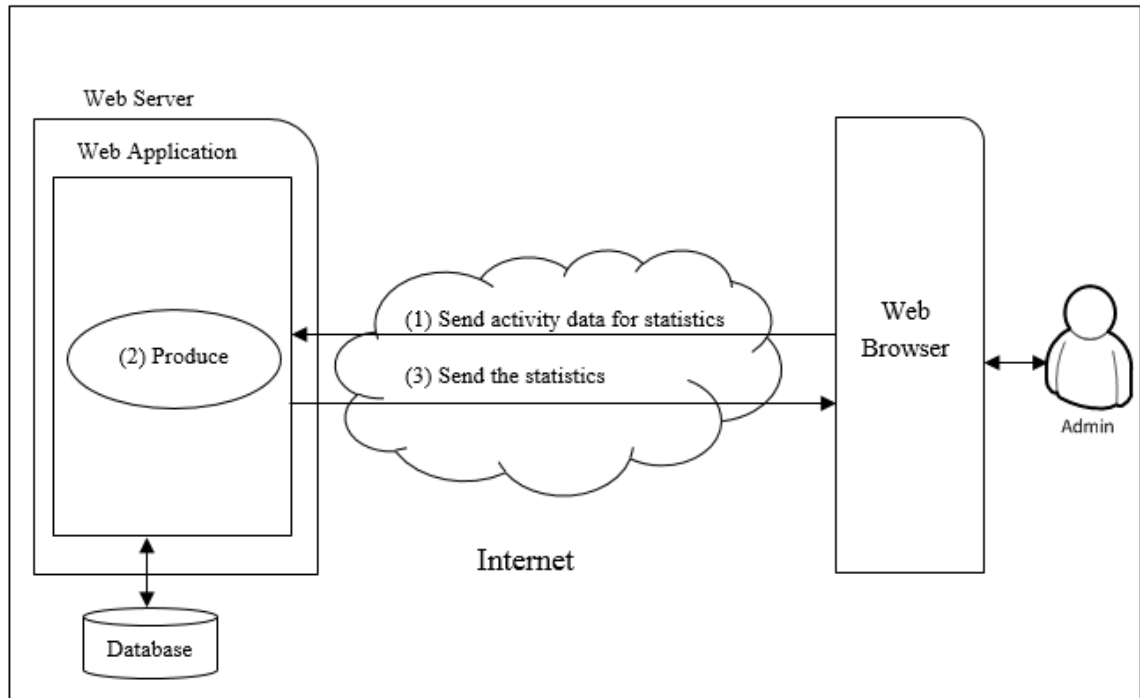
Figure 2.7: Activity Statistics

Figure 2.8 demonstrates how the reviewers' review period is configured by the administrator. The reviewers' review period is a duration based on number of days. The administrator has the authority to assign a specific period of days for reviewing an activity. The administrator requests the period (Process 1). Then, the system obtains the period (Process 2). The period will be sent to the administrator (Process 3). The administrator sets the review period deadline (Process 4). Then, the system will update the period in the database (Process 5). A message will be sent to the administrator about the period update.
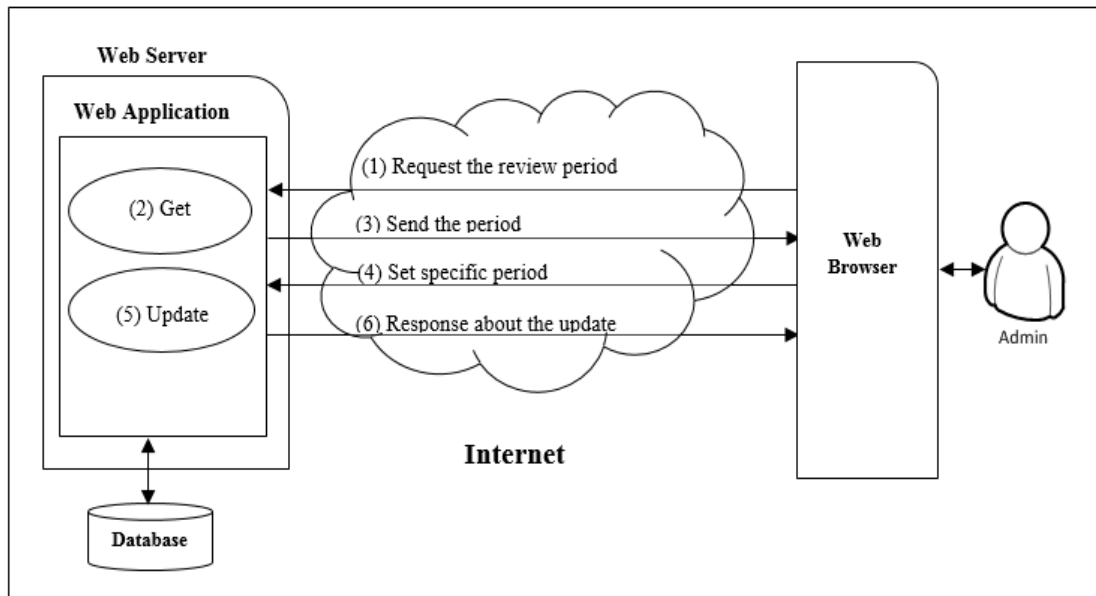
Figure 2.8: Review Period Setting

As it shown in figure 2.9, the administrator and the other modules are able to update their personal information. The user requests profile information by sending his/her id (Process 1). After that, the system prepares the information consisting of (i.e. user id, profile image, cv, password, first name, middle name, last name, birthdate, nationality, e-mail, mobile number, office phone number, office, address, about, education, experience, membership , and administrative duties) (Process 2). Then, the prepared information will be sent to the user (Process 3). To continue, the user can change personal information including the following fields (i.e. profile image, CV, password, first name, middle name, last name, birthdate, nationality, e-mail, mobile number, office phone number, office, address, about, education, experience, administrative duties, and membership). Thereafter, the administrator sends personal information user id, profile image, cv, password, first name, middle name, last name, birthdate, nationality, email, mobile number, office phone number, office, address, about, education, experience, membership, and administrative duties for update operation (Process 4). After this, the system will update the information of the administrator in

the database (Process 5). Lastly, a message will be sent to the administrator about the update operation (Process 6).
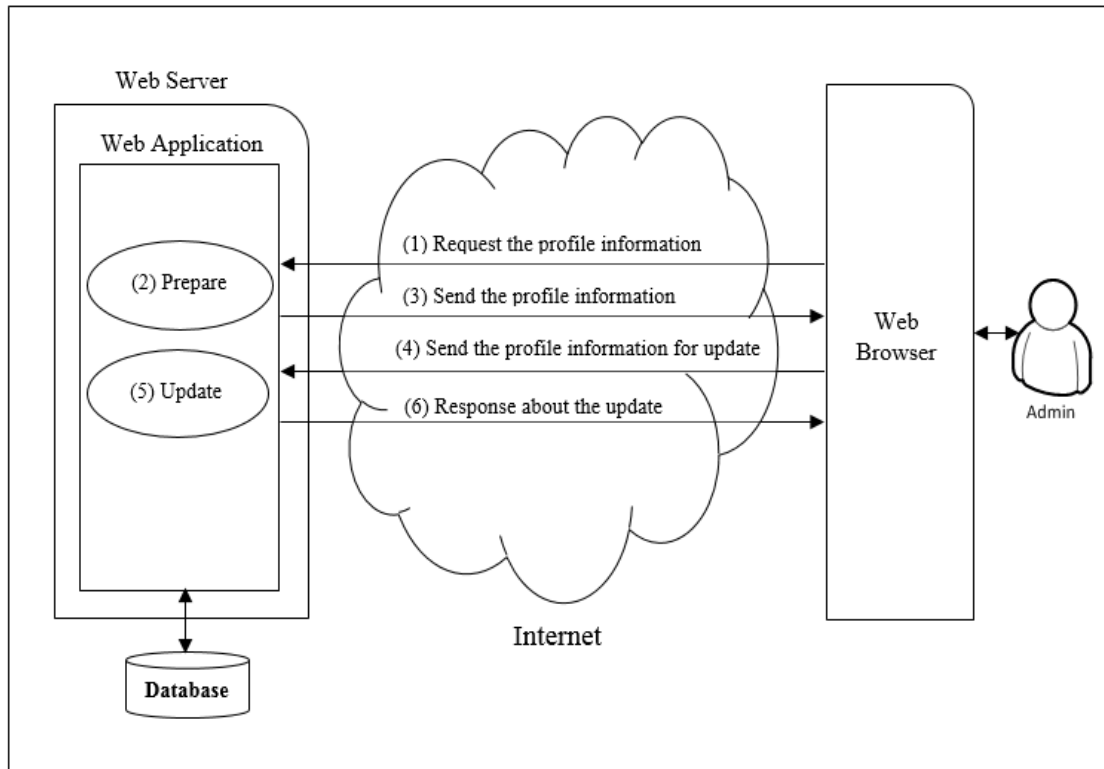
Figure 2.9: Profile Management

Figure 2.10 shows the independent messaging management in the system. The administrator and the other modules are able to send messages to each other, list messages, and delete messages. To send new message the user requests the recipients list (Process 1). The system forms the recipients list with the information consisting of first name, middle name, and last name (Process 2). The recipients list will be sent to the user (Process 3). The user selects a recipient from recipients' list and types a text message including the subject, and message content, and then send the selected recipient the message (Process 4). The new message will be saved in the database for both sender and recipient (Process 5). A message will be sent to the user about the save operation (Process 6). The user is able to of all inbox messages by requesting it (Process 7). Then, the system forms the list with the information consisting of sender

name, text message, and date (Process 8). The formed list will be sent to the user (Process 9). The user can delete message from the inbox messages. User sends the message id (by selecting it from the list taken in process 9) to delete the message (Process 10). Then, the system will delete the message from the database (Process 11). A message will be sent to the user about the deletion (Process 12). The user can list all outbox messages by requesting it (Process 13). The system forms the list with the information consisting of recipient name, text message, and date (Process 14). The formed list will be sent to the administrator (Process 15). Administrator can delete messages from the outbox messages. The administrator will send the message id (by selecting it from the list taken in process 15) to delete the message (Process 16). The system will delete the message from the database (Process 17). Thereafter, a message will be sent to the administrator about the deletion (Process 18).
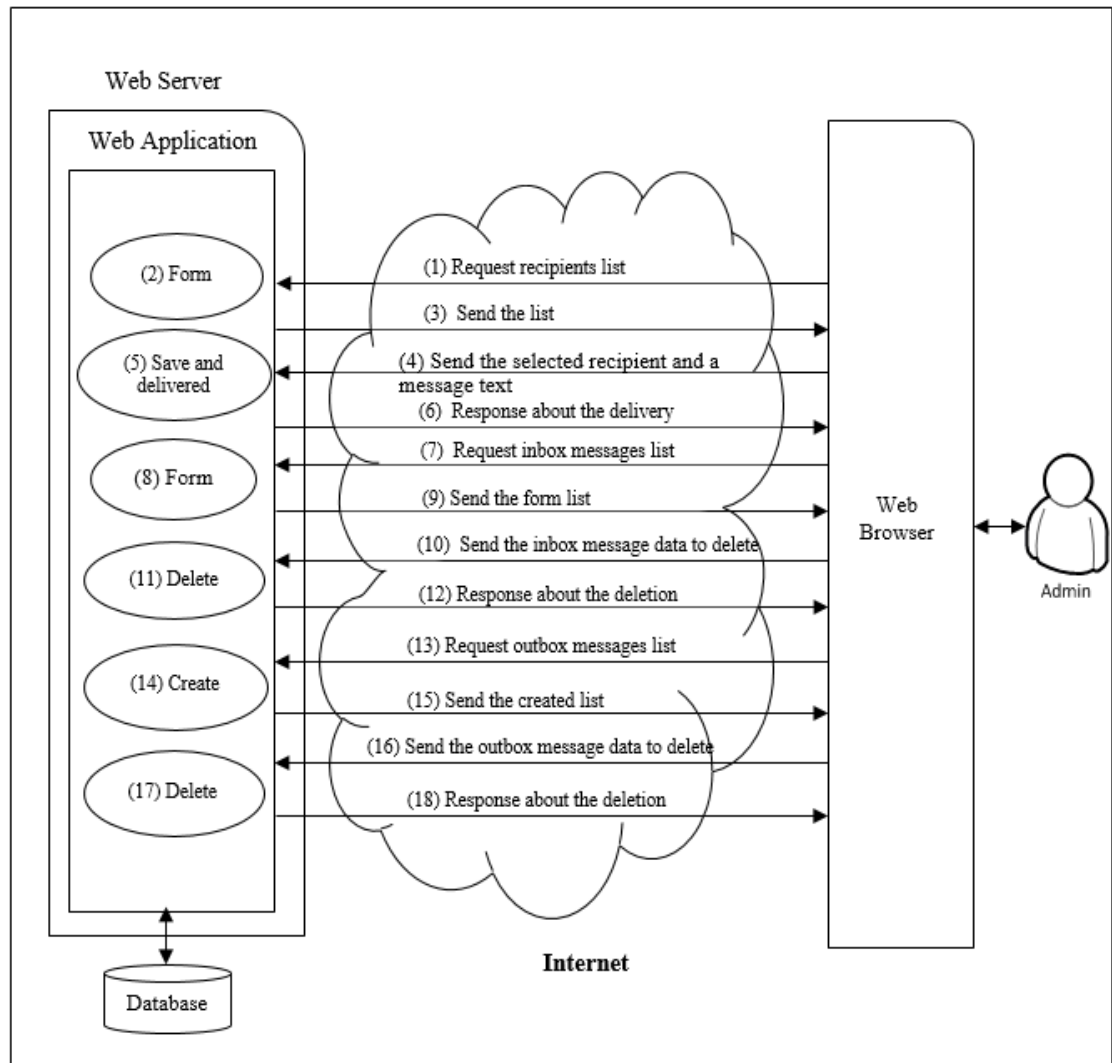
Figure 2.10: Independent Messaging Management

2.1.2 Rector Module

The second module in the system is the "Rector" module. This module has the right to manage users (i.e. list and search users), messaging management (i.e. compose new message, list all inbox/outbox messages, and delete inbox/outbox messages), activity management (i.e. add new activity, list personal activities, reviewing activities, and search for activities), activity statistics (view activity statistics), and profile management (i.e. edit personal information).

The rector can manage users as same with the administrator module, and the only difference is that the rector can only search for and lists use.

The rector can manage messages as same with the administrator module.

As shown in figure 2.11, the activity management comprises of "add new activity, listing personal activities, reviewing activities, and search for activities". The rector can add a new activity to the system for himself. The following information is needed:

- ❖ Area category ("Temel Bilimler ve Mühendislik", "Sosyal ve İdari Bilimler", "Mimarlık/Tasarım ve Görsel Sanatlar", or "Hukuk") [1].
- ❖ Main Category ("Araştirma Ve Yayin Etkinlikleri") [1].
- ❖ Region Category ("Uluslararası", or "Ulusal/Yerel") [1].
- ❖ Activity Type ("Makale", "Kitap", "Konferans", "Patent", or "Atıflar") [1].
- ❖ Type of activity type:
    1. If "Uluslararası" activity and "Makale" are selected, the following types will be available and the user has to choose only one of them (the following information is taken from [1] directly) :

- **1.1.1.01**: SCI, SSCI, AHCI tarafından taranan basılı dergilerdeki editöre mektup, teknik not, vaka takdimi ve tartışma türü yayınlar dışında makale.

- **1.1.1.02**: Expanded SCI tarafından taranan dergilerdeki editöre mektup, teknik not, vaka takdimi, tartışma türü yayınlar dışında makale.

- **1.1.1.03**: Uluslararası endekslerin kaydettiği hakemli ve süreli dergilerde makale.

- **1.1.1.04**: SCI,SSCI,AHCI, ve Expanded SCI tarafından taranan dergilerde Research report, research note veya technical note şeklindeki tam makale ölçüsündeki yayınlar'; SSCI'de "selectively taranan süreli yayınlarda çıkan makaleler; Fakülte Kurulu tarafından önerilen ve Üniversite Yönetim Kurulu tarafından kabul edilen (uluslararası AI, API, RIBA ve DAAI gibi "alan" endekslerince taranan) süreli yayınlarda yayımlanan makaleler.

- **1.1.1.05**: 1.1.1.01, 02, 03 ve 04 grubu süreli yayınlarda yer alan "book review", teknik not, vaka takdimi, editöre mektup ve tartışma türü yayınlar.

Note: the information here is directly taken from [1] without modified.

2. If "Uluslararası" activity and "Kitap" are selected, the following types will be available and the user has to choose only one of them:

1.1.2.01: Yurt dışı ve uluslararası nitelikte monograf, bilimsel / mesleki / sanatsal kitap veya ders kitabı (Yayımlayan uluslararası kuruluşun niteliğine, kitabın konusunda "tanınmış" bir kuruluş / yayınevi olmasına, hakem/editörlük sürecine, basılan nüsha sayısına bakılacaktır).

1.1.2.02: 1.1.2.01 kitap tanımı dışında kalan uluslararası nitelikli bilimsel/mesleki/sanatsal kitap.

1.1.2.03: 1.1.2.01 kitap tanımına uyan yurt dışı ve uluslararası nitelikte bir kitapta bir bölüm.

1.1.2.04: 1.1.2.02 kitap tanımına uyan yurt dışı ve uluslararası nitelikte bir kitapta bir bölüm.

1.1.2.05: 1.1.2.01 kitap tanımına uyan kitap editörlüğü.

1.1.2.06: 1.1.2.02 kitap tanımına uyan kitap editörlüğü.

Note: the information here is directly taken from [1] without modified.

3. If "Uluslararası" activity and "Patent" are selected, the following types will be available and the user has to choose only one of them:

o **1.1.3.01**: Patent.

Note: the information here is directly taken from [1] without modified.

4. If "Uluslararası" activity and "Konferans" are selected, the following types will be available and the user choose only one of them:

- **1.1.4.01** Bildiri (tam metin), poster. a) Uluslararası ve hakemli konferans ve sempozyumlarda sunulup tam metin olarak (basılı veya elektronik) yayınlanan bildiri/poster, 5 puan b) WebOfScience'da yer alan konferans ve sempozyumlarda tam metin olarak (basılı veya elektronik) bildiri/poster, 8 puan.

- **1.1.4.02** Bildiri (özet). Uluslararası ve hakemli konferans ve sempozyumlarda sunulup özet olarak basılan bildiri.

- **1.1.4.03** Bildiri kitaplı uluslararası konferans düzenlemek

- **1.1.4.04** Uluslararası konferans kitabı editörlüğü

- **1.1.4.05** Uluslararası seçimli veya davetli sergi, proje, uygulama, tasarım, gösteri, vb. organizasyonların etkinliklerine ürünle katılmış olmak.

- **1.2.4.06** Davetli tasarımcı/sanatçı olarak uluslararası etkinlikler kapsamında atölye çalışması düzenlemek.

Note: the information here is directly taken from [1] without modified.

5. If "Uluslararası" activity and "Atıflar" are selected, the following types will be available and the user choose only one of them:

- **1.1.5.01** N = Kitaplarda, SCI, SSCI ve AHCI'ce taranan dergilerde diğer yazarlarca yapılan atıf sayısı.

Note: the information here is directly taken from [1] without modified.

6. If "Ulusal/Yerel" activity and "Makale" are selected, the following types will be available and the user choose only one of them:

• **1.2.1.01** A-Grup Makale: Fakülte Kurulunca onaylanan ve Üniversite tarafından kabul edilen gruplamada A Grubu ulusal süreli yayında çıkan • makale (Bu grupların oluşturulmasında aşağıdaki kıstaslar göz önüne alınacaktır: Yayın kurulunun niteliği; akademik ünvanlı hakemlerle "gizli hakemlik" (blind peer review); düzenli çıkması; bilimsel formata uygunluk; tiraj; "etki katsayısı"; atıf yoğunluğu; reddetme oranı; kurum dışı ve yurt dışı katılım oranları. Herhangibir düzenleme yapılmadığı sürece ODTÜ listesi geçerlidir.) • **1.2.1.02** B-Grup Makale: Fakülte Kurulunca onaylanan ve Üniversite tarafından kabul edilen gruplamada B Grubu ulusal süreli yayında çıkan. • **1.2.1.03** C-Grup Makale: Fakülte Kurulunca onaylanan ve Üniversite tarafından kabul edilen gruplamada C Grubu ulusal süreli yayında çıkan.
Note: the information here is directly taken from [1] without modified.

7. If "Ulusal/Yerel" activity and "Kitap" are selected, the following types will be available and the user choose only one of them:

• **1.2.2.01** Bilimsel, sanatsal ve mesleki kitap, veya ders kitabı yazarlığı (Yayınevi, hakemlik süreci, baskı sayısı ve format bakımından üst düzeyde) • **1.2.2.02:** 1.1.2.01 tanımı dışında kalan bilimsel, sanatsal ve mesleki kitap yazarlığı • **1.2.2.03:** 1.2.2.01 tanımına uyan kitapta bölüm • **1.2.2.04:** 1.2.2.02 tanımına uyan kitapta bölüm • **1.2.2.05:** 1.2.2.01 tanımına uyan kitap editörlüğü • **1.2.2.06:** 1.2.2.02 tanımına uyan kitap editörlüğü
Note: the information here is directly taken from [1] without modified.

8. If "Ulusal/Yerel" activity and "Patent" are selected, the following types will be available and the user choose only one of them:

- **1.2.3.01** Patent

Note: the information here is directly taken from [1] without modified.

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9. If "Ulusal/Yerel" activity and "Konferans" are selected, the following types will be available and the user choose only one of them:

- **1.2.4.01** Bildiri (tam metin), poster. Ulusal ve hakemli konferans ve sempozyumlarda sunulup tam metin olarak (basılı veya elektronik) yayınlanan bildiri/poster

- **1.2.4.02** Bildiri (özet). Ulusal ve hakemli konferans ve sempozyumlarda sunulup özet olarak basılan bildiri.

- **1.2.4.03** Bildiri kitaplı (basılı veya elektronik olarak yayınlanan) ulusal konferans düzenlemek

- **1.2.4.04** (Basılı veya elektronik) ulusal konferans kitabı editörlüğü

- **1.2.4.05** Ulusal seçimli veya davetli sergi, proje, uygulama, tasarım, gösteri, vb. organizasyonların etkinliklerine ürünle katılmış olmak.

- **1.2.4.06** Davetli tasarımcı/sanatçı olarak ulusal etkinlikler kapsamında atölye çalışması düzenlemek.

- **1.2.4.07** Katalog basımlı ulusal bir yarışma/festival/bienal düzenlemek.

Note: the information here is directly taken from [1] without modified.

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10. If "Ulusal/Yerel" activity and "Atıflar" are selected, the following types will be available and the user choose only one of them:

> - **1.2.5.01** N = Kitaplarda ve dergilerde diğer yazarlarca yapılan atıf sayısı
>
> Note: the information here is directly taken from [1] without modified.

❖ Author/Editor/Inventor/Organizer name (the dean's name is added automatically and other author(s)/editor(s)/inventor(s)/organizer(s) can be added manually, either by selecting from the list which contains all registered users to the system or typing by hand).

❖ Activity details:

1. If "Makale" activity type is selected, the following data will be entered: (Title, Journal name, editor(s) name, volume number, Issue number, pages, publisher, abstract, and year).

2. If "Kitap" activity type is selected, the following data will be entered: (Title, chapter title, editor(s)/author(s) name, edition, place of activity, publisher, pages, copyright year, ISBN, abstract, and year).

3. If "Patent" activity type is selected, the following data will be entered: (Patent title, patent number, place of activity, agency issuing patent, publisher and year).

4. If "Konferans" activity type is selected, the following data will be enter: (Title of Paper, conference name, place of conference, author(s)/editor(s) name, publisher, number of product, pages, abstract and year).

5. If "Atıflar" activity type is selected, the following data will be entered: (Last name, first name, middle name, title, city, state, pages, publisher, volume, and print).

❖ Activity areas.

❖ Excluding/Including reviewers (at most 10 user).

❖ Upload full text of activity

While filling the required information mentioned above, the rector can add other author(s) who are not in the list of the university academic staff. After the rector writes first name, middle name, and last name of the other author, a request goes (with the first name, middle name, and last name) to the system for duplicate check (Process 1). The system checks if this author is from the university staff or not (Process 2), and if this author is from the university staff, an appropriate duplication warning message will be sent to the rector; otherwise, a response about permission to be able to add this author manually will be sent (Process 3). While filling the required information above, the rector enters activity title (i.e. article title, conference title, book title, or patent title). While the rector types the activity title, the title will be sent to the system (Process 4). After that, the system checks for duplication of the title (Process 5). If there is a duplicate, a message will be sent; otherwise no action will be sent (Process 6). The rector sends new activity information (Process 7). Afterwards, the new activity will be created and all information entered will be stored in the database (Process 8). A message will be sent to the rector as the new activity creation is done or not (Process 9). Rector is able to list personal activities. The rector requests the list (Process 10). Then, the system forms the list with the information consisting of author(s)/editor(s)/inventor(s)/organizer(s), activity type, activity title, published year, status and citations (Process 11). The formed list will be sent to the rector (Process 12). When selected as a reviewer, the rector is able to evaluate activities as a reviewer. The rector requests the review list (Process 13). Then, the system will form the list composed of the information activity id, area category, main category, category, activity type, type of activity type, author(s)/inventor(s)/editor(s)/organizer(s), activity

title, activity details (for 'Makale' activity type (title, journal name, editor(s) name, volume, issue, page(s), publisher, and abstract), for 'Kitap' activity type (book title, chapter, editor(s)/author(s) name, edition, place of activity, publisher, page(s), copyright year, ISBN, and abstract), for 'Patent' activity type (patent title, patent number, agency issuing patent, and publisher), for 'Konferans' activity type (title of paper, conference name, place of conference, author(s), editor(s) name, publisher, number of product, page(s), and abstract), for 'Atıflar' activity type (last name, first name, middle name, title, city, state, page(s), publisher, volum, and print) (Process 14). The formed list will be sent to the rector (Process 15). The rector sends activity id (by selecting it form the list taken in process 15) to approve the activity (Process 16). The system will store the activity information in the database (Process 17). A message will be sent to the rector about the store operation for approve (process 18). The rector has right to reject activities too. In the first instance, the rector will send the activity id (by selecting it from the list taken in process 15) to reject the activity (Process 19). Then, the system will store all activity information and rejection reason in the database (Process 20). A message will be sent to the rector about the store operation for reject (Process 21). The rector has freedom of choice option. For any reason, if s/he wants to not evaluate the activity, s/he has a right to skip it. To do this, the rector will send the activity id (by selecting it from the list taken in processes 15) to skip the activity (Process 22). The system will store all activity information in the database (Process 23). A message will send to the rector about the store operation for skip (Process 24).The rector is allowed to search for activities of all academic staff within the system. Rector can obtain academic staff activities by sending activity data consisting of the following criteria fields (Process 25):

- ❖ Main Category ("Araştırma ve Yayın Etkinlikleri") [1].
- ❖ Category ("Uluslararası", or "Ulusal/Yerel") [1].

- ❖ Activity Type ("Makale", "Kitap", "Konferans", "Patent", or "Atıflar") [1].

- ❖ Type of Activity Type (All, or specific type) [1].

- ❖ Date (All years, year range, or monthly (1month/3months/6months))

- ❖ Faculty (All, or specific faculty name).

- ❖ Departments (All, or specific department name).

- ❖ Research Interests (All, or specific research interest name).

- ❖ Status (All, accepted, rejected, or waiting)

- ❖ Activity data (authors, activity title, ISBN, issue, journal name, or conference name) (optional).

Thereafter, the system will look for the activities in the database (Process 26). If any activities were found, the number of result found and the activities information will be sent to the rector; otherwise, a message will be sent to the rector that the activity were not found (Process 27).
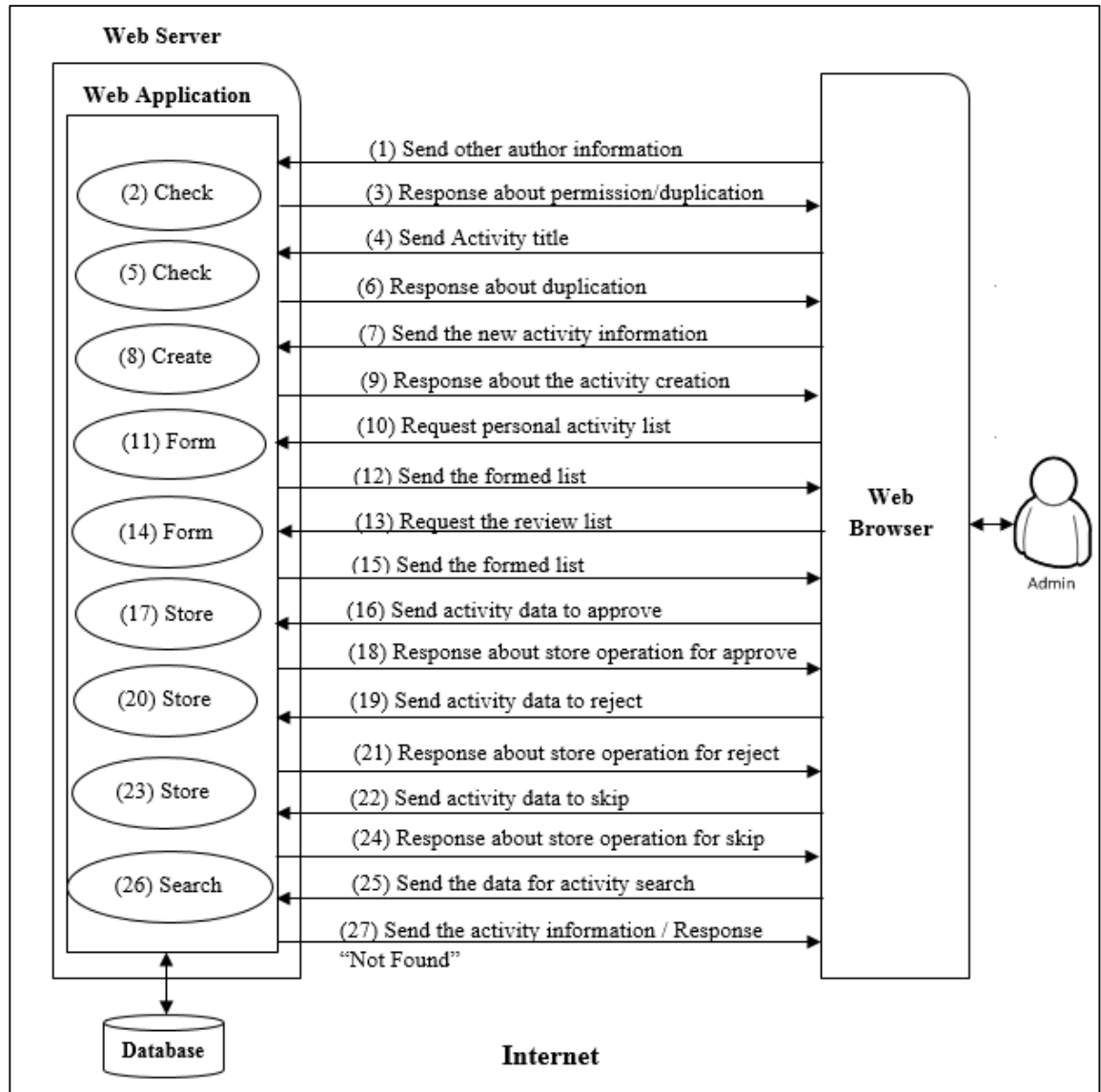
Figure 2.11: Rector Activity Management

As it can be seen in figure 2.12 the activities statistics section of rector module is illustrated. The rector is able to view statistic of activities in the system. The rector obtains the statistics by sending data consisting of the following criteria fields (Process 1):

❖ Main Category ("Araştirma Ve Yayin Etkinlikleri") [1].

❖ Category ("Uluslararası", or "Ulusal/Yerel") [1].

❖ Activity Type ("Makale", "Kitap", "Konferans", "Patent", or "Atıflar") [1].

❖ Date (All years, or year range)

❖ Faculty (All or a specific faculty name).

❖ Departments (All, or specific department name).

❖ Authors (All, or specific author name).

Thereafter, the system produces the activities statistics according to the criteria in process 1 (Process 2). Then, the activities statistic will be sent to the rector with the information years (start year/month/day, end year/month/day), type of activity type, total numbers of activities based on type of activity type, and number of activities by year/month/day (Process 3).
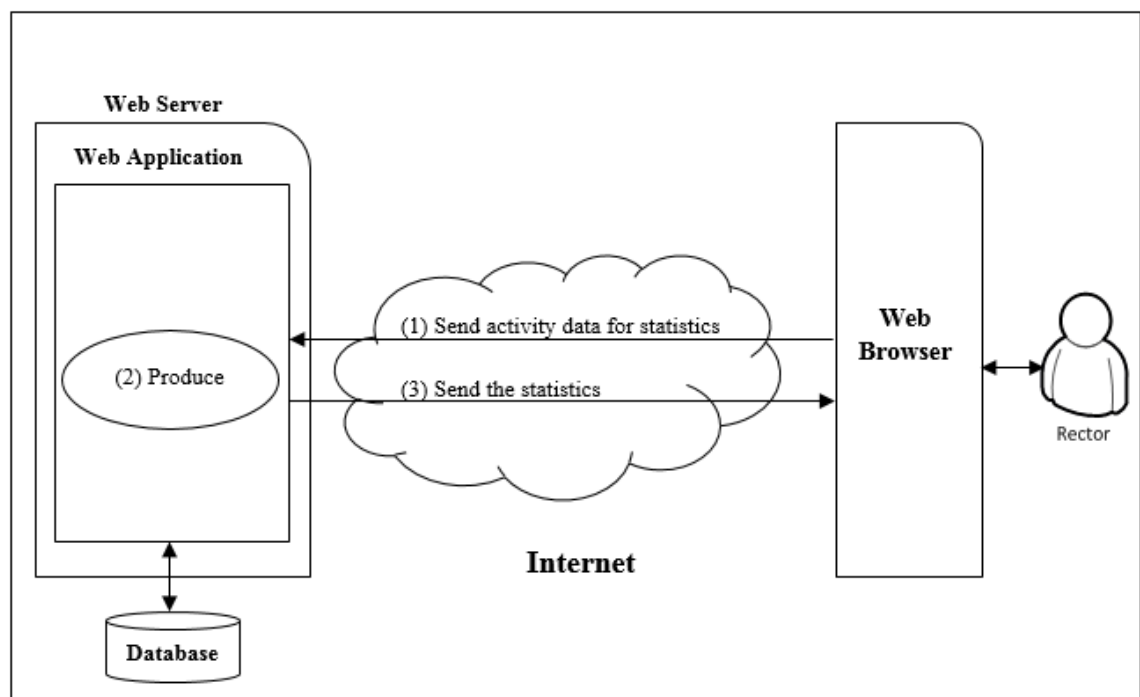

Figure 2.12: Rector Activity Statistics

The rector can manage profile information as same with the administrator module.

2.1.3 Dean Module

The "Dean" module is the third module in the system. Dean can manage users (i.e. search for, list users), messaging management (i.e. compose new messages, list all inbox/outbox messages, and delete inbox/outbox messages as explained previously in

administrator independent messaging management section), activity management (i.e. add new activity, list personal activities, reviewing activities, search for activities based on departments in the faculty), activity statistics (view activity statistics based on departments in the faculty), and profile management(i.e. edit personal information).

The dean can manage users as same with the administrator module, and the only difference is that the dean can search for and lists users only based on department in faculty.

The dean can manage activities as same with the rector module, and the only difference is that the dean can search for activities only based on departments in faculty.

The dean can manage messages as same with the administrator module.

Figure 2.13 demonstrates the activities statistic section. The dean can produce statistics of activities based on departments in the faculty. Dean obtains the statistics by sending data consisting of the following criteria fields (Process 1):

❖ Main Category ("Araştirma Ve Yayin Etkinlikleri") [1].

❖ Region Category ("Uluslararası", or "Ulusal/Yerel") [1].

❖ Activity Type ("Makale", "Kitap", "Konferans", "Patent", or "Atıflar") [1].

❖ Date (All years, year range, or monthly (1month/3months/6months))

❖ Departments (All, or specific department name).

❖ Authors (All, or specific author name).

Thereafter, the system produces the statistics according to the criteria in process 1 (Process 2). Then, the statistics will be sent to the dean with the information years

(start year/month/day, end year/month/day), type of activity type, total numbers of activities based on type of activity type, and number of activities by year/month/day (Process 3).
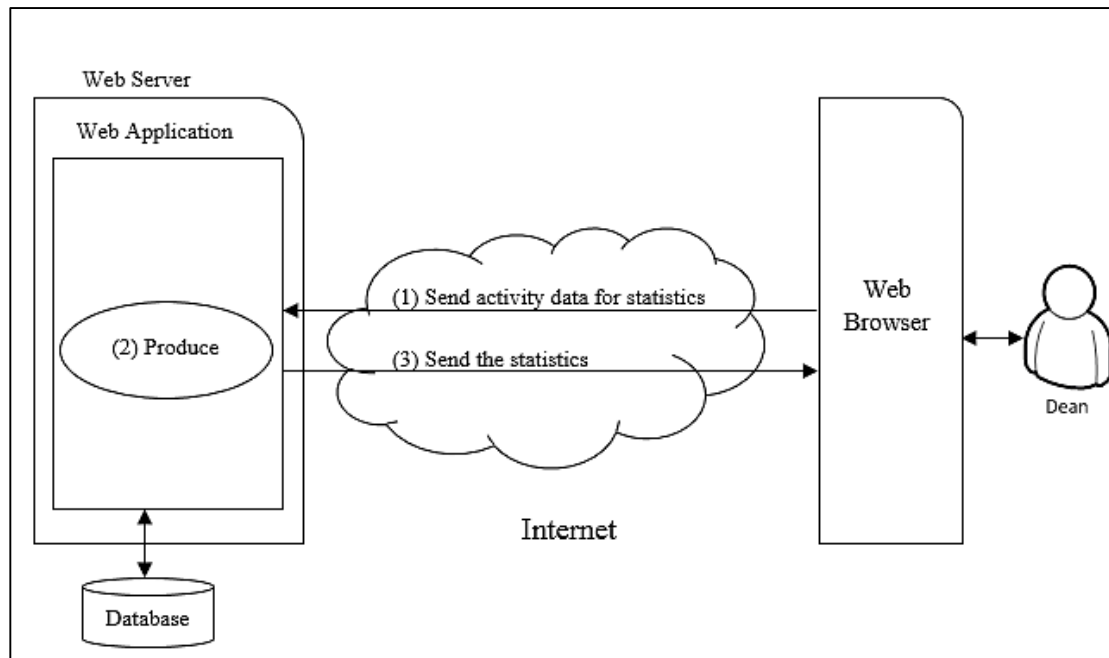

Figure 2.13: Activity Statistics

The dean can manage profile information as same with the administrator module.

2.1.4 Chairman Module

The fourth module in the system is "Chairman" module. The chairman is permitted to manage the users (list and search for department users), messaging management (i.e. compose new message, list all inbox/outbox messages, and delete inbox/outbox messages), activity management (i.e. add new activity, list personal activities, reviewing activities, and search for activities only in the department), activity statistics (view department activity statistics), and profile management (i.e. edit personal information).

The chairman can manage users as same with the administrator module, and the only difference is that the chairman can search for and lists users only in his/her deparment.

The chairman can manage activities same as the rector module, and the only difference is that the chairman can search for activities only on his/her department.

The chairman can manage messages as same with the administrator module.

As it shown in figure 2.14, the chairman can produce statistics of activities of the department. The chairman obtains statistics by sending data consisting of the following criteria fields (Process 1):

- Main Category ("Araştırma Ve Yayın Etkinlikleri") [1].
- Region Category ("Uluslararası", or "Ulusal/Yerel") [1].
- Activity Type ("Makale", "Kitap", "Konferans", "Patent", or "Atıflar") [1].
- Date (All years, year range, or monthly (1month/3months/6months))
- Departments (All, or specific department name).
- Authors (All, or specific author name).

Thereafter, the system prepares the activities statistic according to the criteria in process 1 (Process 2). Then, the statistic will be sent to the chairman with the information years (start year/month/day, end year/month/day), type of activity type, total numbers of activities based on type of activity type, and number of activities by year/month/day (Process 3).
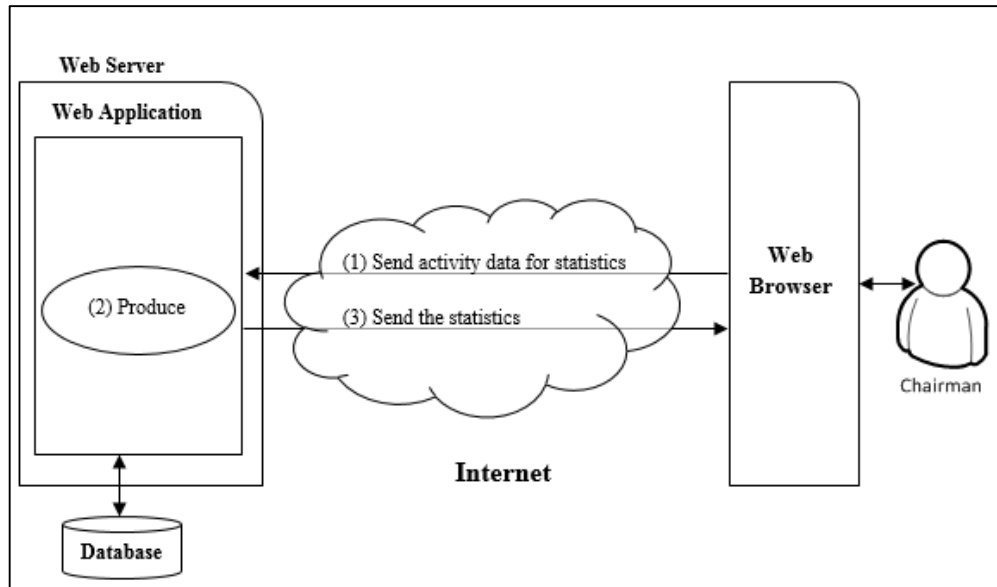
Figure 2.14: Activity Statistics

The chairman can manage profile information as same with the administrator module.

2.1.5 Instructor Module

The last module in the system is the "Instructor" module. The instructor only has control of his/her profile management (i.e. edit personal information), messaging managements (i.e. compose new message, list all inbox/outbox messages, and delete inbox/outbox messages), and activity management (i.e. add new activity, list personal activities, and reviewing activities, the only difference is that the instructor cannot search for any activities in the system).

The instructor can manage activities same as the rector module, and the only difference is that the instructor is not able to search for any activities in the system.

The instructor can manage messages as same with the administrator module.

The instructor can manage profile information as same with the administrator module.

2.1.6 Reviewer Process Management Module

Figure 2.15 illustrates the processes of reviewer process management application. RPMA is a mechanism used to have more accurate and more reliable information in the system. The source code for the RPMA is given in appendix A. When a new activity is added, RPMA is automatically executed. First of all, (step 1) RPMA checks for reviewer by comparing the author's area of expertise with the other users' in the university; (step 2) if it is not matched, then the system will check the author's department to find suitable reviewers for his/her activity; (step 3) if it is not matched again, then the system will check author's faculty to look for suitable reviewers for his/her activity; (step 4) if it is not matched over again, the system will check the university to find suitable reviewers for his/her activity; and (step 5) if there is no match at all, the activity will be handed to the administrator to select the reviewer manually (Process 1). Note that in process 1, if more than one reviewers matched in step 1, 2, 3, or 4, only one of them will be selected randomly. Afterword, RMPA assigns the duty to the selected reviewer by saving an appropriate record in the database (i.e. activity details, author(s), and other author(s), and reviewer id) and although the reviewer can see this duty assignment when s/he logins to the system, RMPA inform him/her by sending an email (Process 2).
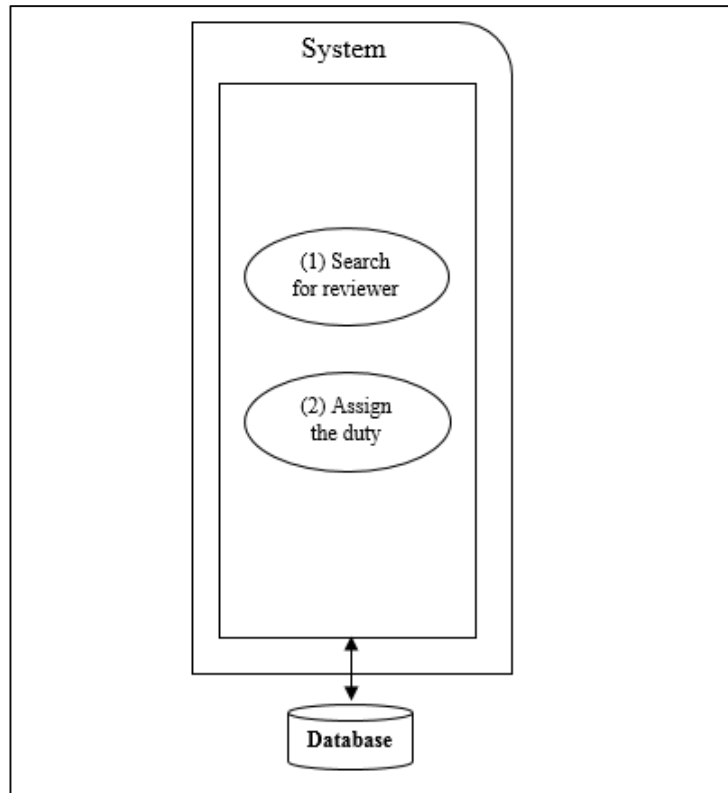
Figure 2.15: Review Process Management Application

2.2 Use Case Modeling

Figure 2.16 shows the class diagram of the system. Our system is developed on 23 classes

pub_catfirst
id INT(11)
line INT(4)
name VARCHAR(255)

pub_department
id INT(11)
name VARCHAR(255)
text TEXT

publication
id INT(11)
pub_catfourth_id INT(11)
pub_department_id INT(11)
pub_user_department_id INT(11)
pub_mark_id INT(11)
research_interest_id INT(11)
title VARCHAR(255)
page_number VARCHAR(255)
publisher TEXT
address TEXT
year DATE
abstruct LONGTEXT
pub_status_id INT(11)
controller_userid INT(255)
volume LONGTEXT
patent_number LONGTEXT
edition LONGTEXT
isbn LONGTEXT
product_type LONGTEXT
file VARCHAR(255)
added_date DATE
location VARCHAR(255)
chapter VARCHAR(255)
section VARCHAR(255)
agency VARCHAR(255)
conferance_name VARCHAR(...
journal VARCHAR(255)
issn VARCHAR(255)
issue VARCHAR(255)
article_doi VARCHAR(255)
skip_reason TEXT
skip_date DATE
count_view INT(11)
c_lastname VARCHAR(50)
c_firstname VARCHAR(50)
c_middlename VARCHAR(50)
c_pubid INT(11)
c_year DATE
c_title TEXT
c_city VARCHAR(100)
c_state VARCHAR(100)
c_publisher VARCHAR(100)

pub_catsecond
id INT(11)
pub_catfirst INT(11)
line INT(4)
name VARCHAR(255)

pub_otherauthor
id INT(11)
authorname VARCHAR(255)
pub_id INT(11)

pub_catthird
id INT(11)
pub_catsecond INT(11)
line INT(4)
name VARCHAR(255)

pub_catfourth
id INT(11)
pub_catthird INT(11)
line INT(4)
name TEXT

pub_reject
id INT(11)
pub_id INT(11)
reason LONGTEXT

pub_mark_procedure
id INT(11)
pub_dep_id INT(11)
pub_cat_forth_id INT(11)
mark INT(11)

pub_author
id INT(11)
pub_id INT(11)
user_id VARCHAR(255)

user_interest
id INT(11)
user_id VARCHAR(20)
interest_id INT(11)
active INT(11)

uni_faculty
id INT(11)
name VARCHAR(255)
text TEXT

uni_department
id INT(11)
faculty_id INT(11)
name VARCHAR(255)
text TEXT

research_interest
id INT(11)
name VARCHAR(255)
text TEXT
accepted INT(11)

user_mark
id INT(11)
user_id VARCHAR(255)
pub_id INT(11)
mark FLOAT

pub_status
id INT(11)
name VARCHAR(255)
text TEXT

logs
id INT(11)
departmant_id INT(11)
owner_id INT(11)
description LONGTEXT
status TINYINT(4)
logdate DATETIME

user
id INT(11)
user_id VARCHAR(255)
user_type_id INT(11)
department_id INT(11)
interest_id INT(11)
referee TINYINT(4)
title INT
name VARCHAR(255)
middlename VARCHAR(255)
surname VARCHAR(255)
birthdate DATE
nationality VARCHAR(255)
gender VARCHAR(255)
email VARCHAR(255)
cellphone VARCHAR(255)
officephone VARCHAR(255)
officenumber VARCHAR(255)
address TEXT
cv VARCHAR(255)
img VARCHAR(255)
password VARCHAR(44)
about LONGTEXT
education LONGTEXT
experience LONGTEXT
memberships LONGTEXT
duties LONGTEXT
view_publication TINYINT(4)
creation_date DATE
edit_date DATE

user_type
id INT(11)
name VARCHAR(255)
permission VARCHAR(255)
permissons TEXT

user_message
id INT(11)
sender_id INT(11)
reciver_id INT(11)
message TEXT
messagedate DATETIME
viewed INT(11)

user_title
id INT(11)
name VARCHAR(255)

referee_time_period
id INT(11)
days INT(11)

Figure 2.16: Class Diagram of the System

The system actors will be described in sections from 2.2.1 to 2.2.5.

2.2.1 Administrator actor

- **Login and logout:** The administrator login/logout from the system.

- **Create new faculty and department:** Administrator is able to create faculty or department and assign users to their departments.

- **List faculties and departments:** Administrator can list faculties and departments.

- **Add new research interest:** Administrator is able to create new research interests and assign them to the users.

- **List research interests:** The administrator can list all research interests in the system.

- **Create user:** The administrator has the privilege to create new user (users can be a rector, dean, chairman, or instructor).

- **Edit user:** Administrator has all rights to edit user's information.

- **Search user:** The administrator is able to search for in the system.

- **Delete user:** Administrator is able to delete user from the system.

- **Send/receive messages:** Administrator is able to send and receive messages to all users.

- **Add new administrator:** Administrator can create a new user as administrator.

- **List and search for activities:** Administrator is able to list and search for all or specific activity in the system

- **Assign reviewers manually:** Administrator can manually assign reviewers for evaluating activities.

- **Producing activities statistic:** Administrator can generate statistics of activities (the administrator can view statistics by category, date, faculty, department, author, and status).

- **View balancing distribution list:** Administrator is able to view balancing distribution list.

- **Assign review period:** Administrator is able to configure the reviewers' review period setting.

- **Edit profile:** Administrator has full rights to edit own personal information.
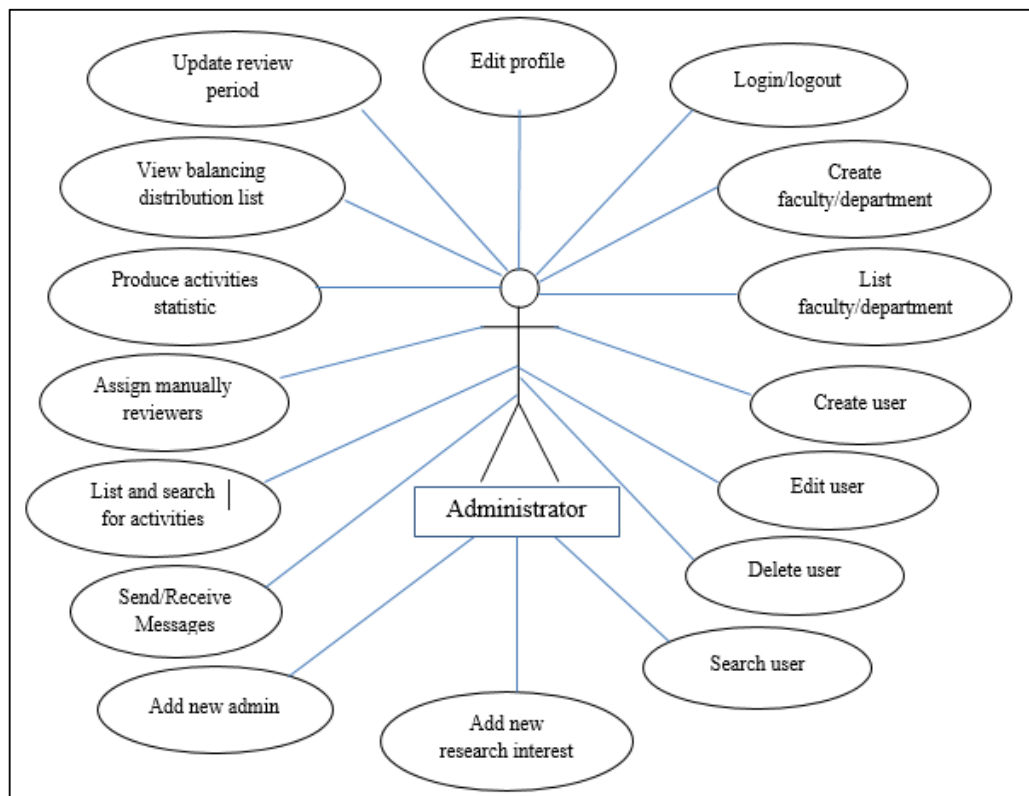
Figure 2.17: Administrator Actor

2.2.2 Rector Actor

- **Login/logout:** The rector can login/logout from the system.

- **List users:** The rector is able to have users list.

- **Search users:** The rector can search for users according to user's information.

- **Send/Receive messages:** The rector can send and receive messages to the users.

- **Add new activity:** The rector is able to add new activities

- **List personal activities:** The rector can list his/her personal activity.

- **List and search for all activities:** The rector is able to list and search for all activities.

- **View activities statistic:** the rector can view statistics by category, date, faculty, department, authors, or status.

- **Edit profile:** the rector can edit own personal information.
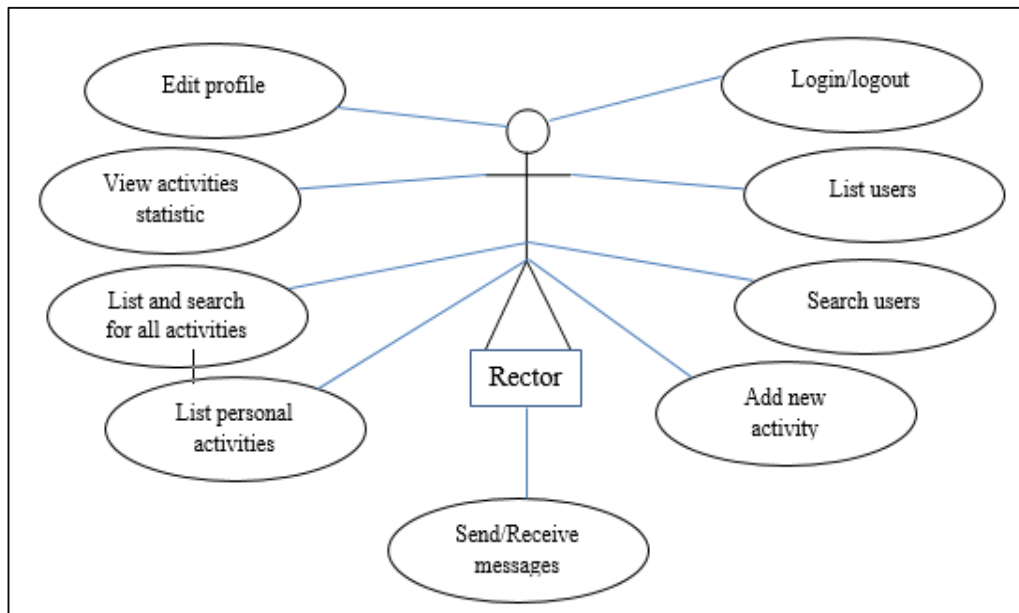
Figure 2.18: Rector Actor

2.2.3 Dean Actor

- **Login/logout:** The dean can login/logout from the system.

- **List faculty users:** The dean is able to have users list for own faculty.

- **Search users:** The dean can search for users within faculty.

- **Send/Receive messages:** The dean can send and receive messages the users.

- **Add new activity:** The dean is able to add new activity.

- **List personal activities:** The dean can list his/her personal activities.

- **List faculty activities:** The dean is able to list all departments' activities.

- **Search for activities:** The dean can search for activities in the faculty.

- **View faculty statistic:** The dean can view activities statistics for departments in the faculty.

- **Edit profile:** The dean is able to edit own personal information.
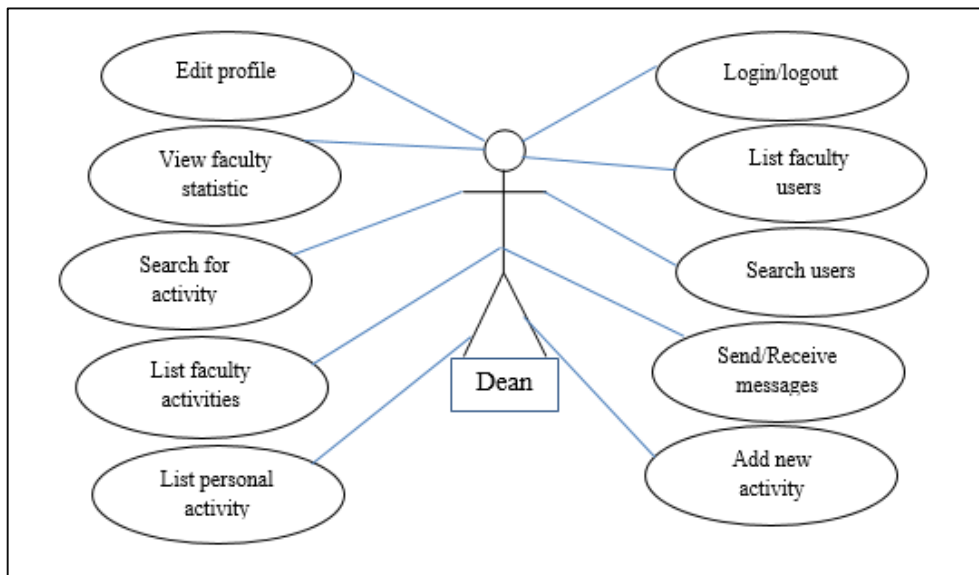
Figure 2.19: Dean Actor

2.2.4 Chairman Actor

- **Login/logout:** The chairman can login/logout from the system.

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- **List department users:** The chairman is able to have user list for own department.

- **Search users:** The chairman can search for users within department.

- **Send/receive messages:** The chairman can send and receive messages to the users.

- **Add new activity:** The chairman can add new activities.

- **List personal activities:** The chairman is able to list his/her personal activities.

- **List department activities:** The chairman can list department's activities.

- **Search for activities:** Chairman is able to search for activities in the department.

- **View department activities statistics:** The chairman can view activity statistics of department.
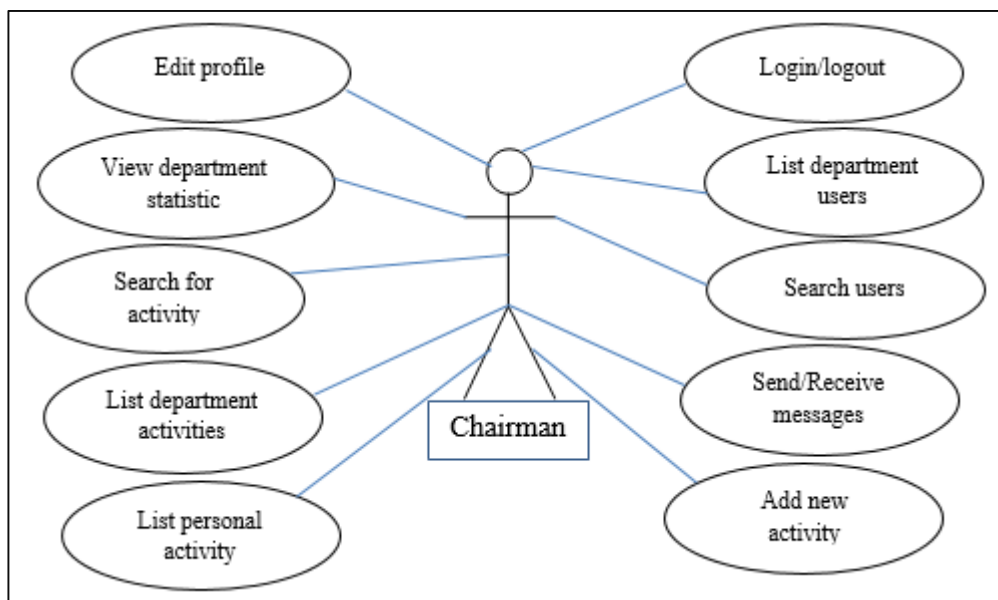
Figure 2.20: Chairman Actor

2.2.5 Instructor Actor

- **Login/logout:** The instructor can login/logout from the system.

- **Send/Receive messages:** The instructor can send and receive messages to the users.

- **Add new activity:** The instructor can add new activities.

- **List personal activities:** The instructor is able to list his/her personal activities.

- **Edit profile:** The instructor is able to edit own personal profile.
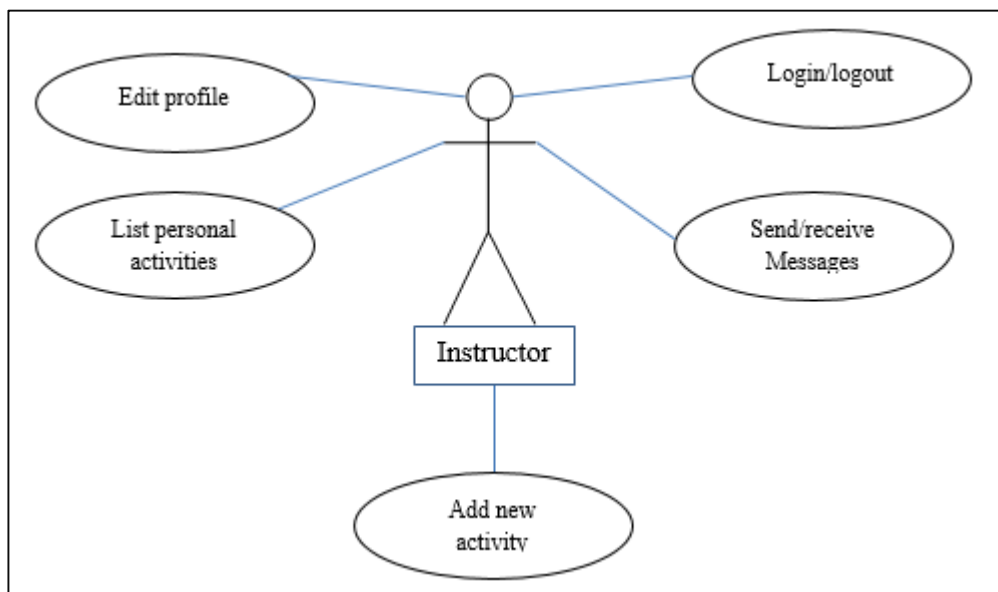
Figure 2.21: Instructor Actor

2.3 Database Relationships

Database is a collection of information of the system. The database of system created with MySQL. The database contains all the information that needed to design the system. The 'academic_activity.sql' database stores all the information about all the activities, users, faculties/departments, and research interests. There are 23 tables to serve the system all these tables, field names, primary keys, and the relationships of the database are shown in figure 2.22.
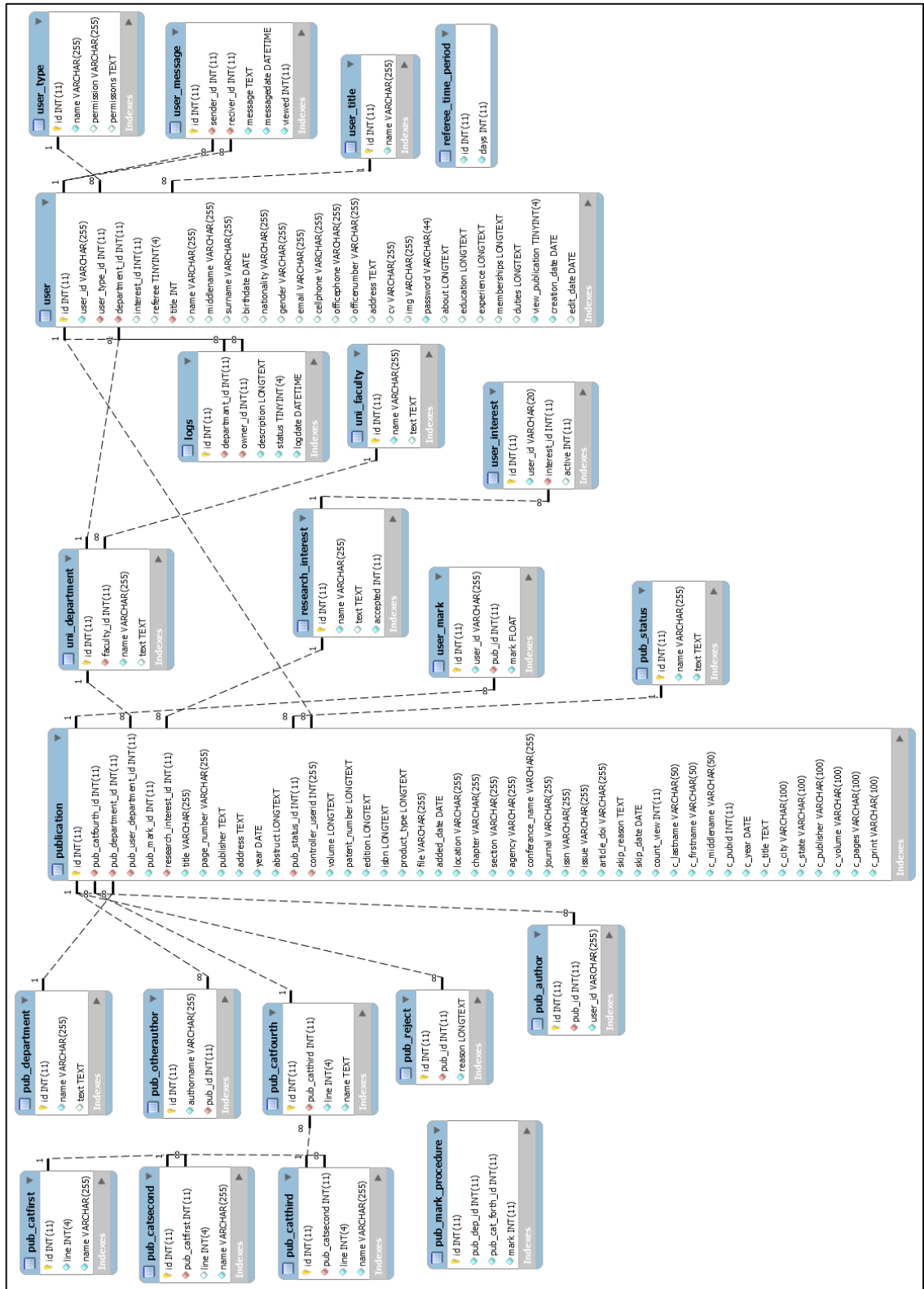
Figure 2.22: Database Diagram

The "publication" table (Table.1) stores the activities information. The primary key of "publication" table is the 'id' field and is defined for each activity. When the user creates a new activity, the system automatically assigns a unique integer value for each activity. The 'title' field stores the title of the activity; 'page_number' field saves activity page numbers; 'publisher' field stores the activity publisher information; 'year' field stores the activity creation date; 'abstract' field store the activity abstract text; 'volume' field stores the quantity of all published papers; 'edition' field stores the number of edition; 'isbn' field store the book number; the activity document for each activity is stored in 'file' field; 'added_date' store the exact date of activity added; 'location' field stores the place of activity; 'chaper' field stores the title of book chaper of an activity; 'patent_number' field stores the patent identifier number; 'conference_name' field stores name of conference; 'journal' field stores the title of journal; 'issue' field stores the article issue number; 'skip_reson' field stores the reason of activity been skipped by the reviewer; 'skip_date' field stores the date of skipped activity; 'count_view' field stores the total number of views; 'c_lastname' field stores the last name of the writer who cites the activity; 'c_firstname' field stores the first name of writer who cites the activity; 'c_middlename' field stores the middle name of writer who cites the activity; 'c_year' field stores the citation year; and 'c_title' field stores the title of paper which cited the activity. The 'pub_catfourth_id' field of 'publication' table is a foreign key for the field 'id' of the 'pub_catfourth' table. The relationship between these fields is many-to-many. Similarly, the 'pub_ department _id' field of 'publication' table is a foreign key for the field 'id' of the 'pub_ department' table, and the relationship between these fields is many-to-one. The 'pub_user_department_id' field of the 'publication' table is a foreign key for the field 'department_id' of the 'user' table. The relationship between these fields is many-to-one. The 'research_interest_id' field of 'publication' table is a foreign key for the field

'id' of the'research_interest' table. The relationship between these fields is many-to-one. The 'pub_status_id' field of 'publication' table is a foreign key for the field 'id' of the 'pub_status' table. The relationship between these fields is many-to-one. The 'controller_userid' field of the 'publication' table is a foreign key for the field 'id' of the 'user' table. The relationship between these fields is many-to-one.

Table 1: "publication" Table with Its Attributes

Table: activity		
	Filed Name	**Data Type**
Primary key	id	int(11)
Foreign key	pub_catfourth_id	int(11)
Foreign key	pub_department_id	int(11)
Foreign key	pub_user_department_id	int(11)
Foreign key	research_interest_id	int(11)
	title	varchar(255)
	page_number	varchar(1000)
	publisher	text
	year	date
	abstruct	longtext
Foreign key	pub_status_id	int(11)
Foreign key	controller_userid	int(255)
	volume	longtext
	edition	longtext
	isbn	longtext
	product_type	longtext
	file	varchar(255)
	added_date	data
	location	varchar(1000)
	chapter	varchar(1000)
	patent_number	longtext
	conferance_name	varchar(1000)
	journal	varchar(1000)
	issue	varchar(1000)
	skip_reason	Text
	skip_date	data

count_view	int(11)
c_lastname	varchar(50)
c_firstname	varchar(50)
c_middlename	varchar(50)
c_year	date
c_title	text

'pub_department' table (table.2) contains all the records of the Area Category. The field 'id' is the primary key of 'pub_category' table and it shows the record number. 'name' field represents the name of area category.

Table 2: "pub_ department" Table with Its Attributes

Table: pub_category		
	Field Name	**Data Type**
Primary key	Id	int(11)
	name	varchar(255)

'pub_catfirst' table (table.3) contains the main category information. The 'id' field is the primary key of 'pub_catfirst' table and it shows number of records. 'name' field represents the name of main category.

Table 3: "pub_catfirst" table

Table: pub_catfirst		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)

'pub_catsecond' table (table.4) contains regional category information. The 'id' field is the primary key of the 'pub_catsecond' table and it shows the record number. 'name' field represents the name of regional categories. The 'pub_catfirst_id' field of 'publication' table is a foreign key for the field 'id' of 'pub_catfirst' table. The relation between these tables is one-to-many.

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Table 4: "pub_catsecond" Table with Its Attributes

Table: pub_catsecond		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)
Foreign Key	pub_catfirst_id	int(11)

'pub_catthird' table (table.5) contains all activity type information. The 'id' field is the primary key of the 'pub_catthird' table and it shows number of records. The 'name' field represents the name of each activity type. The 'pub_catsecond_id' field of the 'pub_catthird' table is the foreign key for the 'id' field of 'pub_second' table. The relationship between 'pub_catthird' and 'pub_second' table is one-to-many.

Table 5: "pub_catthird" Table with Its Attributes

Table: pub_catthird		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)
Foreign Key	pub_catsecond_id	int(11)

'pub_catfourth' table (table.6) holds all information about type of activity type. The 'id' field is the primary key of the 'pub_catfourth' table and it shows number of records. The 'name' field is for the name of each activity type. The 'pub_catthird_id' field of the 'pub_catfourth' table is the foreign key for the 'id' field of 'pub_catthird' table. The relationship between 'pub_catfourth' and 'pub_catthird' table is one-to-many.

Table 6: "pub_carfourth" Table with Its Attributes

Table: pub_ catfourth		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)
Foreign Key	pub_catthird_id	int(11)

'pub_author' table (table.7) stores the authors' information. The 'id' field is the primary key of the 'pub_auhtor' table and it shows the records number. The 'user_id' field stores the academic id of the user. The 'pub_id' field of the 'pub_author' table is the foreign key for the 'id' field of 'publication' table. The relationship between 'pub_auhtor' and 'publication' table is one-to-many.

Table 7: "pub_author" Table with Its Attributes

Table: pub_author		
	Field Name	**Data Type**
Primary key	Id	int(11)
	user_id	varchar(255)
Foreign key	pub_id	int(11)

'pub_otherauthor' table (table.8) keeps all information related with the other authors. The 'id' field is the primary key of the 'pub_otherauthor' and shows records number. The 'authroname' field stores the name and surname of the other author(s). The 'pub_id' field of 'pub_otherauthor' table is the foreign key for the 'id' field of the 'publication' table. The relation between 'pub_otherauthor' and 'publication' table is one-to-many.

Table 8: "pub_otherauthor" Table with Its Attributes

Table: pub_otherauthor		
	Field Name	**Data Type**
Primary key	id	int(11)
	authroname	varchar(255)
Foreign key	pub_id	int(11)

'pub_reject' table (table.9) stores information of rejected activities. The 'id' field is the primary key of 'pub_reject' table and shows record number. The 'reason' fields stores the reason information. The 'pub_id' field of 'pub_reject' table is the foreign key for 'id' field of the 'publication' table. The relation between these tables is one-to-many

Table 9: "pub_reject" Table with Its Attributes

Table: pub_reject		
	Field Name	**Data Type**
Primary key	id	int(11)
	reason	longtext
Foreign key	pub_id	int(11)

'pub_status' table (Table.10) deals with the status information of activity. The 'id' field is the primary key of 'pub_status' table and it shows the record number. The 'name' field shows status name and its values 1, 2, 3, or 4. The value '1' represents the 'Pending', the value '2' represents 'Approved', the value '3' represents 'Denied', and the value '4' represents 'Skipped'.

Table 10: "pub_status" Table with Its Attributes

Table: pub_status		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)

'research_interest' table (table.11) stores information about research interests. The 'id' field is the primary key of 'research_interest' table and it shows the record number. The 'name' field stores the name of research interests. The 'status' field stores the research interest if it's approved or not. It can have values 0 or 1. The value 0 represents the research interest is not approved and the value 1 represents the research interests is approved by the administrator.

Table 11: "research_interest" Table with Its Attributes

Table: research_interest		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)
	status	int(11)

'uni_department' table (table.12) keeps all departments' information. The 'id' field is the primary key of 'uni_department' table and it shows the records number. The 'name' field stores the name of the department. The 'faculty_id' field of 'uni_department' table is the foreign key for 'id' field of the 'uni_faculty' table. The relation between these tables is one-to-many.

Table 12: "uni_department" Table with Its Attributes

Table: uni_department		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)
Foreign key	faculty_id	int(11)

'uni_faculty' table (table.13) stores all related information about the faculty. The 'id' field is the primary key of 'uni_faculty' table and it shows the records number. The 'name' field stores the name of the faculty. The 'text' field stores the description of the faculty.

Table 13: "uni_faculty" Table with Its Attributes

Table: uni_faculty		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)
	text	text

The 'user' table (table.14) stores all the information related with the user. The 'id' field is for the primary key of the 'user' table and shows record number. The 'user_id field store user academic id. 'referee field is for the permission allows the users to be assigned as reviewer by the system and it has values 0 or 1. Value 1 means that the user is able be selected as a reviewer by the system and value 0 means that the user will not selected as a reviewer by the system. The 'name' field stores the user's first name. The 'middlename' field stores the user's second name and it's optional to fill it or leave it blank. 'surname' field stores last name. The 'birthdate' field is for date of

birth. 'nationality' field stores is for nationality. The 'gender' field holds the user's identity. There are two types of gender; male represented by value 0, female represented by value 1. The 'email' field stores user's email address. 'cellphone' field is for phone number. 'officephone' field stores the user's office phone number. 'officenumber' field stores the office room number. The 'address' field store the address of the user. The 'cv' field stores the curriculum vitae file of the user. 'img' field stores the picture of the user. The 'password' field stores user password. The 'about' fields store a brief information about the user. 'education' field stores the qualifications of the user. 'academic_career' field stores the positions of the user. 'duties' field store the administrative positions of the user. The 'creation_date' field stores registration date. Finally, the 'edit_date' field stores the exact date of user update.The 'user_type_id' field of the 'user' table is the foreign key for the field 'id' of 'user_type' table. The relationship between 'user' and 'user_type' table is many-to-one. The 'department_id' field of 'user' table is the foreign key for 'id' of the 'uni_department' table. The relationship between 'user' and 'uni_department' table is many-to-one. The 'title_id' field of 'user' table is the foreign key for the field 'id' of 'user_title' table. The relationship between 'user' and 'user_title' table is many-to-one.

Table 14: "user" Table with Its Attributes

Table: user		
	Fields Name	**Data Type**
Primary key	id	int(11)
	user_id	varchar(255)
Foreign key	user_type_id	int(11)
Foreign key	department_id	int(11)
	reviewer	tinyint(4)
Foreign key	title_id	tinyint(4)
	name	varchar(255)
	middlename	varchar(255)
	surname	varchar(255)
	birthdate	date
	nationality	varchar(255)
	gender	varchar(255)
	email	varchar(255)
	cellphone	varchar(255)
	officephone	varchar(255)
	officenumber	varchar(255)
	address	text
	cv	varchar(255)
	img	varchar(255)
	password	varchar (44)
	about	longtext
	education	longtext
	academic_career	longtext
	duties	tinyint(4)
	creation_date	data
	edit_date	data

'user_interest' table (table.15) keeps information about the research interests of the user. The 'id' field is the primary key of 'user_interest' table and it shows the records

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number. The 'user_id' field is for user academic id. The 'interest_id' field of 'user_interest' table is the foreign key for 'id' field of the 'research_interest' table. The relation between these tables is many-to-many.

Table 15: "user_interest" Table with Its Attributes

Table: user_interest		
	Field Name	**Data Type**
Primary key	id	int(11)
	user_id	varchar(20)
Foreign key	interest_id	int(11)

The activity points that each user gains are stored in 'user_mark' table (table.16). When the reviewer approves an activity, the points attributed for that activity will be given and saved in 'user_mark' table for that user. The 'id' field is the primary key of 'user_interest' table and it shows records number. The 'mark' field store activity points. The 'user_id' field of 'user_mark' table is the foreign key for 'user_id' field of 'user' table. The relation between these tables is one-to-many. The 'pub_id' field of 'user_mark' table is the foreign key for 'id' field of the 'publication' table. The relation between these tables is one-to-many.

Table 16: "user_mark" Table with Its Attributes

Table: user_mark		
	Field Name	**Data Type**
Primary key	id	int(11)
Foreign key	user_id	varchar(20)
Foreign key	pub_id	int(11)
	mark	float

'user_message' table (table.17) stores messages information. When the user send/receive message, the contents of the message will be saved in 'user_message' table. The 'id' field is the primary key of 'user_message' table and it shows records number. The 'message' field store the message content. 'title' field store the title of each message. The 'messagedate' field store the messages send/receive. The 'viewed' field store the status of message. It has two values 0, 1. The value '0' represents the message not viewed yet, and the value '1' represents the message has been view by the user. The 'send_id' field of 'user_mark' table is the foreign key for 'id' field of 'user' table. The relation between these tables is one-to-many. The 'reciver_id' field of 'user_mark' table is the foreign key for 'id' field of the 'user' table. The relation between these tables is one-to-many.

Table 17: "user_message" Table with Its Attributes

Table: user_message		
	Field Name	**Data Type**
Primary key	id	int(11)
Foreign key	send_id	int(11)
Foreign key	reciver_id	int(11)
	message	text
	title	varchar(255)
	messagedate	datetime
	viewed	int(11)

The 'user_title' table (table.18) contains information about academic titles. The 'id' field is the primary key of 'user_title' table and it shows records number. The 'name' field stores the academic titles name.

Table 18: "user_notification" Table with Its Attributes

Table: user_notification		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)

The 'user_type' table (Table.19) keeps the information of users' type. The 'id' field is the primary key of 'user_type' table and it shows records number. The 'name' field stores the name of user type.

Table 19: "user_type" Table with Its Attributes

Table: user_type		
	Field Name	**Data Type**
Primary key	id	int(11)
	name	varchar(255)

The 'logs' table (table.20) keeps information about the news feed of the entire system. The 'id' field is the primary key of the table and it shows record number. The 'name' field stores the name of user type. The 'description' field store the news feed. The 'logdate' field keeps the creation data of the news feed. The 'department_id' field of the 'logs' table is the foreign key for the 'department_id' of the used and the relation between these tables is many-to-one. The 'owner_id'field of the 'logs' table is the foreign key for the 'id" of 'user' table. The relation between these tables is many-to-one.

Table 20: 'logs' Table with Its Attributes

Table: logs		
	Field Name	**Data Type**
Primary key	id	int(11)
Foreign key	departmant_id	int(11)
Foreign key	owner_id	int(11)
	description	longtext
	logdate	datetime

The information regarding the deadline for each review is kept in 'referee_time_period' table (table.21). The 'id' field is the primary key of the table and it shows record number. The 'days' field stores the number of days the administrator set for evaluating activities by the reviewers.

Table 21:"referee_time_period" Table With Its Attributes

Table: referee_time_period		
	Field Name	**Data Type**
Primary key	id	int(11)
	days	int(11)
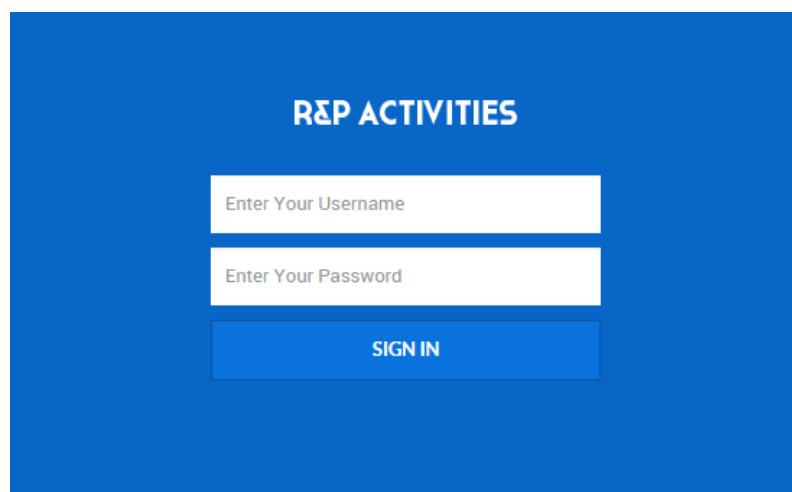
Chapter 3

IMPLEMENTATION

In this chapter, the implementation of the system will be discussed. The system is developed based on five main modules which are "Administrator", "Rector", "Dean", "Chairman" and "Instructor". All modules designed to work together. These modules will be discussed in this chapter. Furthermore, essential tools will be explained.

3.1 Modules

The home page of the system is initially seen by the user to enter the website. The home page contains "login section" as shown in the figure 3.1 which is explained below. When the user successfully login to the system, the user will be redirected to his/her corresponding module. (i.e., administrator, rector, dean, chairman, and instructor). Each of these modules will be explained in the following sections.

Figure 3.1: Homepage of the system

3.1.1 Administrator Module Panel

The administrator is responsible of the user management (i.e. create new users, edit users information, delete users, and search for users), faculty and aepartment Management (i.e. add new faculty/department, and list faculties, or department), activity management (i.e. assigning reviewer(s) manually, list pending activities, advanced activity search), activity statistics (i.e. generate activity statistics), load distribution for reviewers (i.e. reviewers distribution list), period setting (i.e. sets and updates review deadlines), and profile management (i.e. edit profile information). Once the administrator login to the system, the management panel will be displayed as shown in figure 3.2. The management panel consists of:

Main navigation menu on the left side.

Header shortcut menu on top.

News feed area.
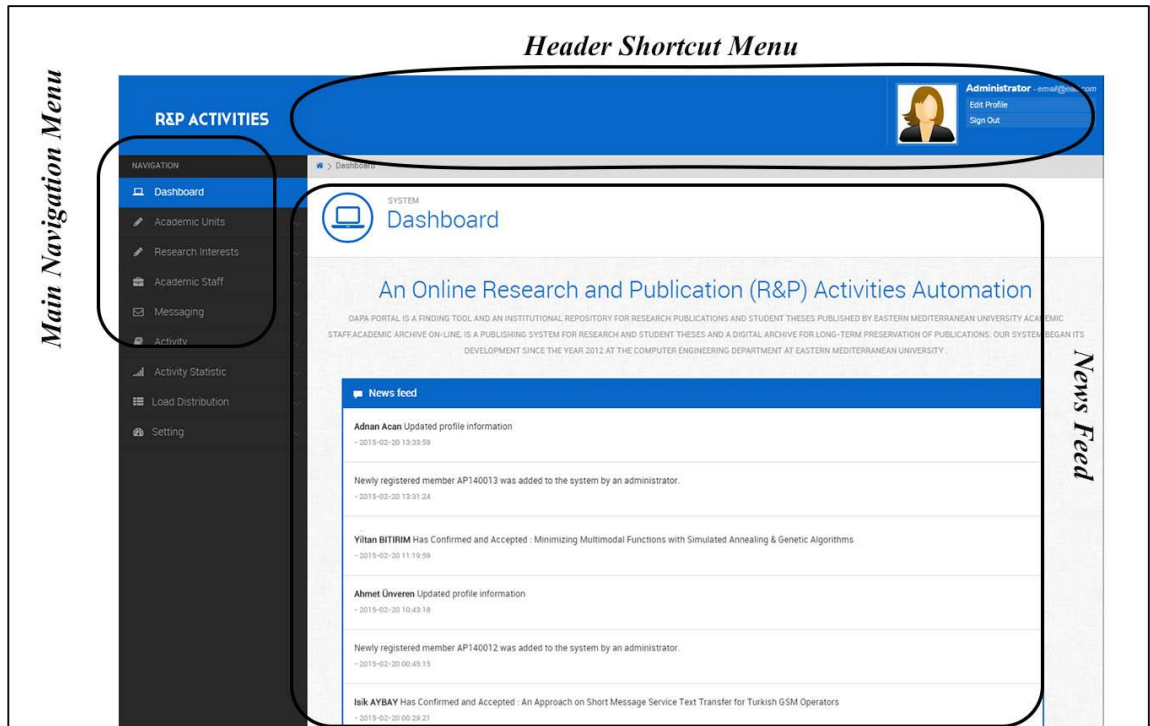
Figure 3.2: Administrator Management Panel

News feed area is a list of updates on the home page that allow the administrator to see what the users have been doing the system as shown in figure 3.3

Figure 3.3: News Feed

The administrator and other modules can edit their profile information. To do this, the administrator clicks on the "Edit Profile" on the top of website as shown in figure 3.4. Then, the form on the figure 3.5 is displayed. The administrator can make changes in his/her personal information by editing one or more of the following fields (i.e., 'Profile Photo', 'cv', 'Password', 'First Name', 'Middle Name', 'Last Name', 'Birthdate', 'Nationality', 'E-mail', 'Mobile', 'Office Phone Number', 'Office Location', 'Address', 'About', 'Education', 'Experience', 'Membership', and 'Administrative Duties'). Once the administrator edits the fields then clicks on "Update" button to finish the process. Some of the fields are required to fill and if the administrator leaves it empty, an alert message will be display with the message "This field is required." To logout of the system the administrator clicks on the "Sign Out" at the top as shown in figure 3.4.
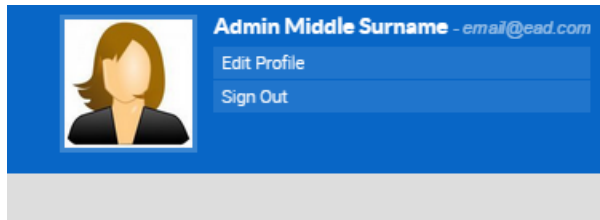
Figure 3.4: Right Shortcut Menu

Figure 3.5: Administrator Profile Management

Figure 3.6 shows the main navigation menu of administrator module. The administrator navigation menu items consist of "Dashboard", "Academic", "Academic Staff", "Messaging", "Activity", "Activity Statistic", "Load Distribution", and "Setting" which will be explain in the following sections.
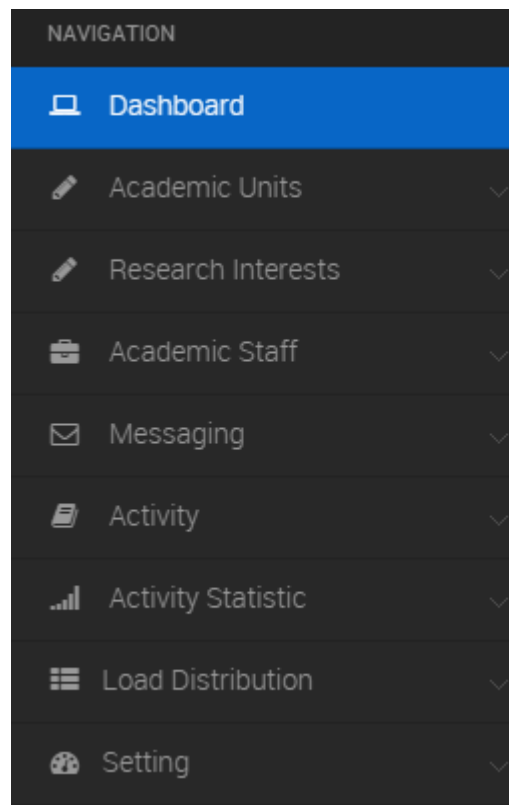
Figure 3.6: Administrator Main Navigation Menu

3.1.1.1 "Dashboard" Menu Item

The first navigation menu item of all modules is the "Dashboard" as shown in figure 3.6, which is redirects the administrator and other modules to the homepage of the panel as shown in figure 3.2.

3.1.1.2 "Academic Units" Menu Item

'Academic Units' is the second item of navigation menu. The administrator can create new faculty/department, list faculties/departments as shown in figure 3.7. This item contains "Add New Faculty", "List Faculties", "Add New Department", and "List Faculty Departments" which will be explained in the following sections.
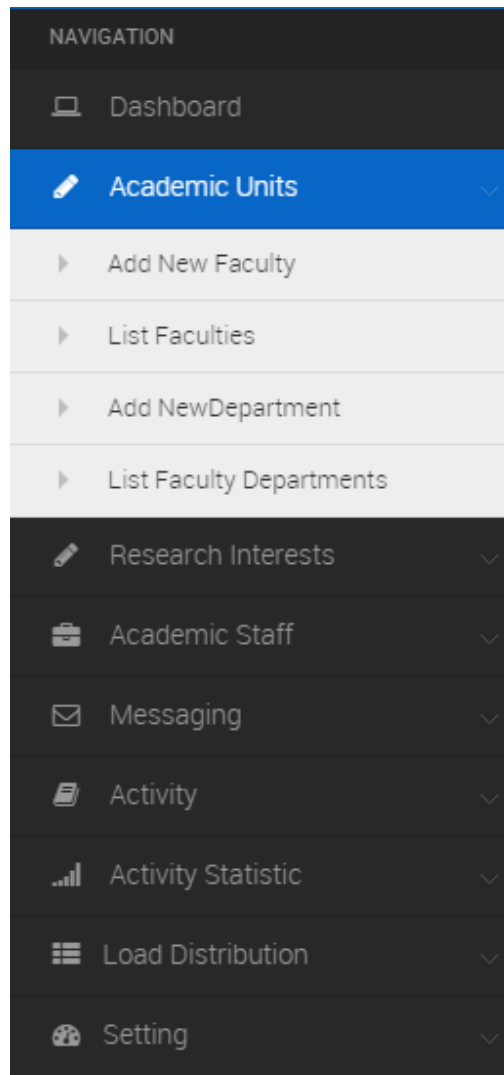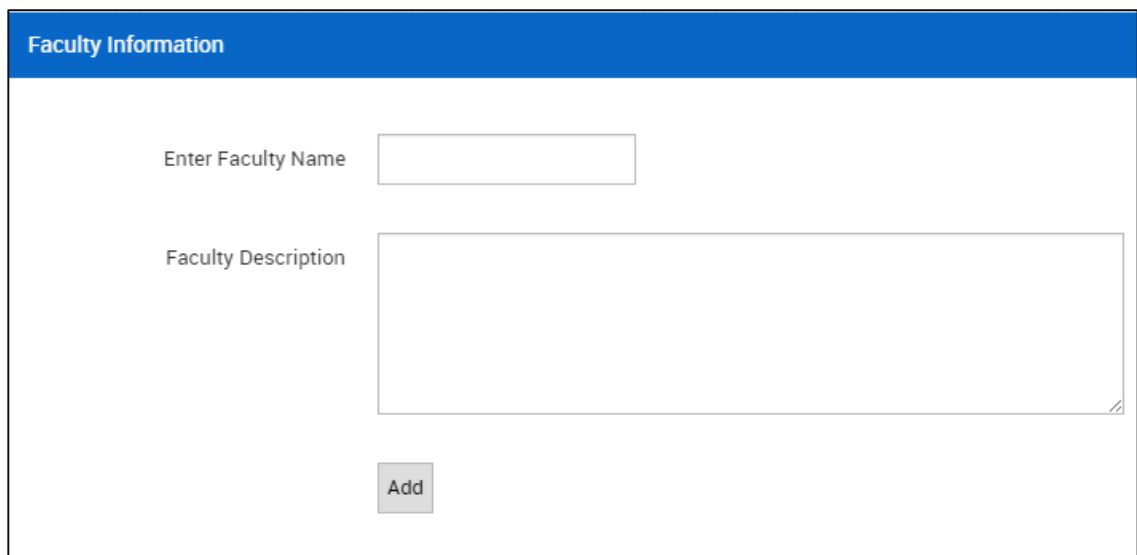
Figure 3.7: 'Academic Units' Menu Item

3.1.1.2.1 "Add New Faculty" Submenu Item

The first submenu of "Academic Units" item is "Add New Faculty". The administrator can add new faculty to the system. To do this, the administrator clicks on the "Add New Faculty" submenu item as shown in figure 3.7. Then, the new faculty form in figure 3.8 is display. The administrator enters 'Faculty name, and 'Faculty description' and clicks "Add" button. Faculty name is a required field, if the administrator do not enter the faculty name field, an alert message will be displayed with the message "This field is required"; otherwise, a new faculty is created.

Figure 3.8: New Faculty Form

3.1.1.2.2 "Faculties List" Submenu Item

The second submenu of the "Academic Units" item is "List Faculties". The administrator can list all faculties in the system. To do this, the administrator clicks on to "List Faculties" submenu item as shown in figure 3.7. Then, a list of available faculties is displayed like figure 3.9. The administrator can delete faculty from the list. To do this, the administrator clicks on the delete icon (🗑), then the alert message is displayed with the message "Are you sure to delete the faculty". If the administrator

clicks "Yes" the selected faculty will be deleted; otherwise, the delete operation will be cancelled.

Figure 3.9: Faculty List

3.1.1.2.3 "Add New Department" Submenu Item

The third submenu of "Academic Units" item is "Add New Department". The administrator is able to add new department to the system. To do this, the administrator clicks on the "Add New Department" submenu item as shown in figure 3.7. Then, the new department form in figure 3.10 is displayed. The administrator selects a 'Faculty for Department', and enters 'Department name' and clicks on 'Add' button. If the administrator does not select a faculty for the new department and/or do not enter the department name, then the alert message "This field is required." is shown for each; Otherwise, a new department is created.

Figure 3.10: New Department Form

3.1.1.2.4 "Departments List" Submenu Item

The fourth submenu of the "Academic" item is "Departments List". The administrator can list all the departments in the system. To do this, the administrator clicks on the "Departments List" submenu item in figure 3.7. Then, a list of available departments is displayed like figure 3.11 is displayed. The administrator can delete a department from the list. To do this, the administrator clicks on the delete icon (🗑), then an alert message is displayed with message "Are you sure to delete the department" if the administrator clicks "Yes" the selected department will be deleted, otherwise, the delete operation will be cancelled. It should be noted that when a department is deleted, all associated with the department will be suspended waiting to be re-assigned to the departments by the administrator. However, their activities will be kept visible in the system.

NAME OF DEPARTMENT	FACULTY OF THE DEPARTMENT	ACTION(S)
Architecture	Faculty of Architecture	🗑
Arts, Humanities and Social Science	Faculty of Art and Sciences	🗑
Banking and Finance	Faculty of Business Economics	🗑
Biological Sciences	Faculty of Art and Sciences	🗑
Business Administration	Faculty of Business Economics	🗑
Chemistry	Faculty of Art and Sciences	🗑

Figure 3.11: Departments List

3.1.1.3 "Research Interests" Menu Item

'Research Interests' is the third item of navigation menu. The administrator can create new research interests, list all research interests as shown in figure 3.12. This item contains "Add New Research Interest", and "List Research Interests" which will be explained in the following sections.
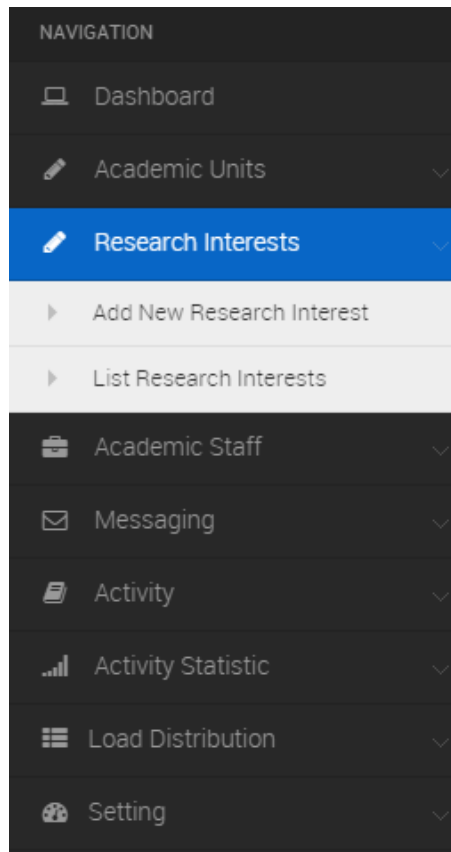
Figure 3.12: 'Research Interests' Menu Item

3.1.1.3.1 "Add New Research Interest" Submenu Item

The fifth submenu of "Academic" item is "Add New Research Interest". The administrator can add research interests to the system. To do this, the administrator clicks on "Add New Research Interest" submenu item in figure 3.12. Then, the new research interest form in figure 3.13 is displayed. The administrator enters 'Research Interest Name' and clicks on 'Add' button. Research interest name field is required, if the administrator do not enter the research interest name field, then the alert message will be displayed with the message "This field is required". Otherwise, a new research interest is created.

Figure 3.13: New Research Interest Form

3.1.1.3.2 "Research Interest List" Submenu Item

The sixth submenu of the "Academic" item is "Research Interests List". The administrator can list all research interests in the system. To do this, the administrator clicks on to "Departments List" submenu item in figure 3.12. Then, a list of available research interests is displayed like figure 3.14. The administrator can delete a research interest from the list by clicking on the delete icon (🗑) in order to remove the research interest from the system.

Figure 3.14: Research Interest List

3.1.1.4 "Academic Staff" Menu Item

The third navigation menu item is "Academic Staff" as shown in the figure 3.15. The administrator can "Add New Member", "Edit Members", and "Search for Members". These submenus will be explained in the sections below.
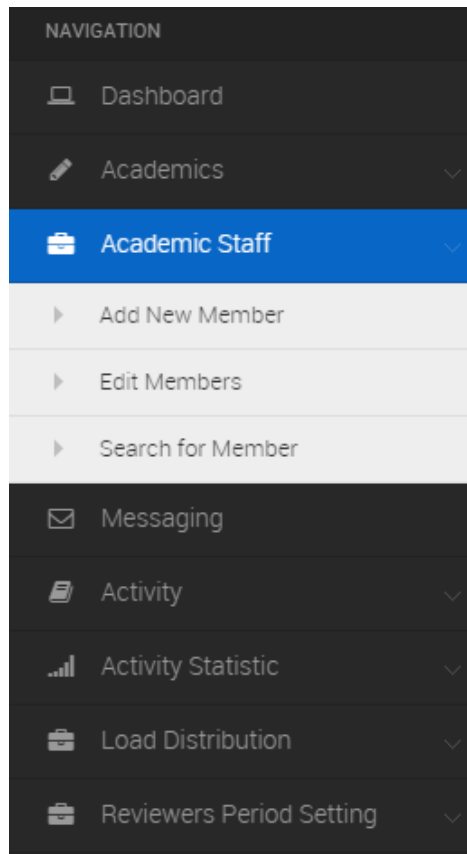
Figure 3.15: 'Academics Staff' Menu Item

3.1.1.4.1 "Add New Member" Submenu Item

The administrator is able to create a new member (i.e. Rector, Dean, Chairman, or Instructor). To do this, the administrator clicks on the "Add New Member" submenu item in figure 3.15. Then, the new member form is displayed as shown in figure 3.16. The administrator enters 'Academic ID', 'E-mail', 'Academic Title', 'Member Type', 'Department', 'Research Interests', 'Permission To Be Reviewer', and 'Gender'. While the administrator typing the 'Academic ID' or 'E-mail' when the mouse leaves the component, the system automatically checks the database for data duplication. If the data is already stored in database, then the alert message will be displayed as shown in the figure 3.17. All of the fields are required, if the administrator leave one of the fields empty, then the alert message is displayed as "This field is required". After

filling the fields, the administrator clicks on "Add" button to create the user and the

message will be appeared to the administrator as shown in the figure 3.18.

Figure 3.16: New Member Form

Figure 3.17: Duplication Message
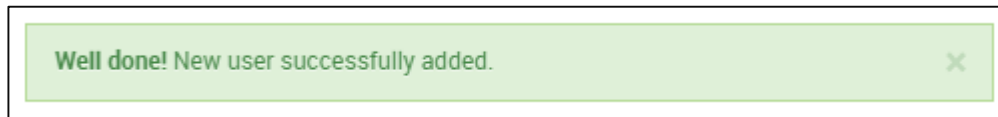
Figure 3.18: New User Creation Message

3.1.1.4.2 "Edit Members" Submenu Item

The second submenu of the "Academic Staff" item is "Edit Members". The administrator is able to edit and delete users from the system. To edit user's information, the administrator clicks on "Edit Members" submenu item in figure 3.15. Then, the members' page in figure 3.19 is displayed. By clicking on the edit icon ( ) the administrator can edit user information, then the form in figure 3.20 is displayed. The administrator can make changes in member's information by editing all the fields. Once the administrator edits all the fields then clicks on "Update Information" button to finish the process. The administrator can delete member from the system by clicking on delete icon (🗑) in figure 3.19 and the user will be deleted from the system

Figure 3.19: Academic Members List

Figure 3.20: Editing Member Information

3.1.1.4.3 "Search for Members" Submenu Item

The third submenu of the "Academic Staff" item is "Search for Members". The administrator is able to search for members in the system. To do this, the administrator clicks on "Search for Members" submenu item in figure 3.15. Then, the search form in figure 3.21 is displayed. The administrator enters user data (i.e. name, middle name, surname, or E-mail) and select search field from the menu in order to search for members and clicks on "Search" button. If the member information found in the system the figure on 3.22 will be displayed. Otherwise, an alert message will be displayed as shown in figure 3.23 that the member information was not found.

Figure 3.21: User Search Form

Figure 3.22: Search Results Page

Figure 3.23: Result Not Found

3.1.1.5 "Messaging" Menu Item

The fourth navigation menu item is "Messaging" as shown in the figure 3.24. The administrator and other modules are able to "Compose New Messages", "Inbox Messages", and "List Outbox Messages" which will be explained in the sections below.
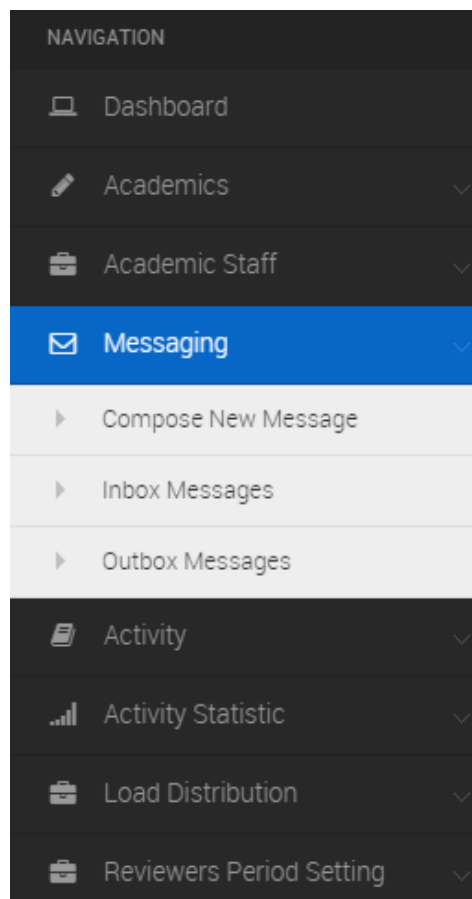
Figure 3.24: 'Messaging' Menu Item

3.1.1.5.1 "Compose New Message" Submenu Item

The first submenu of "Message" item is "Compose New Message". The administrator can send messages to the members. To do this, the administrator clicks on "Compose New Message" submenu item in figure 3.24. Then, the messaging form in figure 3.25 is displayed. The administrator selects a "Recipient", enters 'Title', and 'Message' content field that is needed to be send to the members and clicks on "Send" button.
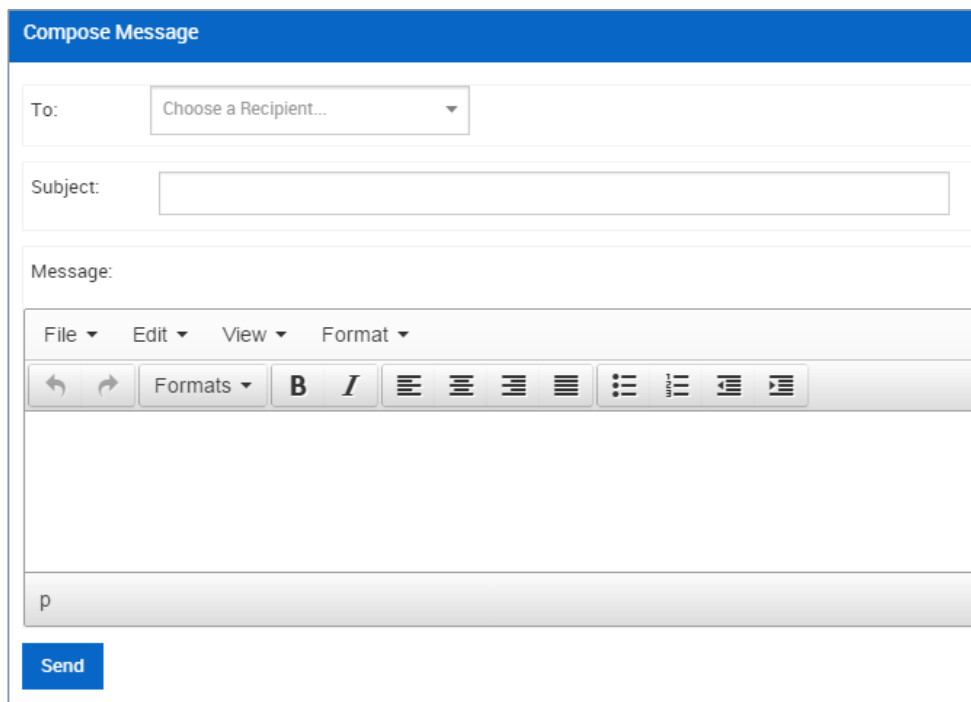
Figure 3.25: Messages Form

3.1.1.5.2 "Inbox" Submenu Item

The second submenu of "Messaging" item is "Inbox". The administrator is able to view all messages received from other members in the system. To do this, the administrator clicks on "Inbox Messages" submenu item as shown in figure 3.24. Then, the inbox window in figure 3.26 is displayed. To view the content of the message, the administrator clicks of "Details" button and the message windows will be displayed as shown in figure 3.27. By clicking on delete icon (🗑) the administrator

can delete messages from the inbox, then the alert message will be displayed with message "Are you sure to delete the message". If the administrator clicks "Yes" the selected message will be deleted, otherwise, the delete operation will be cancelled.

Figure 3.26: Inbox Messages Panel
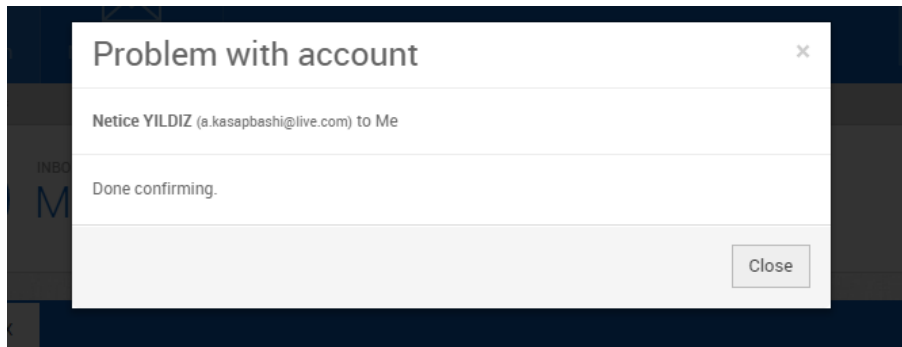
Figure 3.27: Message Content

3.1.1.5.3 "Sent Messages" Submenu Item

The third submenu of "Messaging" item is "Sent Messages". The administrator can view all sent messages in the system. To do this, the administrator clicks on "Sent Messages" submenu item as shown in figure 3.24. Then, the outbox messages window in figure 3.28 is displayed. The administrator can delete also messages from outbox list by clicking on delete icon (🗑), then the alert message will be displayed with message "Are you sure to delete the Message". If the administrator clicks "Yes" the selected message will be deleted, otherwise, the delete operation will be canceled.

Figure 3.28: Outbox Messages Panel

3.1.1.6 "Activity" Menu Item

The fifth navigation menu item is "Activity" as shown in the figure 3.29. The administrator is allow to "Assigning Reviewer(s)", "Pending List", and "List Outbox Messages" which will be explained in the sections below.
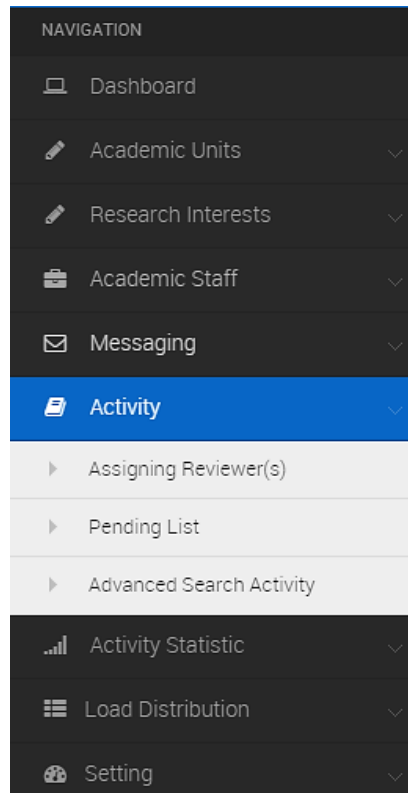
Figure 3.29: "Activity" Menu Item

3.1.1.6.1 "Assigning Reviewer(s)" Submenu Item

The first submenu of the "Activity" is "Assigning Reviewer(s)". The administrator can assign reviewers manually for delayed and skipped activities. To do this, the administrator clicks on the "Assigning Reviewer(s)" submenu item as shown in figure 3.29. Then, the activity list in figure 3.30 is displayed. The administrator assign the reviewer by clicking on the "Select Reviewer" and the assignment form in figure 3.31 is displayed. Then, the administrator selects a reviewer from the list and click "Update" button.

Figure 3.30: Activities in Queue

Figure 3.31: Reviewer Assignment Form

3.1.1.6.2 "Pending List" Submenu Item

The second submenu of "Activity" item is "Pending List". The administrator is able to view pending activities in the system. To do this, the administrator clicks on the "Pending" list submenu item as shown in figure 3.29. Then, the pending widow in figure 3.32 is displayed.

Figure 3.32: Pending Activities List

3.1.1.6.3 "Advanced Activity Search" Submenu Item

The third submenu of "Activity" item is "Advanced Search Activity". The administrator can search for activities in the system. Activity search is divided into two main parts. The main parts are the 'Search by category' and 'Search by fields'. This system with the two main parts makes it possible to combine two (or more) distinct searches into one search result. To do this, the administrator click on "Advanced Search Activity" submenu item as shown in figure 3.29. Then, the search form in figure 3.33 is displayed. The administrator can search either by categories, or by typing search terms in the empty boxes and can restrict to specific field: author, title, conference name etc. The menu at the left determines what happens if the box contains more than one word ("all words" will return activities that contains all words anywhere in the requested field, "any word" will return activities that contains at least one of the words in the requested field, and "none of word" will return activity that does not contains the words appear as a in the requested field". Administrator can also restrict the search by year of activity (all years, or year range), the administrator can use faculty/department drop menu to restrict the search to specific faculty/department, specific research topic, or specific activity status. Then the administrator clicks on "Search" button for search. If activity information found the page in figure 3.34 will be displayed. Otherwise, the message in figure 3.35 will be displayed as the activity information not found.

Figure 3.33: Activity Search Form

13 Item(s) found

Search Result

1: **Channel estimation using short training sequences**
Hassan AMCA,
Faculty of Engineering - Electrical & Electronic Engineering
In, 1.1.4 Conference, (2000-02-02)
`DENIED`
Abstract | Full Text
The estimation of the impulse responses of time-variant mobile radio channels is a challenging issue in mobile communication systems. For CDMA systems, it is generally assumed that the receiver knows the corresponding spreading sequences. A maximum likelihood channel estimation method, which uses the known spreading sequences together with short training sequences, is considered for synchronous CDMA systems.

2: **Book of Eli**
Sener Uysal,
Faculty of Engineering - Electrical & Electronic Engineering
In, 1.1.2 Books, (2014-06-16)
`APPROVED`
Abstract | Full Text
The goal for LTE is to obtain the same performance as wired broadband, to offer flexible spectrum usage for higher efficiency. In order to securely communicate three core integrity and confidentiality algorithms selected by the 3GPP for LTE namely ZUC, SNOW 3G, and AES. In my future work I shall implement these algorithms in mobile environment and analysis of the strength of the algorithms from logical cryptanalysis point of view and also performance test shall be carried out.

3: **A model for predicting image search engine behaviour**
Yiltan BITIRIM, Yiltan BITIRIM,
Faculty of Engineering - Computer Engineering
In, 1.1.5 Citations, (2010-06-25)
`PENDING`
Abstract | Full Text

4: **Parameterized Improved Fast Encryption Algorithm for Multimedia PIFEA-M**
Alexander CHEFRANOV,
Faculty of Engineering - Computer Engineering
In, 1.1.1 Articles, (2008-06-13)
`DENIED`
Abstract | Full Text
Improved fast encryption algorithm for multimedia IFEA-M is modified to withstand recently discovered vulnerability to differential known plaintext-ciphertext attack. The proposed parameterized algorithm PIFEA-M has the same performance as FEA-M that is about 25% better than that of IFEA-M.

| First | Previous | 1 | 2 | 3 | 4 | Next | Last |

Figure 3.34: Search Result Page

Search Results

0 Item(s) found

Search Result

| All (0) | Journal Articles (0) | Book (0) | Conference (0) | Patent (0) | Citation (0) | |

No Record Found

Figure 3.35: Activity Not Found Message

3.1.1.7 "Activity Statistic" Menu Item

The sixth navigation menu item is "Activity Statistic" as shown in the figure 3.36. The administrator is allow view "Statistic" which will be explained in the following sections.
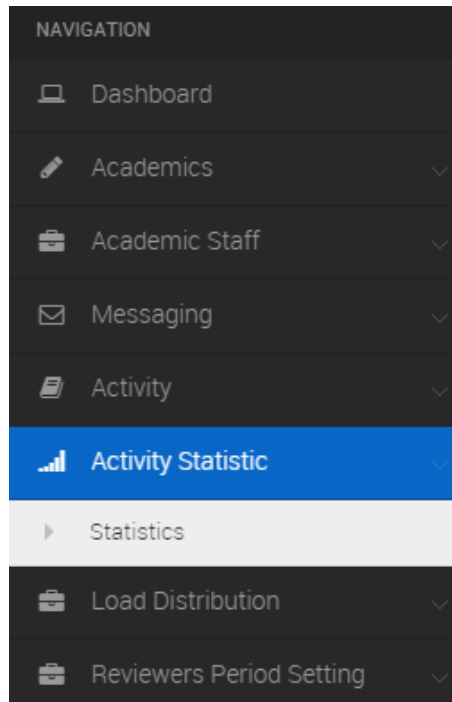

Figure 3.36: "Statistics" Menu Item

3.1.1.7.1 "Statistic" Submenu Item

The administrator has ability to view activities statistic for authors in the system. To do this, the administrator clicks on "Statistic" submenu item as shown in figure 3.36. Then, the statistic page in figure 3.37 is displayed. The administrator view statistic for criteria fields (i.e. area category, category, activity type, date, authors, status, or faculty/department). Then, the administrator clicks on generate ( ) ▤ button for displaying the statistic as shown in figure will 3.38. The statistics can be exported to "Microsoft Excel" by clicking on the export button in the upper right corner of the statistics page.
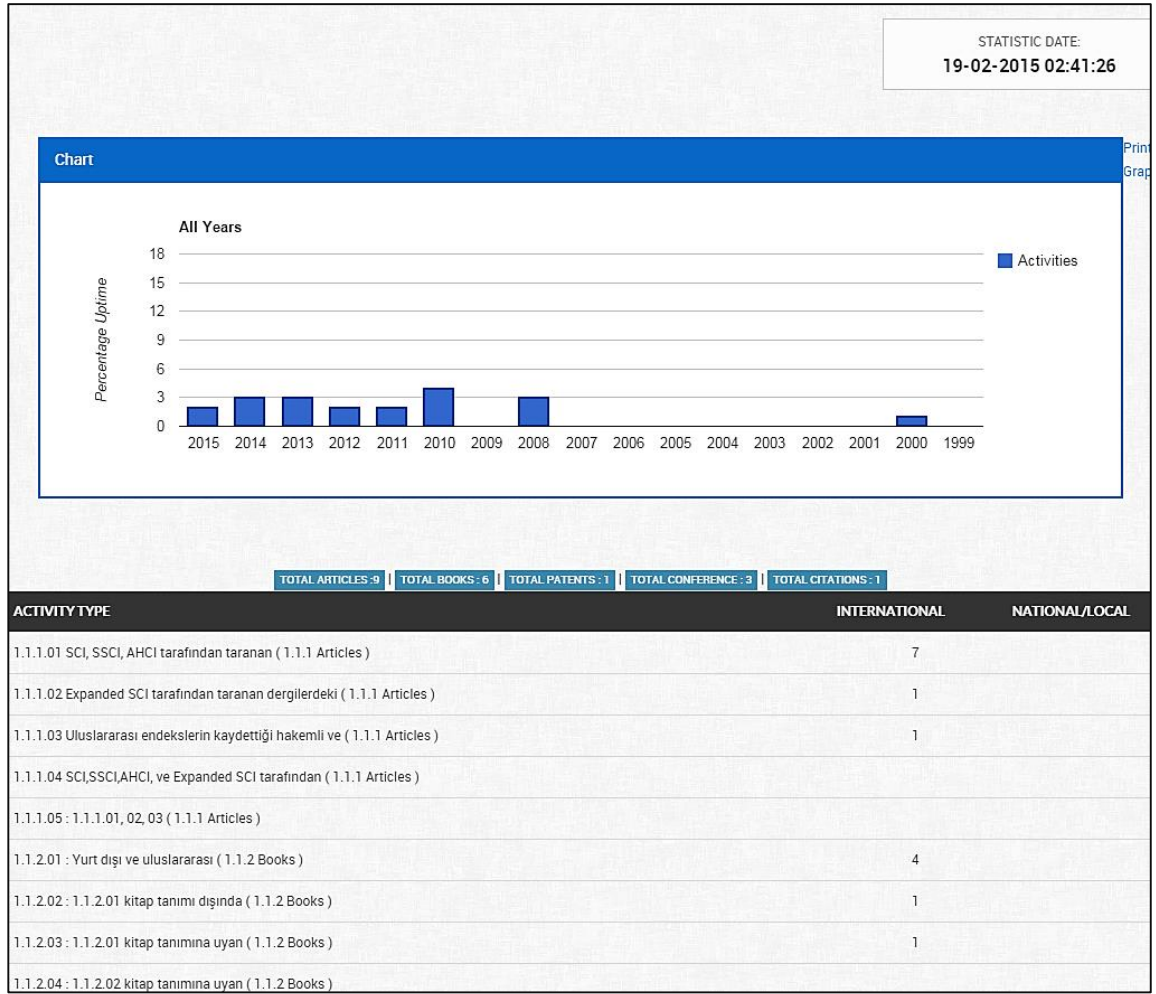
Figure 3.37: Statistics Form

Figure 3.38: Statistics Results

3.1.1.8 "Load Distribution" Menu Item

The seventh navigation menu item is "Load Distribution" as shown in the figure 3.39.

The administrator is allow view "Load Distribution List" which will be explained in
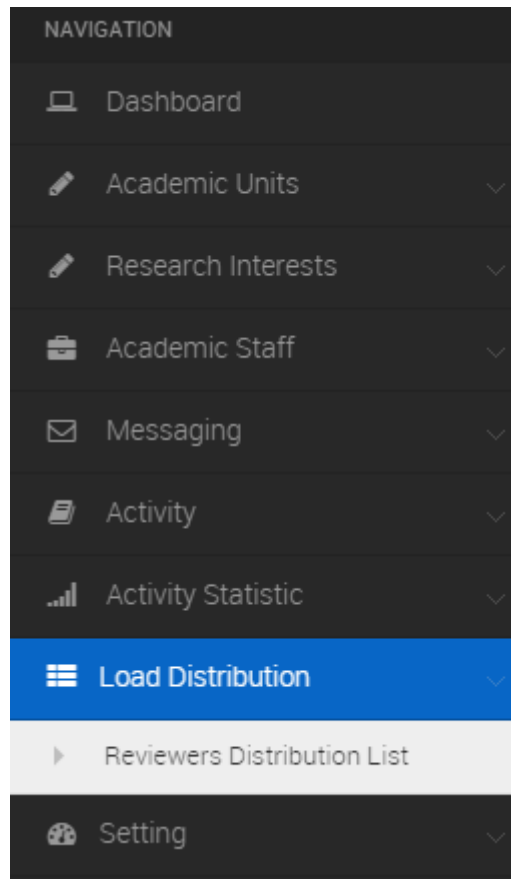
the following section.

Figure 3.39: "Load Distribution" Menu Item

The administrator is able to monitor load distribution for the reviewers in the system. To do this, the administrator clicks on "Load Distribution List" submenu item as shown in figure 3.39. Then, a list of available reviewers like in figure 3.40 is displayed. The administrator can view information of the reviewer (i.e. reviewer name, number of activities reviewed, and activity title)

All Reviewers		
REVIEWER(S)	NUMBER OF ACTIVITY REVIEWED	ACTIVITY TITLE
Alexander CHEFRANOV	1	1: title of book
Yiltan BITIRIM	4	1: An Illuminated Mathnawi al-Ma'nawi of Jalaladdin al-Rumi Kept in the National Archive of the Turkish Republic of Northern Cyprus 2: observation of midlatitude 3: Minimizing Multimodal Functions with Simulated Annealing & Genetic Algorithms 4: Fitness Proportional Hypermutations within Memory-Based Colonization in Particle Swarm Optimization
Sebnem Onal Hoskara	2	1: Mobile phone use in teenagers 2: İngiliz Basını ve Arşiv Belgeleri Işığında Kırım Savaşı ile İlgili Bazı Sosyal Etkinlikler
Isik AYBAY	3	1: An Evaluation of Turkish Retrieval Performance of Popular Search Engines for Internet and Image Search by Using Common Lists 2: Parameterized Improved Fast Encryption Algorithm for Multimedia PIFEA-M 3: An Approach on Short Message Service Text Transfer for Turkish GSM Operators

Figure 3.40: Load Distribution List

3.1.1.9 "Setting" Menu Item

The eight navigation menu item is "Setting" as shown in the figure 3.41. The administrator is allow to "Set Review Period". The review period setting is a period based on a number of days which will be explained in the following section.
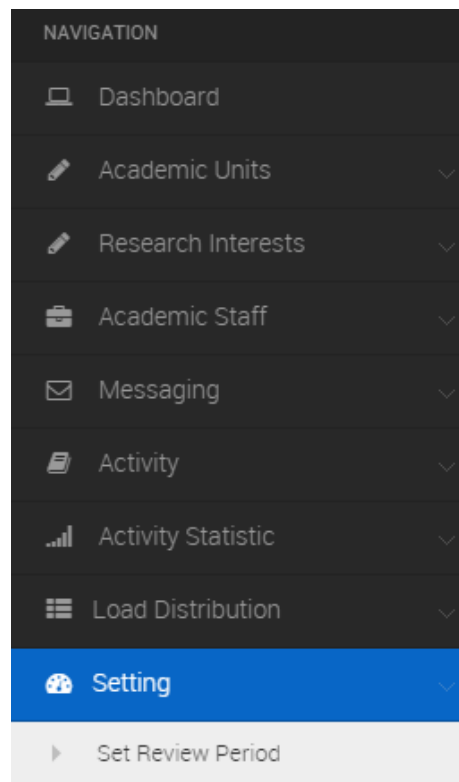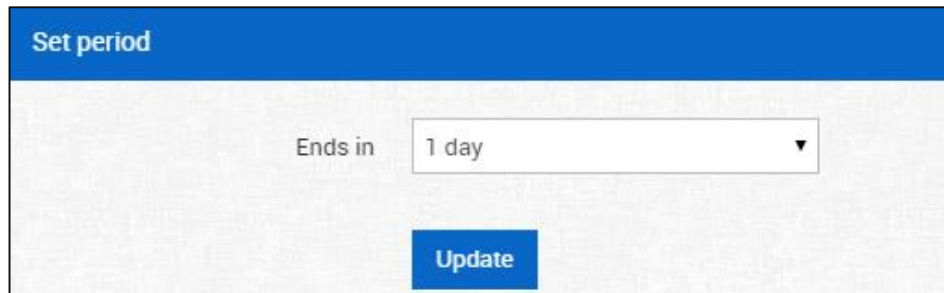

Figure 3.41: "Setting" Menu Item

The administrator can set a review period deadlines for evaluating the activities based on number of days. To do this, the administrator clicks on the "Set review period" submenu item as shown in figure 3.41. Then, the setting window in figure 3.42 is displayed. The administrator select number of days from the list and then click on "Update" button to update the period.

Figure 3.42: Review Period

3.1.2 Rector Module Panel

Rector module is responsible of monitoring all the users' activity in the system. Once the rector login to the system, the rector panel will be displayed as shown in figure 3.43.
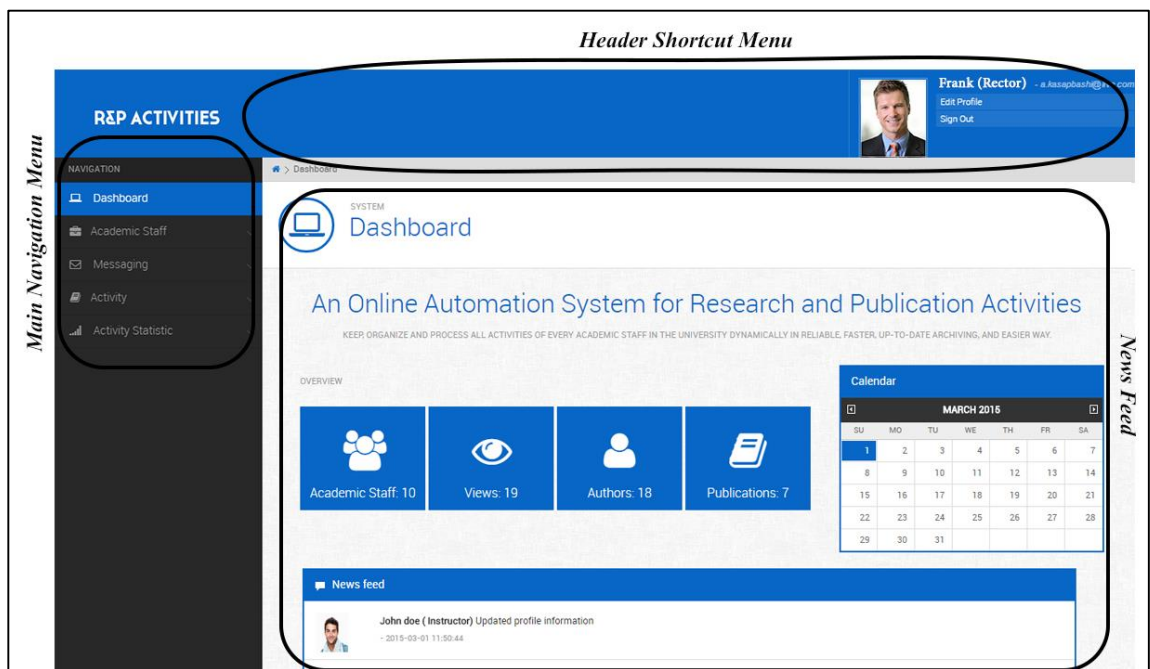

Figure 3.43: Rector Management Panel

As explained previously in administrator profile management section, the rector can also edit his/her own profile information.

Figure 3.44 shows the rector's main navigation menu. It consists of "Dashboard", "Academic Staff", "Messaging", "Activity", and "Activity Statistic" items which will be explain in the following sections.
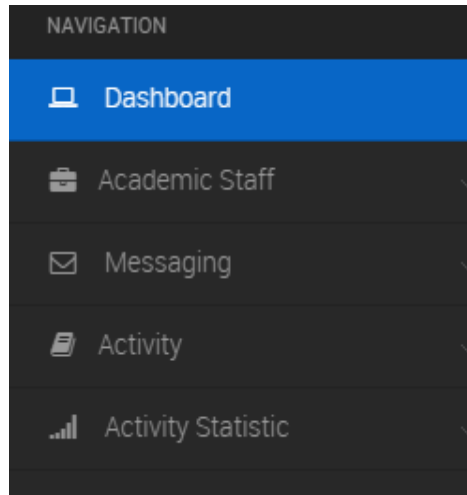
Figure 3.44: Rector Main Navigation Menu

3.1.2.1 "Academic Staff" Menu Item

The second navigation menu item is "Academic Staff" as shown in the figure 3.45.

The academics staff contains of "Search, List Members" which will be explained in
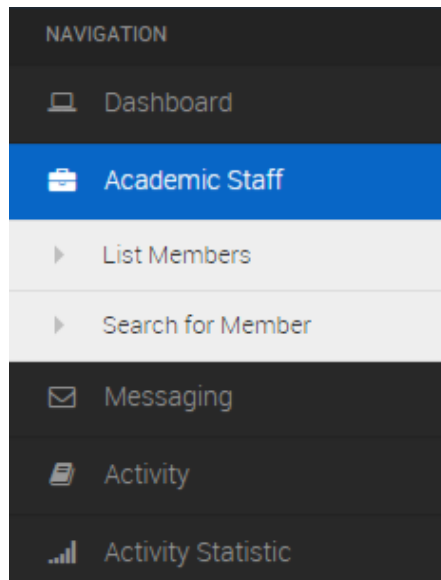
the section below.

Figure 3.45: "Academics Staff" Menu Item

The first submenu of the "Academic Staff" item is "List Members". The rector is able to list all members in the system. To do this, the rector clicks on "List Members" submenu item in figure 3.45. Then, the members' list page in figure 3.46 is displayed.The rector is able to list all available member the system.

TITLE	FULL NAME	POSITION	DEPARTMENT	E-MAIL
Assoc. Prof. Dr	Alexander CHEFRANOV	Instructor	Computer Engineering	a.kasapbashi@live.com
Asst. Prof. Dr	Ozgur Dincyurek	Instructor	Architecture	a.kasapbashi@live.com
Asst. Prof. Dr	Yiltan BITIRIM	Instructor	Computer Engineering	a.kasapbashi@live.com
Prof. Dr	Sener Uysal	Instructor	Electrical & Electronic Engineering	a.kasapbashi@live.com
Prof. Dr	Aykut HOCANIN	Chair	Electrical & Electronic Engineering	a.kasapbashi@live.com
Prof. Dr	Sebnem Onal Hoskara	Dean	Architecture	a.kasapbashi@live.com
Prof. Dr	Isik AYBAY	Chair	Computer Engineering	a.kasapbashi@live.com
Prof. Dr	Hassan AMCA	Dean	Electrical & Electronic Engineering	a.kasapbashi@live.com
Showing 1 to 10 of 10 entries				

Figure 3.46: Member List Page

3.1.2.1.1 "Search for Members" Submenu Item

The second submenu of the "Academic Staff" item is "Search for Members". Same as the administrator module, the rector can search for members in the system.

3.1.2.2 "Messaging" Menu Item

As explained previously in administrator independent messaging management section, the rector can manage messages same as the administrator do.

3.1.2.3 "Activity" Menu Item

The fourth navigation menu item is "Activity" as shown in the figure 3.47. The activity item contains "Add Activity", "My Activity", "Members' Activities", "Review List", and "Advanced Activity Search" which will be explained in the sections below.
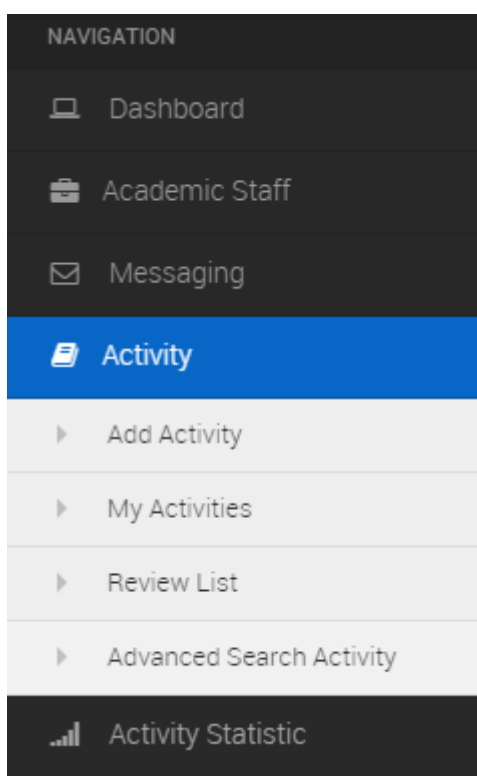
Figure 3.47: "Activity" Menu Item

3.1.2.3.1 "Add Activity" Submenu Item

The rector is able to add new activity for him/herself. To do this, the rector clicks on "Add Activity" submenu item in figure 3.47. Then, the new activity form is displayed as shown in figure 3.48. The rector enters 'Area Category', 'Main Category', 'Category', 'Type', 'Type of Activity Type', 'Author/Editor/Inventor/Organize/Participant name', 'Activity Information', 'Activity Areas', 'Excluding Reviewers', and 'Upload Activity File'. While the administrator typing the 'Academic Title' when the mouse leaves the component, the system automatically checks the database for data duplication. If the data is already stored in database, then the warning message will be displayed as shown in the figure 3.49. All of the fields are required, if the rector leaves one of the fields empty, then the alert message is displayed as "This field is required". After filling the fields, the rector clicks

on "Submit" button to add the activity and the message will be appeared to the rector as shown in the figure 3.50.
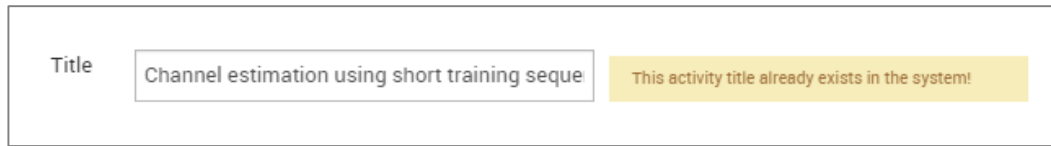

Figure 3.48: New Activity Form
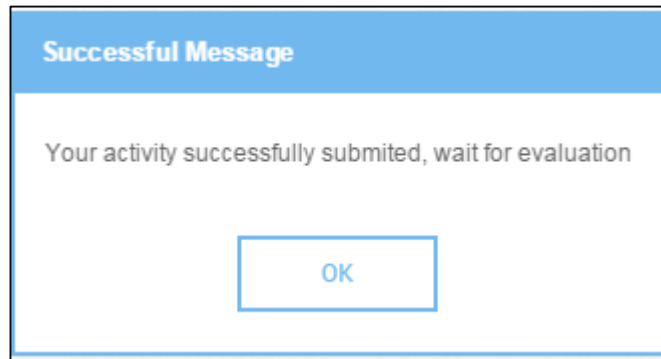
Figure 3.49: Duplicate Title Message

Figure 3.50: Success Message

3.1.2.3.2 "My Activity" Submenu Item

The second submenu of "Activity" item is "My Activity". The rector is able to list all his/her personal activities in the system. To do this, the rector clicks "My Activity" submenu item as shown in figure 3.47. Then, the activity list window in figure 3.51 is displayed. In order to view the activity details, the rector should click on "Title" then the activity page is displayed like in figure 3.52.

Figure 3.51: Personal Activities List

Figure 3.52: Activity Details

3.1.2.3.3 "Review List" Submenu Item

The third submenu of "Activity" item is "Review List". The rector is able to evaluate

activities of other members in the system. To do this, the rector clicks "Review List"

submenu item as shown in figure 3.47. Then, the review list widow in figure 3.53 is

displayed.

Figure 3.53: Review List Page

3.1.2.3.4 "Advanced Activity Search" Submenu Item

The fourth submenu of "Activity" item is "Advanced Search Activity". The rector can search for activities in the system either by 'Search by category' or 'Search by fields'. To do this, the rector click on "Advanced Search Activity" submenu item as shown in figure 3.47. Then, the search form in figure 3.54 is displayed. The rector can search either by categories, or by typing search terms in the empty boxes and can restrict to specific field: author, title, conference name etc. The menu at the left determines what happens if the box contains more than one word ("all words" will return activities that contains all words anywhere in the requested field, "any word" will return activities that contains at least one of the words in the requested field, and "none of word" will return activity that does not contains the words appear as a in the requested field". Rector can also restrict the search by year of activity (all years, or year range), the rector can use faculty/department drop menu to restrict the search to specific faculty/department, specific research topic, or specific activity status. Then the rector clicks on "Search" button for search. If activity information found the page in figure 3.55 will be displayed. Otherwise, the message in figure 3.56 will be displayed as the activity information not found.

Figure 3.54: Activity Search Form

Figure 3.55: Search Result Page

Figure 3.56: Activity Not Found Message

3.1.2.4 "Activity Statistics" Menu Item

The sixth navigation menu item is "Activity Statistic" as shown in the figure 3.57. The rector is able to obtain "Statistic" which will be explained in the following sections.

Figure 3.57: "Activity Statistics" Menu Item

3.1.2.4.1 "Statistics" Submenu Item

The rector has ability to view activities statistic for authors in the system. To do this, the rector clicks on "Statistic" submenu item as shown in figure 3.57. Then, the statistic page in figure 3.58 is displayed. The rector view statistic for criteria fields (i.e. area category, category, activity type, date, authors, status, or faculty/department). Then, the rector clicks on "Generate" button for displaying the statistic as shown in figure will 3.59. The statistics can be exported and print by clicking on the export button in the upper right corner of the statistics page.

Figure 3.58: Statistics Form
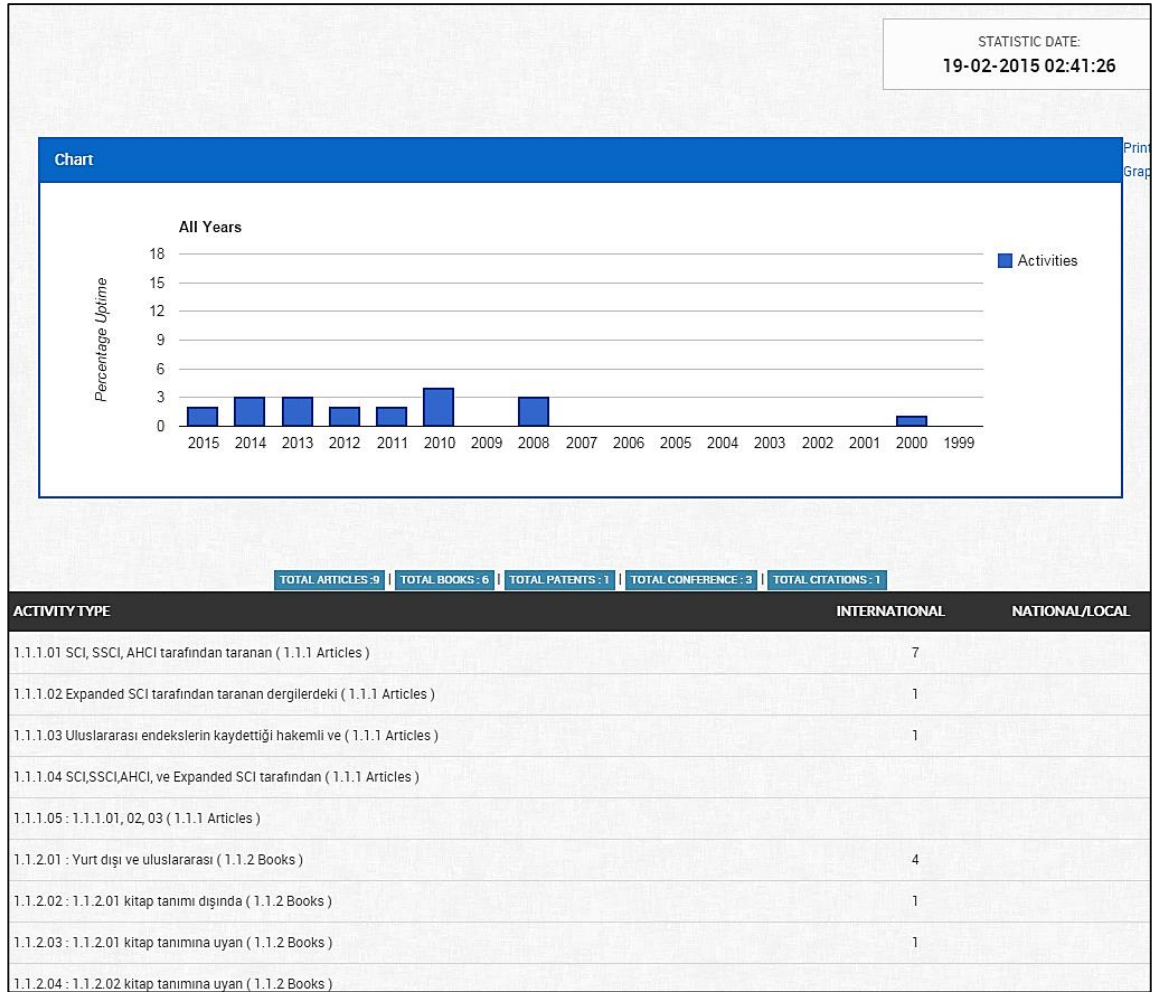
Figure 3.59: Statistics Results

3.1.3 Dean Module Panel

The dean's main navigation consists of "Dashboard", "Academic Staff", "Messaging", "Activity", and "Activity Statistic" items. Same as the rector module, the dean can search for, and list users, manage messages, add activities, list personal activities, review activities, search for activities and produce statistics for activities based on department in the faculty, and profile management. Once the dean login to the system, the dean panel will be displayed as shown in figure 3.60.
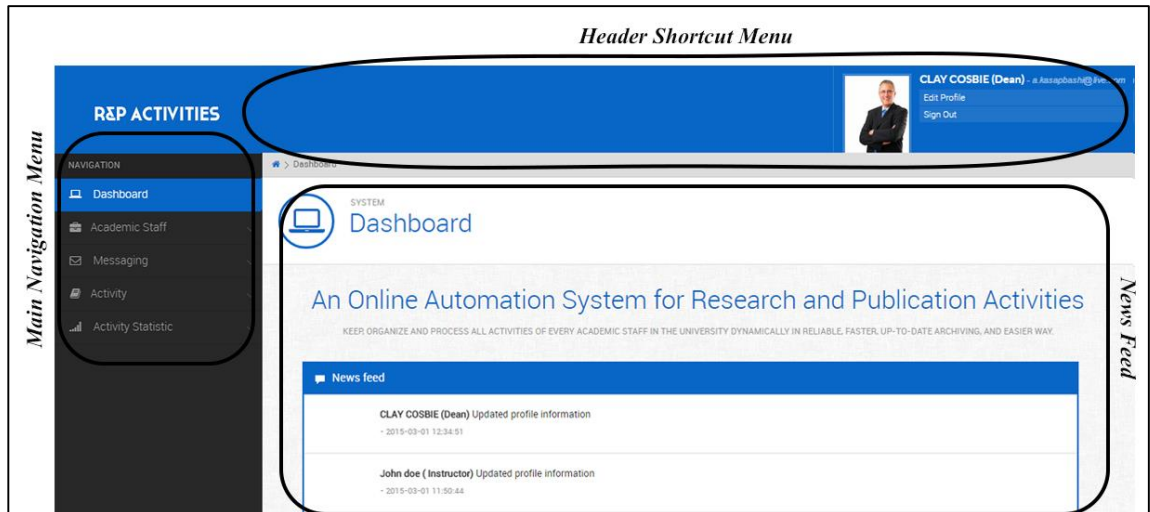
Figure 3.60: Dean Management Panel

3.1.3 Chairman Module Panel

Chairman is responsible for monitoring academic members' activities in the department. The chairman main navigation menu consists of "Dashboard", "Academic Staff", "Messaging", "Activity", and "Activity Statistic" items. As explained previously same as the rector module, the chairman can search for, and list department users, manage messages, add new activities, list personal activities, review activities, search for activities and produce activities of department, and profile management. Once the chairman login to the system, same as the rector panel will be displayed as shown in figure 3.43.

3.1.4 Instructor Module Panel

The instructor can only manage own profile, manage messaging and activity management Hence, the instructor main navigation menu comprises of "Dashboard", "Messaging", and "Activity", items. As explained previously in rector module section, the instructor can add new activities, list personal activities, review activities, compose new message, list messages, and delete messages, and edit profile information. Once

the instructor login to the system, the instructor panel will be displayed as shown in figure 3.61.
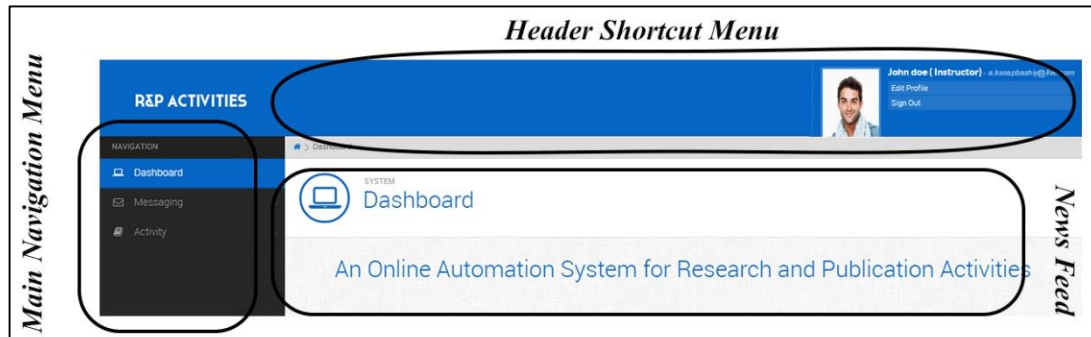
Figure 3.61: Instructor Management Panel

3.2 The System's Automatic Adaption for Handheld-Devices

When the system is used by a handheld device, the system automatically adapts itself for the handheld device as follow:

Based on the resolution of the handheld-device, homepage of the system in that device hides the menu bar as shown in figure 3.62. All the users can access the main navigation menu by clicking on the top left toggle icon ( ) as shown in the figure 3.62. The main navigation menu comprises all the main components of the system. Furthermore, to have a fast and easy access, a shortcut menu for the frequently used items is being existed on the homepage as shown in figure 3.63. Note that the figures of the handheld-device shown below were taken using Safari Web browser on iPad2.
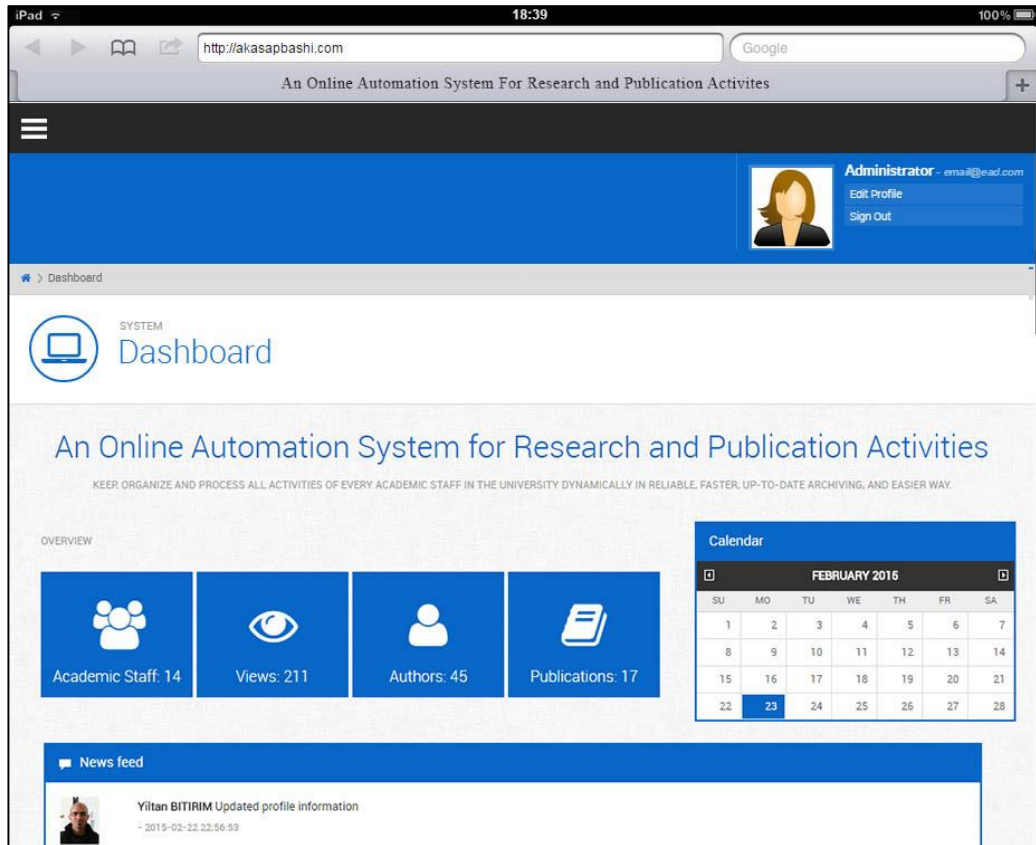
Figure 3.62: Homepage on Handheld device
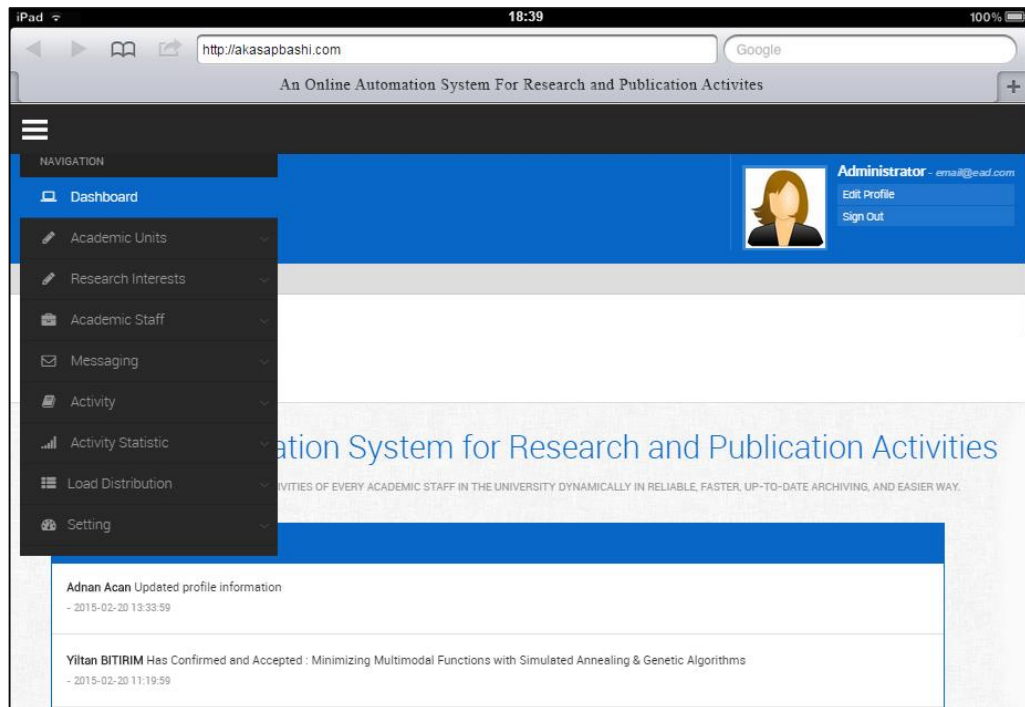
Figure 3.63: Responsive handheld-device toggle menu

Chapter 4

SUMMARY AND COMPARISON

In this chapter, a summary of the features of our system is given. Afther that, comparison with other related works will be discussed.

4.1 Summary

The main features of our system are as follows:

- Real-time Statistics: each authorized user (e.g. administrator, rector, dean, or chair) can easily get detailed real-time statistics about academic staff activities through the system. However, each of the authorized users has access to diverse information based on their privilege in the system.

- Advanced Search: the system has an advanced search to search for activities. (Note that a regular search for users is also included). The user can search according to his/her level of privilege.

- Reporting: the program has feature of producing reports about the academic staff activities. The user can also export these reports into different file formats such as Excel, Word and PDF to be saved or printed out. Therefore, all the necessary documents can be kept as hard and soft copies other than the system's database.

- Reviewer Mechanism: this mechanism is used to have more accurate and more reliable information in the system. In this mechanism, peer review method is used. Firstly, (step 1) the selection of the reviewer takes place by comparing

the author's area of expertise with the other users' in the university; (step 2) if it is not matched, then the system will check the author's department to find suitable reviewers for his/her activity; (step 3) if it is not matched again, then the system will check the author's faculty to find suitable reviewers for his/her activity; (step 4) if it is not matched again, the system will check the university to find suitable reviewers for his/her activity; and (step 5) if there is no match at all, the activity will be handed to the administrator to select the reviewer manually. In steps 1, 2, 3, and 4, when more than one reviewers matched, only one of them will be selected randomly. The features of reviewer mechanism are described as follows:

- ❖ Review period: The administrator has the authority to assign a specific period of time for review process.

- ❖ Freedom of choice: The reviewer has freedom of choice option. For any reason, if s/he wants to not evaluate the activity, s/he has a right to skip it.

- ❖ Balancing the distribution of reviewers: The system tries to assign review duty to the users evenly. Hence, shares of review responsibilities could be balanced in the system.

- ❖ Reviewer inclusion/exclusion: If it's needed, an academic staff can be excluded/included from the reviewers list. There are two types of inclusion/exclusion. First one, the administrator of the system has the right to include/exclude users for reviewing the activities. Second one, an authors can exclude the other user(s) (at most 10) from reviewing his/her activity while submit a new activity. Note that if the author does not exclude a user, the system consider him/her as included.

- Independent messaging system: The users of the university have ability of messaging each other easily through the system. As all the users are already available with their details in the system, they can be searched by their name, middle name, surname, and/or e-mail.

- Assigning academic points: Based on academic assessment criteria of rule and regulation of legislation [1], the system automatically calculates academic points of each academic staff for their all approved activities.

- The administrator of the system can modify the type of each member when their position in the university changes. For example; the administrator can change "Instructor" member type to "Dean". At that time, all the privileges of the "Dean" will be given to the "Instructor".

- Duplication detection: this mechanism is used to prevent the authors from submitting one activity more than once. However, if the activity contains multiple authors, the others also cannot submit the same activity again.

- Deleting existing faculty or department: once the faculty or department is deleted, it cannot be recovered. All academic staff in the faculty/department will be suspended and be invisible in the system. However, their activities will be kept and visible in the system. Later on, the administrator can assign department to them.

- The dynamicity of the system makes it easy to be applicable in other universities and inistitues as well.

- The graphical user interface of the system is designed as user friendly interface. Furthermore, the system is designed to adapt itself to handheld devices automatically with a handheld device friendly graphical user interface.

4.2 Comparison

There are other similar systems like ours. Each has its own features and benefits. Some of these systems are "Publication Management of California University", "Elements (PubLists) of Queen Mary University", and "Enlighten" as described below.

The first system is "Publication Management System of California University" [19]. The home page of the system is shown in figure 4.1.
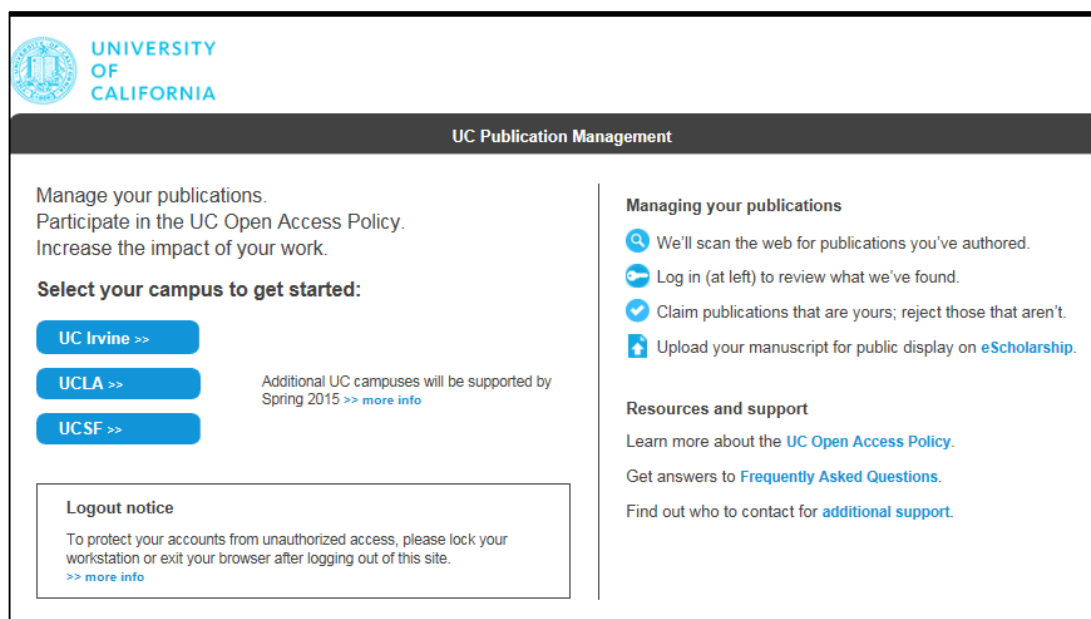
Figure 4.1: Homepage of the UC Publication System

The system automatically searchs multiple different databases to find the pulications of academic staffs. However, there is a need to verify the publication by the author. The publication management system of UC (Univerdity of California) is developed to manage academic staff activities, allow academic staff to participate in the UC (Univerdity of California) Open Access Policy, and increase the impact of their workw. The system has simple graphical interface which makes it simpler and easier to use in order to collect needed information. And it is supported in 3 campuses which

are UC (Univerdity of California) Irvine campus, UC (Univerdity of California) Los Angeles campus, and UC (Univerdity of California) San Francisco campus.

The second one is "Element (PubLists) of Queen Mary University" [20], this system is developed to collect and provide data about scholarly publications of academic staff in Queen Mary University. The hompage is shown in figure 4.2.
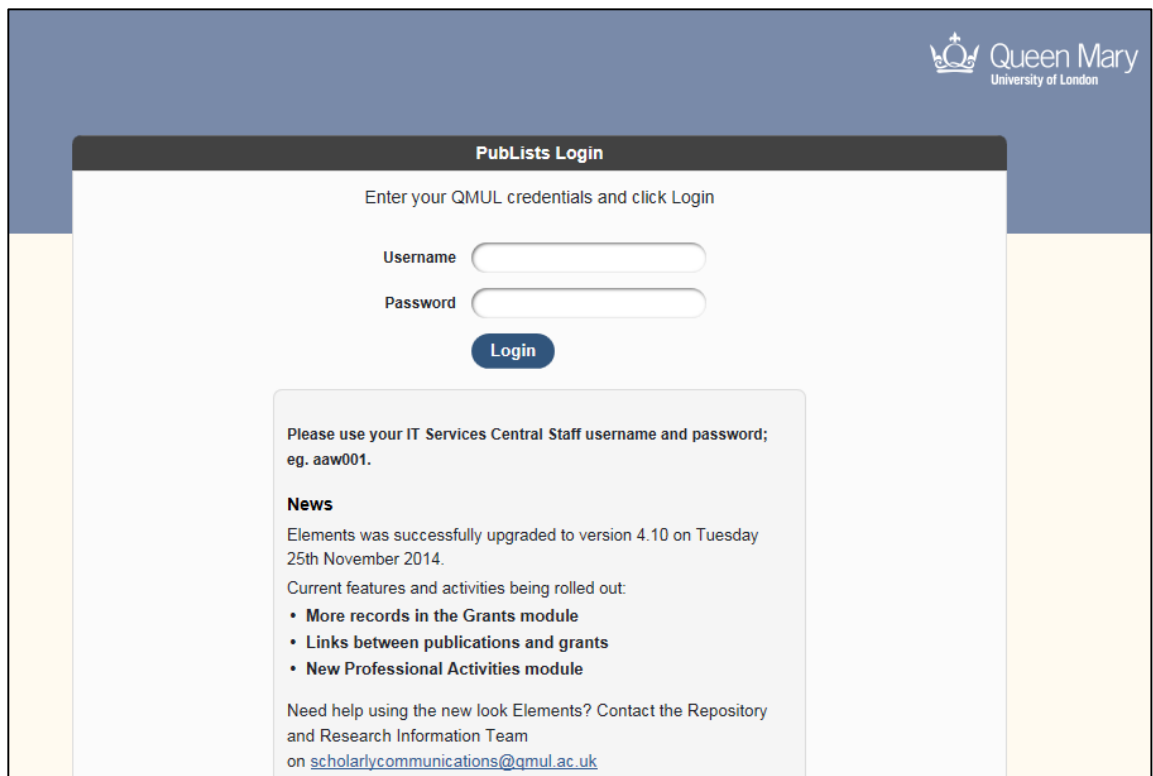
Figure 4.2: "Element" Home Page

"Element (Publists)" system collects all publication data for each academic staff whose working in Queen Mary University. The system searches several external databases for academic staff publication. These are as follow:

- Web of Knowledge

- PubMed

- arXiv

- Google Books

- DLBP Computer Science Bibliography

"Element (Publists)" system has a simple web-based interface which allows the academic staff to approve or decline their publications gathered from the external databases automatically.

The third system is "Enlighten" [21], the system is developed in order to manage publications of academic staffs at University of Glasgow. The hompage is shown in figure 4.3.
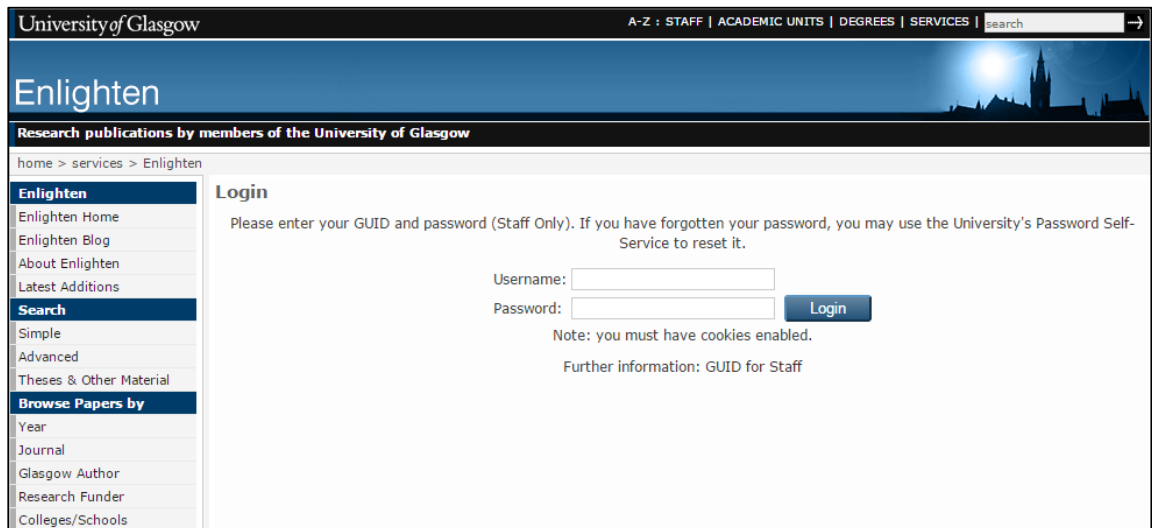
Figure 4.3: "Enlighten" Home Page

Academic staff are asked to enter manually their peer-reviewed publicaion details (journal articles and conference proceedings) to be recorded in Enlighten. If academic staff do not submit their publications, research office staffs at the university carry out searches in the Web of Knowledge database on behalf of academic staff and import the details into Enlighten. The aim of this system is to increase visibility of the research being carried out at University of Glasgow. The system has some features such as; advance search, and statistics.

Note: the systems mentioned above are not publicly available. We needed to register to the system in order to be able to examine them; however we could not since we are not a staff in these universities. Therefore, we described them based on our observation from outside.

Our system convers all the features of the three systems aformation except using external database and covering grant details. The other systems which are using external databases are including publications with or, without author confirmation and, for the publication which are not from the databases, manual entrance can be done bu not a word mentioned about the verification of these publications. In our system, reliability of data has high importance. Not only publications but all type of research and publication activities (given in section 2.1.1) can be entered manually to our system and verified by our reviewer mechanism. Furthermore, some popular external database can also be included into our system and used with our powerful reviewer mechanism with very slight modifications. Grant issue is not included in our system since we only concentrated on research and publication activities based on our academic assessment criteria in rules and regulations legislation [1]. Besides, our system covers many useful features such as automatically academic point assignment, independent messaging system, review mechanism, detailed real-time statistics which are not observed on the other three systems mentioned above.

Chapter 5

CONCLUSION AND FUTURE WORKS

5.1 Conclusion

As a conclusion, the aim of this thesis was to develop a dynamic system that can be used in Eastern Mediterranean University for collecting, keeping, organizing, and processing the academic staff activities in reliable, faster, up-to-date archiving, and easier way. Powerful features such as searching and messaging are also included in the system. By our system, the "Rector", "Dean", and "Chair" can easily follow the academic staff activities under their authority in more detail.

Major benefits of the system are as follow:

- Assigning academic points automatically.

- Statistics and reports of activities can be obtained by authorized users (Rector, Deans, and Chairs).

- Each user has an authority level. Processes in the system is done by controlling the levels of authority.

- In order to facilitate access to activities stored in the system, we have developed an efficient advanced search mechanism that lets each authorized user search for activities.

- Activities are kept in a single database.

- Each activity of the academic staff will be checked and evaluated by the reviewers.

- In our system, we have developed an independent messaging system.

5.2 Future Works

There are various possibilities to enhance the features of the designed system. Some of them are as follows:

- The system considers the criteria of academic assessment as a fixed pointing system. A future study can be done on make this feature dynamic. That is, if the university changes the academic assessment criteria, the administrator of the system can be able to update the whole point system in a way that all activities get evaluated according to the new criteria.

- We are going to cover the rest of the "Academic Assessment Criteria" section of "rules and regulations of legislation" [1].

- Duplication mechanism can be improved with similarity check mechanism which uses the percentage of the similarity between the activities.

- Real-time statistics can be extended more. For example, each authorized user can be able to compare more than one faculty.

- Another possibility would be to let the user to search for other academic staffs' information. This feature may be useful. For instance, an academic staff may want to search another academic member for collaborative study.

- Some popular external databases such as; Web of Knowledge, Google Scholar and PubMed can also be included.

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APPENDIX

Appendix A: RPMA Source Code

In this section, the way of searching and choosing reviewers by the system is shown.

```php
$referees = $_POST['referee'];
$interest_id = $_POST['interest_id'];


//Interest'e gore seciyoruz
$str = "";
if(isset($referees) || count($referees) > 0) {
  foreach ($referees as $item)
      {
          $str .= "'".$item . "',";
      }
      $str .= "'".$_SESSION['projectUserId']. "',";
      $str = rtrim($str, ",");
      $s_user_id = $_SESSION['id'];
      $userQuerysInterest = "SELECT u.id,u.user_id,u.department_id FROM user u INNER
JOIN user_interest ui ON u.user_id=ui.user_id where  u.user_type_id !='1' and u.id NOT IN
($str) and u.referee='1' and id!='$s_user_id' and ui.interest_id='$interest_id' ORDER BY
name ASC";
      $userResultsInterest = mysqli_query($link, $userQuerysInterest);
      $interest_count = mysqli_num_rows($userResultsInterest);
  }
  else {
      $s_user_id=$_SESSION['id'];
      $userQuerysInterest = "SELECT u.id,u.user_id,u.department_id FROM user u INNER
JOIN user_interest ui ON u.user_id=ui.user_id where  u.user_type_id !='1' and
u.id!='$s_user_id' and u.referee='1' and id!='$s_user_id' and ui.interest_id='$interest_id'
ORDER BY name ASC";
      $userResultsInterest = mysqli_query($link, $userQuerysInterest);
      $interest_count = mysqli_num_rows($userResultsInterest);
  }

  if($interest_count > 0){
        $user_idleri = array();
        while($rows = mysqli_fetch_object($userResultsInterest))
```

```php
        {
            $user_idleri[$rows->id] = $rows->id;
        }
        $min = 999999999999999;
        foreach ($user_idleri as $item)
        {
            $refereecount[$item] = "select count(id) as id from publication where
controller_userid ='$item'";
            $refereecountResult[$item] = mysqli_query($link, $refereecount[$item]);
            while($rows = mysqli_fetch_object($refereecountResult[$item]))
            {
                if($rows->id <= $min){
                    $minUserid = $item;
                    $min = $rows->id;
                }
            }
        }
        $referee= $user_idleri[$minUserid];
    }
    else //Interest Yoksa, Bolum'den seciyoruz
    {

        if(isset($referees) || count($referees) > 0) {
            foreach ($referees as $item)
            {
                $str .= "'".$item . "',";
            }
            $str .= "'".$_SESSION['projectUserId']. "',";
            $str = rtrim($str, ",");
            $dep_id = $_SESSION['userDepartmantId'];
            $userQuerysDepartmant = "SELECT id,user_id,department_id FROM user where
user_type_id !='1' and department_id='$dep_id' and referee='1' and user_id NOT IN ($str)
and id!='$s_user_id' ORDER BY name ASC";
            $userResultsDepartmant = mysqli_query($link, $userQuerysDepartmant);
            $dep_count = mysqli_num_rows($userResultsDepartmant);
        }
        else {
```

```php
        $dep_id = $_SESSION['userDepartmantId'];
        $s_user_id=$_SESSION['id'];
        $userQuerysDepartmant = "SELECT id,user_id,department_id FROM user where
user_type_id !='1' and department_id='$dep_id' and referee='1' and id!='$s_user_id'
ORDER BY name ASC";
        $userResultsDepartmant = mysqli_query($link, $userQuerysDepartmant);
        $dep_count = mysqli_num_rows($userResultsDepartmant);
    }

        if($dep_count > 0){
            $user_idleri = array();
            while($rows = mysqli_fetch_object($userResultsDepartmant))
            {
                $user_idleri[$rows->id] = $rows->id;
            }
            $min = 99999999;
            foreach ($user_idleri as $item)
            {
                $refereecount[$item] = "select count(id) as id from publication where
controller_userid ='$item'";
                $refereecountResult[$item] = mysqli_query($link, $refereecount[$item]);
                while($rows = mysqli_fetch_object($refereecountResult[$item]))
                {
                    if($rows->id <= $min){
                        $minUserid = $item;
                        $min = $rows->id;
                    }
                }
            }
            $referee= $user_idleri[$minUserid];

        }
        else //Bölümde Yoksa Fakülteden seçiyoruz.
        {
            $dep_id = $_SESSION['userDepartmantId'];
            $getFacultyQuery = "select faculty_id from uni_department where id = '$dep_id'";
            $facultyResult = mysqli_query($link, $getFacultyQuery);
```

```php
        $row= mysqli_fetch_object($facultyResult);
        $fac_id = $row->faculty_id;
        $getDepartmanstQuery = "select id from uni_department where
faculty_id='$fac_id'";
        $depResult = mysqli_query($link, $getDepartmanstQuery);
        $val = "";


        while($rowDep= mysqli_fetch_object($depResult)){
          $val .= "'".$rowDep->id . "',";
        }
          $val =   rtrim($val, ",");
        $s_user_id = $_SESSION['id'];
        $userQuerysDepartmant2 = "SELECT id,user_id,department_id FROM user where
user_type_id !='1' and id!='$s_user_id' and department_id IN ($val)  and referee='1' and
user_id NOT IN ($str) ORDER BY name ASC";


        $facultyResult = mysqli_query($link, $userQuerysDepartmant2);
        $fac_count = mysqli_num_rows($facultyResult);
        if($fac_count > 0 ) {
            $user_idleri = array();


            while($rows = mysqli_fetch_object($facultyResult))
            {
                $user_idleri[$rows->id] = $rows->id;
            }
            $min = 99999999;
            foreach ($user_idleri as $item)
            {
                $refereecount[$item] = "select count(id) as id from publication where
controller_userid ='$item'";
                $refereecountResult[$item] = mysqli_query($link, $refereecount[$item]);
                while($rows = mysqli_fetch_object($refereecountResult[$item]))
                {


                    if($rows->id <= $min){
                        $minUserid = $item;
                        $min = $rows->id;
```

```php
                }
              }
            }
          $referee= $user_idleri[$minUserid];
        } else { // Fakültede de yoksa buradan seçiyoruz
          $s_user_id =$_SESSION['id'];
          $userQuerysDepartmantlast = "SELECT id,user_id,department_id FROM user
where  user_type_id !='1' and id!='$s_user_id'  and referee='1' ORDER BY name ASC";
          $lastResult = mysqli_query($link, $userQuerysDepartmantlast);
          $lastCount = mysqli_num_rows($lastResult);
          if($lastCount > 0 ) {
            $user_idleri = array();
            while($rows = mysqli_fetch_object($lastResult))
            {
              $user_idleri[$rows->id] = $rows->id;
            }
            $min = 99999999;
            foreach ($user_idleri as $item)
            {
              $refereecount[$item] = "select count(id) as id from publication where
controller_userid ='$item'";
              $refereecountResult[$item] = mysqli_query($link, $refereecount[$item]);
              while($rows = mysqli_fetch_object($refereecountResult[$item]))
              {

                if($rows->id <= $min){
                  $minUserid = $item;
                  $min = $rows->id;
                }
              }
            }
            $referee= $user_idleri[$minUserid];
          }


        }
      }
    }
```