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Abstract

News becomes essential in our daily life, and after intensive research we found that many people use news web sites to follow all news rather than buying news papers, they interested in follow the daily news whether in political, economic, sports ….. Etc.

Sometimes the published news was wrong and neither trusted nor confirmed which may misleads many readers, distracts public opinion, raise sedition, disputes, and may cause a loss of some companies and people.

This developed system introduces a trusted source for published news compared with other news sites, by extract news from other news websites then process this news to find related person or entities, after that send a notification message immediately by mobile application which contains the latest news to related VIP, this ensure instant communication, to take a comment from this VIP then publish all news with the comment of related entities through website.

Also all websites' readers can follow them Favoured VIPs and them latest news.

Many of websites news have no credibility in the published news, so our developed system provides an evaluation for the behavior of news sources.

This system ensures credibility and confidence in all published news.

Our system obtained:

- **patent from Egypt** with ID: 2011/2093
- **patent from America** with EFS ID: 12088963, Application Number: 61599445 and Confirmation Number: 3711

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Chapter 1
"Introduction"

1.1 Introduction

News web sites play a major role in publishing news in an easy way at any time.
Our developed system is perceived as trusted source for published news compared with other sites.

Some of this news is right and the other is wrong, but misinformation may cause many of the problems that is difficult remedied and may harm the reputation of one of Eminent Persons.

What about these problems?!!! How can you ensure from this news in an easy and clear way, so all the news published will be documented.

Our system can easily and automatically perform functions to solve this problem and to guarantee confidence in all the published news on our website.

1.2 Motivation

Most of people currently browse various sites such as those interested in political and artistic news about and news of SEC.... Etc… These sites play a major role in publishing news in an easy way in any place and at any time.

Some of this news is right and the other is wrong, but misinformation may cause many of the problems that is difficult remedied and may harm the reputation of one of Eminent Persons.

What about these problems?!!! How can you ensure from this news in an easy and clear way, so all the news published will be documented.

1.3 Problem Definition

We are trying to solve a big problem which represented at false news and rumors which attributed to a certain people or an entity, which make them face a big problem because they can't read all newspapers or news websites to follow their news, and if they can reach their news, of course they can't explain their point of view for every news published on them which may make the reader miss understand it through some ambiguity or these news are completely false .all of these can cause:

• discredit public figures as a result of rumors and false news.
• Strikes in the stock market and cash trading and economic indicators.
• Factional disputes.

Therefore, there is a need for a means or method to ensure confidence in the News

1.4 System Features

- **Receive notification:** VIPs notified when they mentioned in any news on the internet
- **Ability to comment and evaluate related news:** when a VIP receives a notification as he mentioned in a news, he can comment on it and evaluate it as true or false news(rumor)
- **Follow-up:** it provides the ability for registered users to follow-up the latest news of VIPs
- **Profile check:** View All VIPs profiles, and decide for yourself whether to follow them or no
- **Evaluation of sources:** which shows the percentage of credibility in other sites.

1.5 System Benefits

Save time: Users haven't to waste their time looking for News or rumors related to them on the internet as they can reach it faster, as they will receive alert once any related news with them published on the internet.

Save efforts: With Our system, users haven't to search magazines, newspapers, and websites to reach targets as they can follow them with US.

A wider reach of information: users can wildly find information more that they are used to see in a specific source, as we collect news from all publishing sources.

Ensure confidence in news: our system can ensure confidence in published news through publishing the comments of related entities to the news, so we offer opinion the other opinion.

Monitor news sources: Our system provides a periodic evaluation for news sources through the feedbacks of related VIPs on all news for all sources, which can provide users with the high confidence news sources

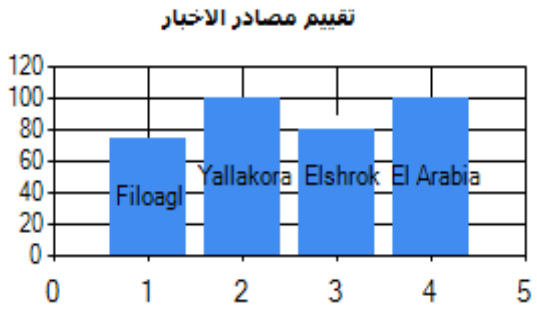


Figure 1.1 charts for Evaluate resources

1.6 System Objectives and Characteristics

We aim to develop software system that Guarantee the confidence in all news published

The system will show all news and comments of news' owners related to in easy and friendly way.

The system **firstly** will collect news from different web sites.

Secondly, all these collected news will categorized in there correct categories based on data mining field.

Thirdly, t*h*e news will send to:

1- Pages of their owners

2- All people who follow this VIPs.

3-the mobile application owned by news owner (VIP).

Fourth, the owner of news (VIP) will comment on published news via his page or his mobile application.

Fifth, this comment will publish under the news related to.

So, all news will be documented with the owners' comments which guarantee the confidence in our system.

1.7 System stakeholders

Stakeholders are individuals or organizations who stand to gain or lose from the success or failure of a system. For our system, this can include:

1. Users of a system and all readers and all followers of News who interested in Politics, sport, art, economy…..etc
2. Football players, artists and singers.
3. Politicians and their staff
4. Owners of companies and businessmen
5. SEC and its staff

- Since, stakeholders are those who are impacted by (or have an impact on) the project, their perspectives need to be taken into account in order for a project to be successful.
- Stakeholders can have positive or negative views regarding a given project, and often don't agree with one another, making it a challenge to reconcile their varied viewpoints.

1.8 System overview

Figure 1.1: System Overview

We aim to develop a software system to ensure confidence in the news published in various media.

As shown in figure 1.1, the overview of the system:

- Where the news is collected from the various sources
- Categorization process which categorize all collected news

- Process this news to extract related entities and related VIPs related to.
- Connect with these entities immediately and gain their comments.
  send news to the owner of the news through the application of Mobile or through his page in a web site"
- The owner of the news will comment on this published news, either to confirm or deny this news.
- Publish all news and related comments together on a website.

1.9 Document Organization

Document organization is how this document is organized, what the chapters are, and what those chapters discuss. The document consists of seven chapters, which are organized as the following:

Chapter 1: Introduce the system including its objectives and features.

Chapter 2: Introduce all the used technologies in detailed.

Chapter 3: clarify the system analysis and each part in the system in details

Chapter 4: Show the design of the system.

Chapter 5: Technical description of the implementation part of the system.

Chapter 6: Test cases that track every part in the system, and show the output.

Chapter 7: System conclusion and the work that will be included in the future.

1.10 Summary

In this chapter, the following main points were discussed:

- Motivation section discusses "Why doing this system?"
- Problem Definition section discusses the current problem or defect that the proposed system addresses and will be implemented to solve it.
- System Overview section discusses "How we will implement this system"

System Features sect

Chapter 2
Background
And
Related systems

2. 1 Background and related systems

This chapter covers a brief background about the technologies and techniques used for developing the proposed system, such as data mining , reading RSS and extract information from it , mobile applications ,

In addition, brief descriptions about different mobile platforms are mentioned in the chapter in order to find the suitable platform to use for implementing the mobile application n guide of the proposed system. Finally, take a closer look to other systems that are related to the proposed system and the differences among them

2.2 Information extraction

2.2.1 Information extraction overview

Is the task of automatically extracting structured information from machine-readable documents, in our case the machine-readable documents are websites and its contents (html files, RSS, Etc) [1].

There are several methods and tools which used in this issue, In our case we preferred to work with RSS and crawling methods for extracting News form News websites on the internet that is because the RSS simplicity, but it does not provide full description for each news, so we have to use crawling methods to extract missed information of each News in the RSS.

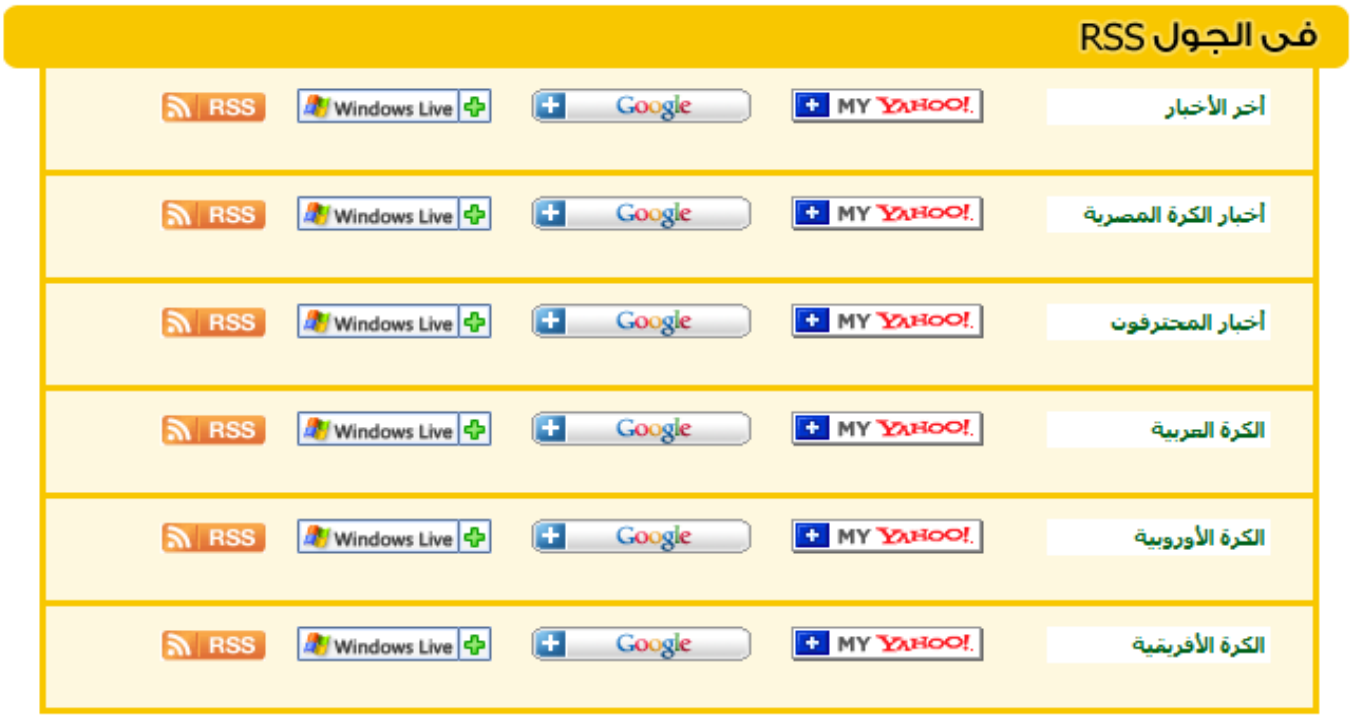
2.2.2 RSS (Really Simple Syndication)

Is a family of web feed formats used to publish frequently updated works—such as blog entries, news headlines, audio, and video—in a standardized format— An RSS document (which is called a "feed", "web feed", or "channel") includes full or summarized text, plus metadata such as publishing dates and authorship [2]..

RSS feeds benefit publishers by letting them syndicate content automatically. A standardized XML file format allows the information to be published once and viewed by many different programs. They benefit readers who want to subscribe to timely updates from favorite websites or to aggregate feeds from many sites into one place.

Through our survey on the internet and News websites, we found the most of them provides its news in that format [3].

For example [4].



2.2.3 Crawling

Web crawling is the process used by search engines to read websites contents, in our case we used it to read <Body> and sometimes <Image> of each news in the website as it is not referenced in the RSS feeds as shown in figure 2.1.

First we have to locate the news link on the RSS feeds, and then try to read the source code of the web page containing the news itself.

After that we have to locate the body or content of the news location in the HTML tags then cut it.

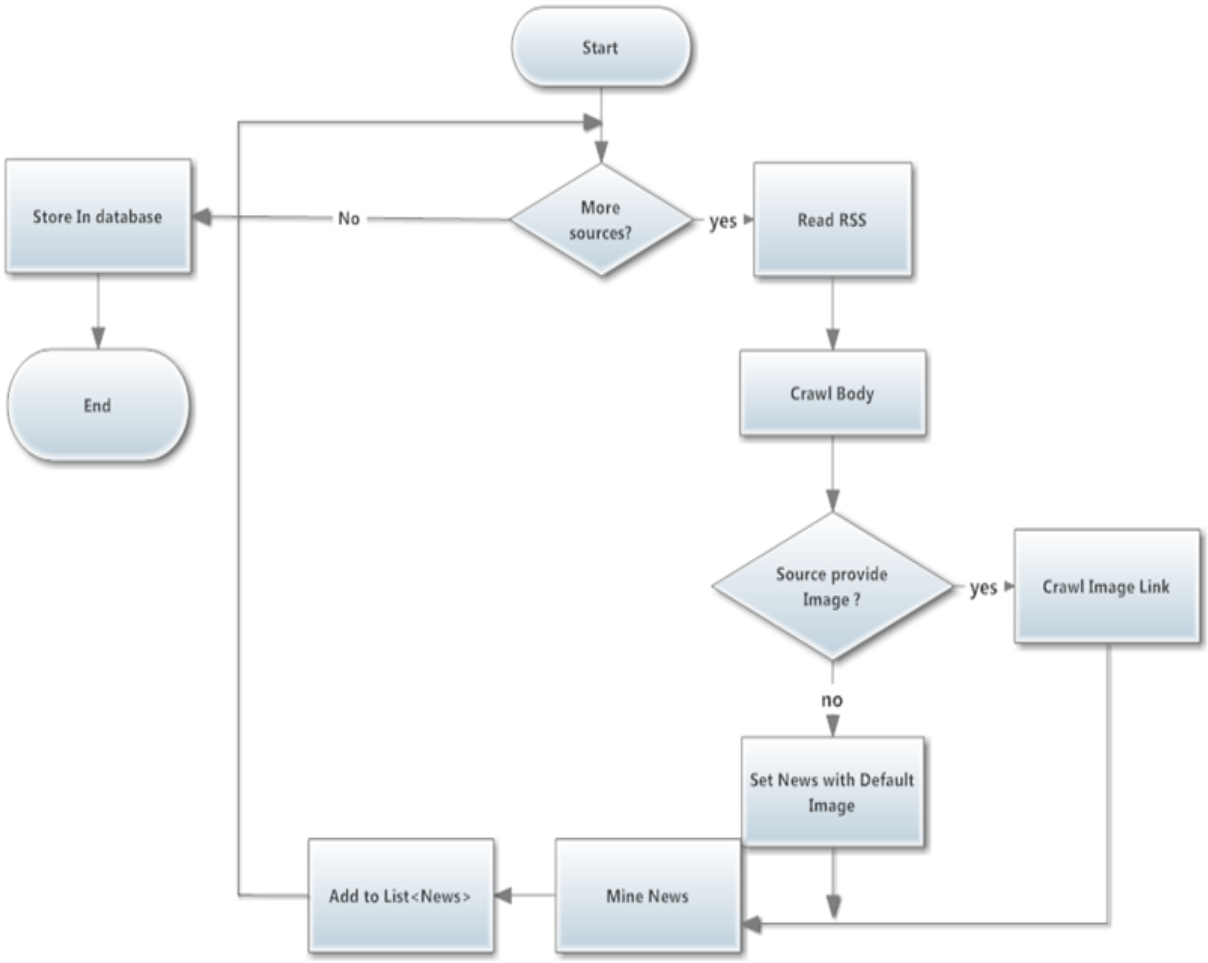


Figure 2.1 reading news

Major steps:

Read RSS: which depends on the order of nodes in each website RSS feeds

Crawl Body: Read the link of all news and crawl it from the source which published it, it also depends on the structure of each website HTML tags.

These techniques provide simplicity using RSS feeds which take a little time compared with other methods.

Some websites not provide the services of RSS, so we can't use it as news sources.

2.2.4 Evaluation of News sources

As shown in figure 2.2 the steps of evaluation of News sources is service and property in our system, It provides an evaluation for the behavior of News sources, and we are the first who do that

Evaluation based on the News we collect from these sources and the evaluation each VIP related to it.

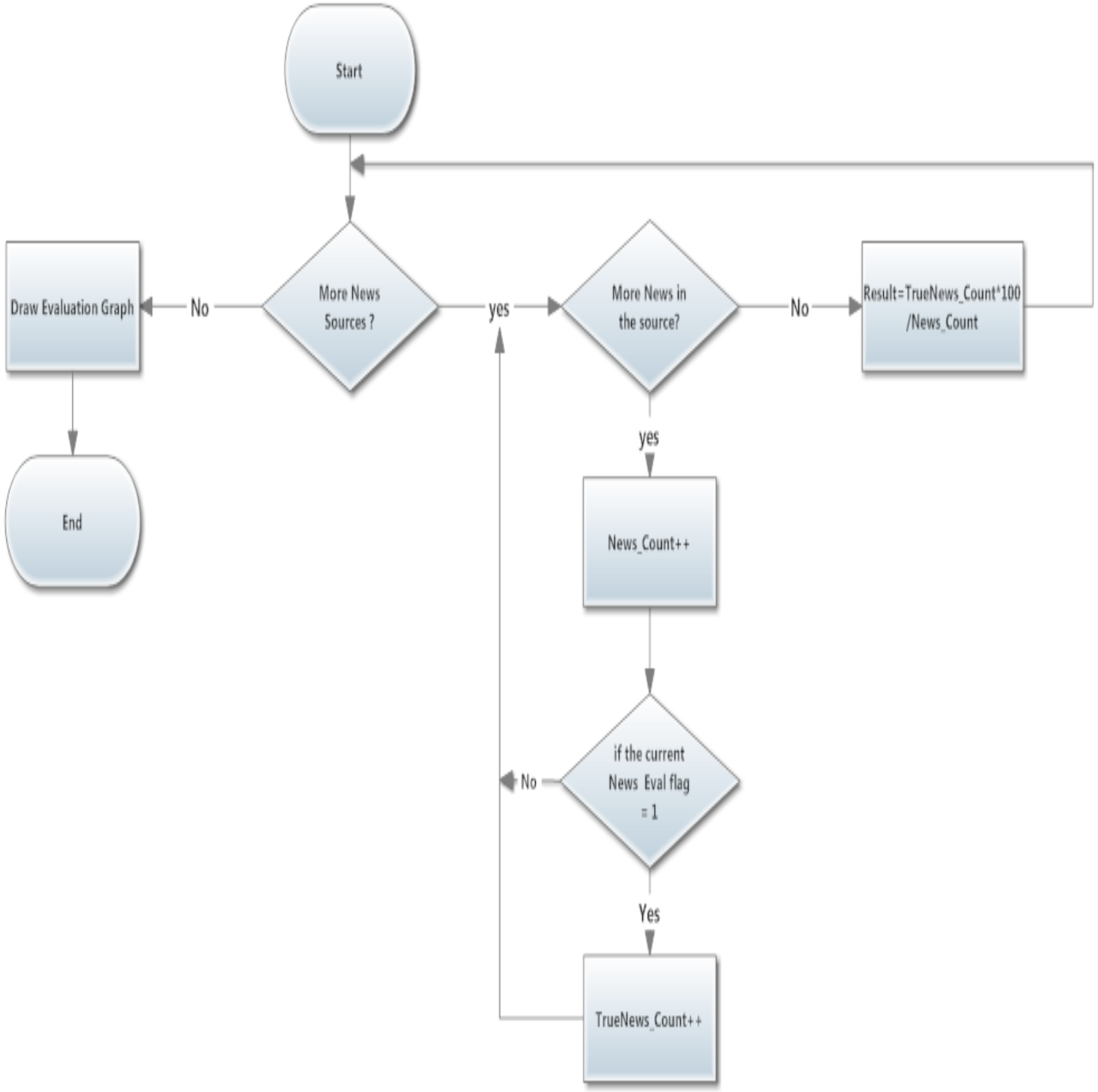


Figure 2.2 Evaluate Sources

2.3 Data Mining

2.3.1 Overview

Data mining, the extraction of hidden predictive information from large databases, is a powerful new technology with great potential to help companies focus on the most important information in their data warehouses. Data mining tools predict future trends and behaviors, allowing businesses to make proactive, knowledge-driven decisions. The automated, prospective analyses offered by data mining move beyond the analyses of past events provided by retrospective tools typical of decision support systems. Data mining tools can answer business questions that traditionally were too time consuming to resolve. They scour databases for hidden patterns, finding predictive information that experts may miss because it lies outside their expectations. [10]

Data mining involves six common classes of tasks:-

- **Anomaly detection**
- **Association rule learning**
- **Clustering**
- **Classification**
- **Regression Summarization**

We use the Clustering class to get our entity from the news

2.3.2 Similarity techniques

Similarity can be roughly described as the measure of how much two or more objects are alike. Similarity can also be seen as the numerical distance between multiple data objects that are typically represented as value between the range of 0 (not similar at all) and 1 (completely similar). Depending on the similarity metric used the triangle inequality between objects may hold, but more generally the two properties that must be maintained for similarities is that the measure of similarity must fall within the range of 0 and 1 and symmetry. Symmetry being the property that states that for all x and for all y the similarity of x and y must be the same as the similarity of y and x. [11]

Similarity Metrics

- ## *Euclidean Distance*

Euclidean Distance between a pair of objects refers to the metric distance between the objects. This value is found by taking the root of the sum of squared differences between each of their attributes. For example, if there are two objects, A and B, with attributes x, y, and z, to determine the Euclidean distance between the two one need only:

1. Find the differences between each pair of attributes:
   - (xA- xB)
   - (yA- yB)
   - (zA- zB)
2. Square the differences between each pair of attributes:
   - (xA- xB)2
   - (yA- yB)2
   - (zA- zB)2
3. Sum all the squared values from step 2:
   - Sum of Squared Differences = (xA- xB)2+(yA- yB)2 +(zA- zB)2
4. Take the square root of the sum from step 3:
   - Euclidean Distance = sqrt(Sum of Squared Differences) = sqrt ((xA- xB)2 +(yA- yB)2 +(zA- zB)2)

- ## *Cosine Similarity*

Cosine Similarity is a similarity metric that can be used to measure the similarity of two text documents. Documents can be represented by vectors where each attribute represents the frequency of a word that appears in a document. Even though documents may have many attributes, because of the nature of the human language the word vectors are actually very sparse. Taking advantage of the same properties as Jaccard, all 00 matches are ignored in the similarity calculation. Similarly wiht the Tanimoto coefficient the Cosine Similarity can also handle non binary values. Since two documents can be represented as vectors for two vectors to be similar (disregarding magnitude) the angles must be close. So if the Cosine Similarity yields one then the angle between the two vectors is 0 degrees. Also if the Cosine Similarity is 0 then the angle between the two vectors is 90 degrees, or perpendicular, indicative to being very dissimilar.

Given two vectors of attributes, A and B, the cosine similarity, θ, is represented using a dot product and magnitude as

$$\text{similarity} = \cos(\theta) = \frac{A \cdot B}{\|A\|\|B\|} = \frac{\sum_{i=1}^{n} A_i \times B_i}{\sqrt{\sum_{i=1}^{n} (A_i)^2} \times \sqrt{\sum_{i=1}^{n} (B_i)^2}}$$

The resulting similarity ranges from −1 meaning exactly opposite, to 1 meaning exactly the same, with 0 usually indicating independence, and in-between values indicating intermediate similarity or dissimilarity.

For text matching, the attribute vectors A and B are usually the term frequency vectors of the documents. The cosine similarity can be seen as a method of normalizing document length during comparison.

As shown in figure 2.3 the steps of mining process.

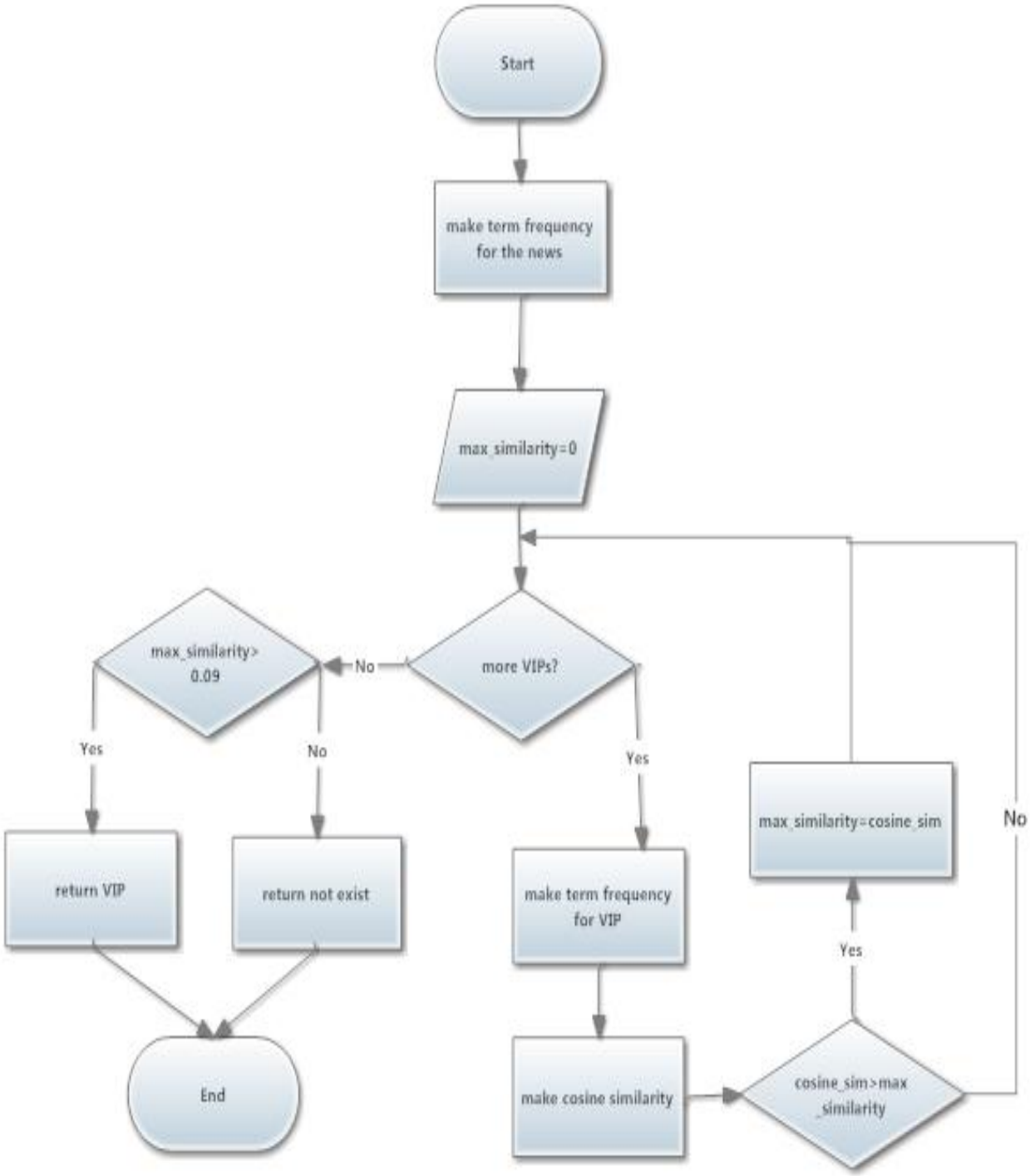


Figure 2.3 Main

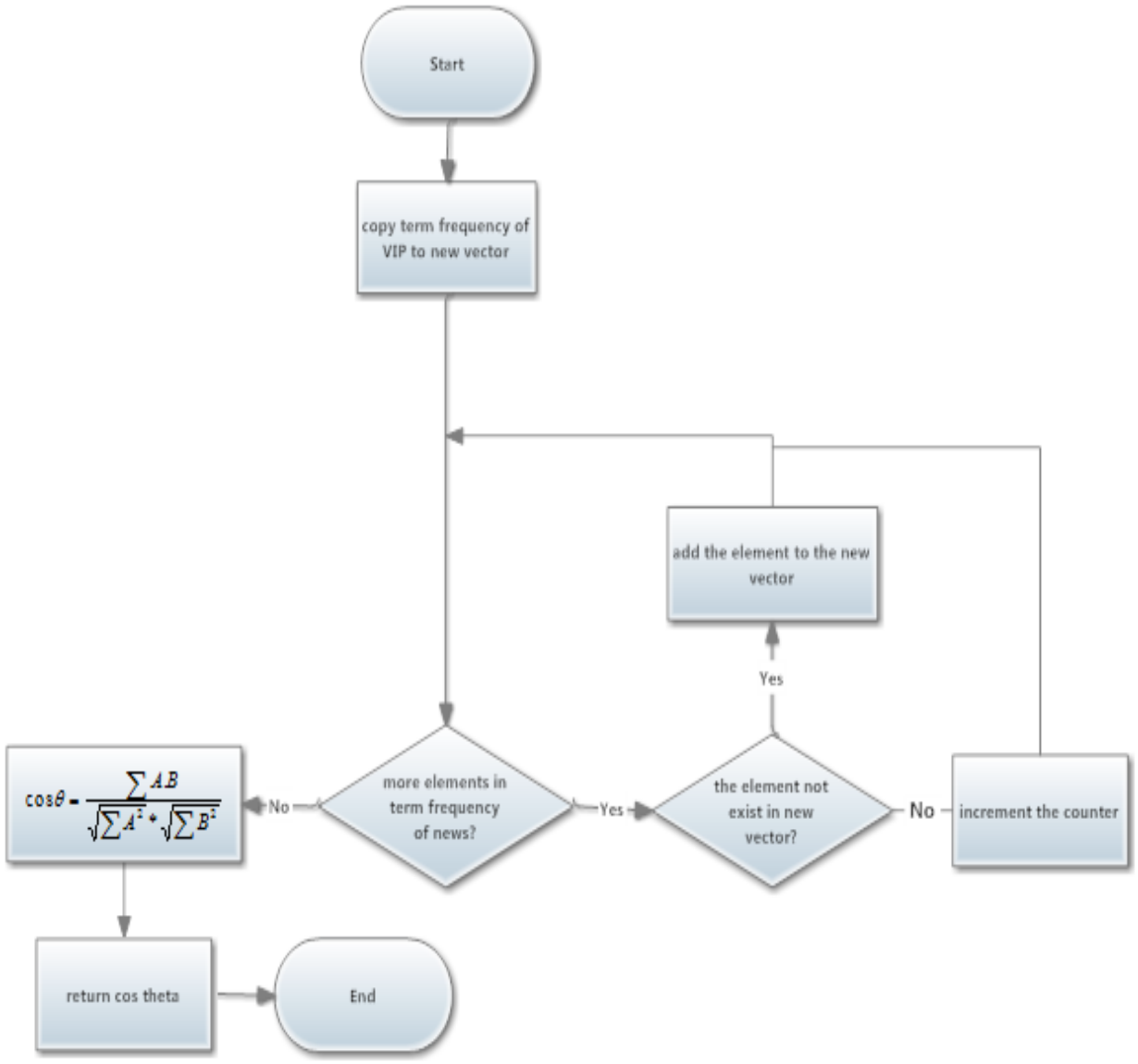


Figure 2.4 make cosine similarity

As shown in figure 2.4, The resulting similarity ranges from −1 meaning exactly opposite, to 1 meaning exactly the same, with 0 usually indicating independence, and in-between values indicating intermediate similarity or dissimilarity.

For text matching, the attribute vectors *A* and *B* are usually the term frequency vectors of the documents. The cosine similarity can be seen as a method of normalizing document length during comparison.

Figure 2.5 make term frequency

- **Make term frequency:** spilt text into words and filter it from key words, then count the number of each word as shown in figure 2.5.
- **Make cosine similarity:** copy the term frequency of VIP to new vector, then compare with the news term frequency getting the new vector containing the word and it's frequency in the VIP vector and News vector, finally compute the cosine theta between these two vectors with the equation which shown in the definition .
- **Return the related VIP:** loop on all VIPs and compute its similarity, the maximum similarity and more than the threshold VIP is the related VIP.

Advantages and Disadvantages of this technique:

- Advantages: make similarity between the News and the VIPs more efficient than just simple compare.
- Disadvantages: the more register VIPs, the more time processing.

Finally, Data mining can easily determine which VIP related with this News with an efficient algorithm.

2.4 Web Services

A Web service is a method of communication between two electronic devices over the Web (our Site with the Online Database Engine). [5]

- Web services are application components
- Web services communicate using open protocols
- Web services are self-contained and self-describing
- Web services can be discovered using UDDI
- Web services can be used by other applications
- XML is the basis for Web services

Web Services have Two Types of Uses:

Type	Description
1. Reusable application-components.	-There is things applications need very often. So why make these over and over again? -Web services can offer application-components like: currency conversion, weather reports, or even language translation as services.
2. Connect existing	-Web services can help to solve the

software.	interoperability problem by giving different applications a way to link their data. -With Web services you can exchange data between different applications and different platforms.

Table 2.1 types of web services

In our project we use the second Type by connecting the site with the online Database engine.

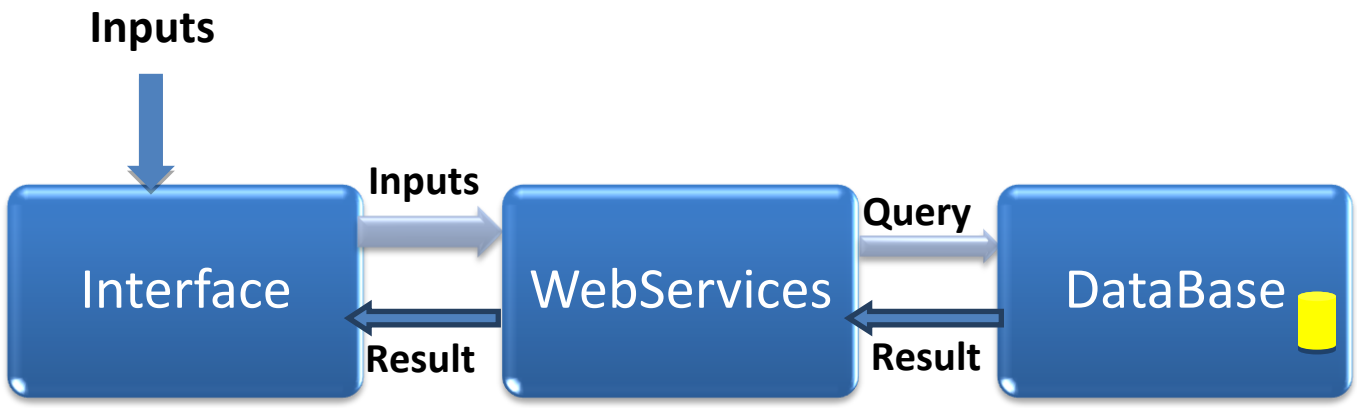
Web Services have three basic platform elements (Techniques):

Techniques	Description
SOAP	SOAP is an XML-based protocol to let applications exchange information over HTTP. • SOAP stands for Simple Object Access Protocol • SOAP is a communication protocol • SOAP is a format for sending messages • SOAP is designed to communicate via Internet • SOAP is platform independent • SOAP is language independent • SOAP is based on XML • SOAP is simple and extensible • SOAP allows you to get around firewalls • SOAP is a W3C standard
WSDL	WSDL is an XML-based language for locating and describing Web services. • WSDL stands for Web Services Description Language • WSDL is based on XML • WSDL is used to describe Web services • WSDL is used to locate Web services • WSDL is a W3C standard
UDDI	UDDI is a directory service where companies can register and search for Web services.

	• UDDI stands for Universal Description, Discovery and Integration • UDDI is a directory for storing information about web services • UDDI is a directory of web service interfaces described by WSDL • UDDI communicates via SOAP • UDDI is built into the Microsoft .NET platform

Table 2.2 web services' techniques

In our Project WSDL is the Technique used.



Major steps:

- **Create the connection String to connect with the Database.**
- **Implementing required Web Service :-**
    - Create query string to send to the Database which is about to be executed.
    - Open Connection with the Database.
    - Execute the query.
    - Get the result from the Database.
    - Close the Connection.
    - Return the result (if exist).

- the Database and return it as Output

Benefits resulting from using web services

1- Are that it's Well-defined and well-used standards with industry momentum.
2- Well-defined core standards as well as sub-standards.
3- Many tools available to support it.
4- Web services take Web-applications to the Next Level.
5- With Web services, your accounting department's Win 2k server's billing system can connect with your IT supplier's UNIX server.

2.5 Mobile Application

2.5.1 Overview of Mobile platforms

An operating system is software that is used for mobile devices. It is the software platform on top of which other programs, called application programs, can run on mobile devices such as mobile phones, smart phones, PDAs, and handheld computers. Abbreviated as mobile OS.

Now, there are many mobile platforms operating systems that can be found on smart phones include:

- Nokia's Symbian
- Google's Android
- Apple's iOS
- RIM's BlackBerry OS
- Microsoft's Windows Phone
- Linux, Palm/HP's WebOS
- Samsung's Bada
- Nokia's Maemo and Meego among many others.

2.5.2 Android

Android from Google Inc. was developed by a small startup company that was purchased by Google Inc., and Google continues to update the software. Android is an open source, Linux-derived platform backed by Google, along with major hardware and software developers (such as Intel, HTC, ARM, Samsung, Motorola and eBay, to name a few), that form the Open Handset Alliance. This OS is fairly new, though has a following among programmers. There have been six releases of Android, which are Android 1.0, 1.5, 1.6, 2.0, 2.1, and 2.2. There has been an explosion for devices that carry Android OS. From second quarter of 2009 to the second quarter of 2010, Android's worldwide market share rose 850% from 1.8% to 17.2%.

- Google Android is open source software.
- Google Android SDK can run in multiplatform.
- Google Android has a free Emulator.
- Google Android support Google Maps.
- Multitasking of applications is available.

- Google's mobile platform Android becomes the top smart phone platform in fourth quarter of 2010.

Android could to device messaging Framework:

Android Cloud to Device Messaging (C2DM) is a service that helps developers send data from servers to their applications on Android devices. The service provides a simple, lightweight mechanism that servers can use to tell mobile applications to contact the server directly, to fetch updated application or user data. The C2DM service handles all aspects of queueing of messages and delivery to the target application running on the target device. [12]

- It allows third-party application servers to send lightweight messages to their Android applications. The messaging service is not designed for sending a lot of user content via the messages. Rather, it should be used to tell the application that there is new data on the server, so that the application can fetch it.
- C2DM makes no guarantees about delivery or the order of messages. So, for example, while you might use this feature to tell an instant messaging application that the user has new messages, you probably would not use it to pass the actual messages.
- An application on an Android device doesn't need to be running to receive messages. The system will wake up the application via Intent broadcast when the the message arrives, as long as the application is set up with the proper broadcast receiver and permissions.
- It does not provide any built-in user interface or other handling for message data. C2DM simply passes raw message data received straight to the application, which has full control of how to handle it. For example, the application might post a notification, display a custom user interface, or silently sync data.
- It requires devices running Android 2.2 or higher that also have the Market application installed. However, you are not limited to deploying your applications through Market.
- It uses an existing connection for Google services. This requires users to set up their Google account on their mobile devices.

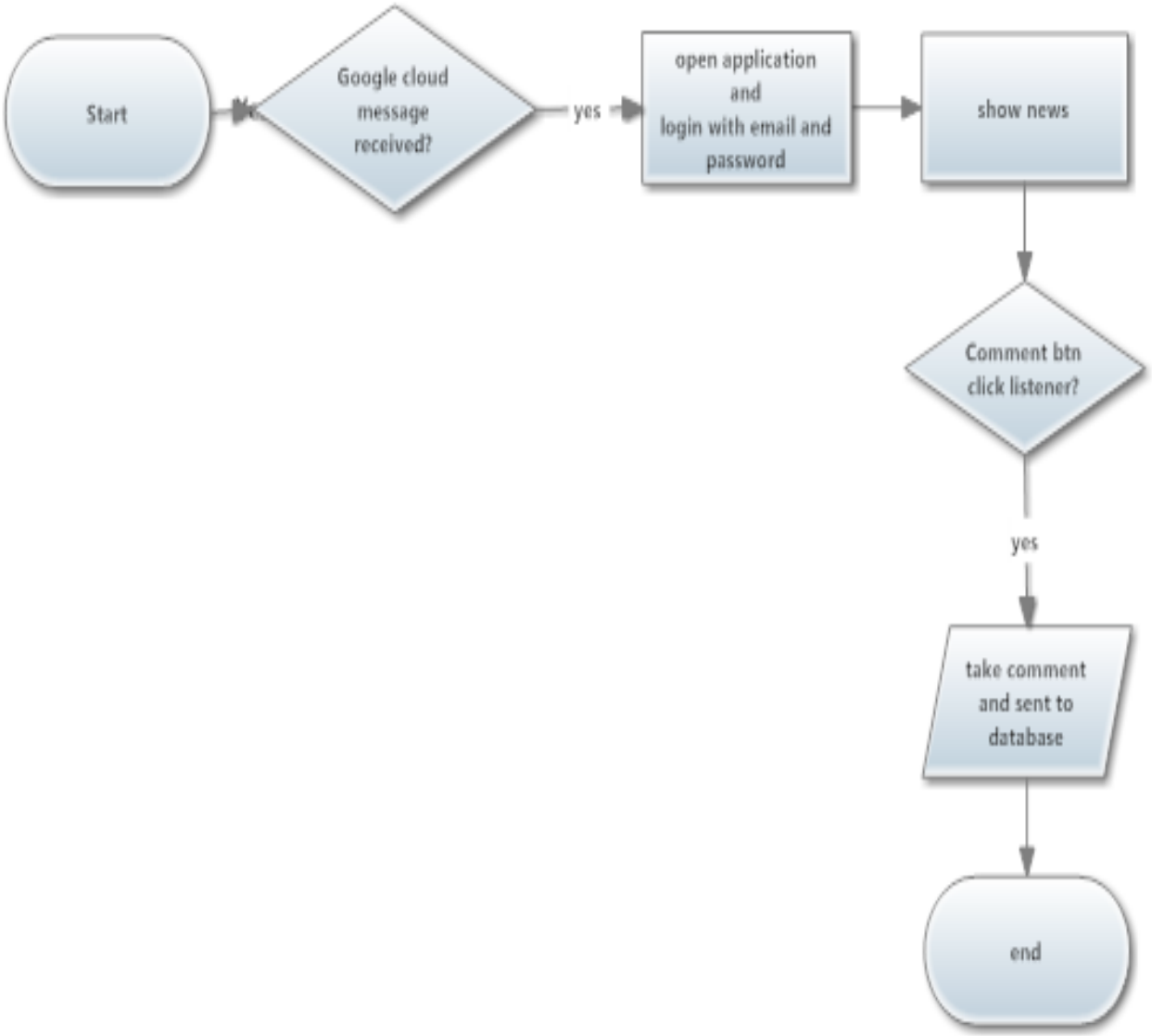


Figure 2.6 Float chart for Mobile application

Major Steps:

1. **Google cloud message receive:** wait to receive a GCM from the server to alarm the mobile that new news found for the VIP user.
2. **Show the news:** retrieve the new news from database by call the web service which responded to do this, and then show the news to the form of the mobile application.
3. **Save comment:** when the VIP user writes his comment the application take it and sent it by web service to the data base.

Advantages of using this technique:

- Stay in touch at the same moment that the news has been published.
- The ability of commenting anytime and anywhere.
- Check from the validity of the new from the related VIP in the time.

2.6 Summary

First, this chapter mentioned all the used technologies in the proposed system and a detailed background on each of them are provided, and why they are used in the proposed system and how.

Second, some related systems to the proposed one are mentioned with a brief description about their features and their disadvantages.

Chapter 3 "System Analysis"

3 System Analysis

Building such systems is not an easy process but requires certain skills and capabilities to understand and follow a systematic procedure towards making of detailed and fine analysis to the system. For this, system is analyzed in terms of some diagrams as use case diagram and system sequence diagram. Those diagrams clarify to us how to develop our system. Not only analysis diagrams but also functional and non-functional requirements are discussed and mentioned.

3.1 System Requirements

3.1.1 Functional Requirements

1- Register for special account:

- The Special user will be able to make registration to have his own profile.
- The news will be sent to Special user's profile to write his comment.

2- Send comment through website:

Once the news sent to special user's profile he will able to login and write his comment to confirm or deny the news.

3- Send comment through mobile:

- Once the news sent to special user's profile he will able to open the mobile application and write his comment to confirm or deny the news.
- This comment will be sent to the website and appear with related news.

4- Browse the website:

Any user can browse the website and enter all categories to read latest news.

5- Follow:

- The registered user can easily follow any Special user to know his all news and his comments.
- The news he follows will be sent to his own profile and his mobile application.

6- Register:

- ✓ **For the user**

Registration is the main condition for users to have these options:

- Have personal profile.
- Follow any special user.
  - ✓ **For the special user:**

Registration is the main condition for special users to have these options:

- Have special personal profile.
- Download the application.
- All the news related to him will send to his own profile to write his comment.

7- Approve special user:

The administrator can approve all requests when special users make request for special account to receive all them news.

8- Delete user:

Any user violates the rules; the administrator can delete him immediately.

10- Send message to special user when notification appear:

The system capable of sending messages to VIPs when any news published for them to add their comments.

11- Send message to user when notification appears:

When new news or comments from VIPs published on the site the system will make notifications to all followers of those VIPs.

12-aggregate data:

The system capable of aggregating all different resources and extract the news from it.

13 - Evaluate web sites:

By owners of news (VIPs) comments' on all news, we can know the Percentage of credibility of all news resources and all published news.

This is what distinguishes our website.

3.1.2 Non-functional Requirements:-

- ✓ **Accessibility**

The application will be web-based and can be accessed from any device that has web browser.

The application will have a mobile-based version that enables to use it outdoor.

- ✓ **Availability**

The database server will be replicated and the hosting package will include disaster recovery plan.

- ✓ **Accuracy**

Use web site get accurate news and trusted comments from owners of news.

System will read and categorize news accurately.

- ✓ **Usability**

Use friendly GUI.

Make the user guide in a user friendly way.

- ✓ **Flexibility**

It is possible to increase or extend the functionality of the system in the future.

- ✓ **Integrity**

Integrity requirements define the security attributes of the system, restricting access to data to users and special user and protecting the privacy of data entered.

- ✓ **Real-time System**

The system should provide solutions in suitable time. This achieved by, the user or special user requests should be served in a real-time fashion.

- ✓ **Reliability**

Reliability specifies the capability of the software to maintain its performance over time, so the system must be maintained if there is sudden loss of database or web service connections.

3.2 Domain Model

A domain model in problem solving is a conceptual model of all the topics related to a specific problem. It describes the various entities, their attributes, roles, and relationships, plus the constraints that govern the problem domain.

Figure 3.1 show the system domain model.

The domain model consists of:

- Admin can manage users, special users and news and has the following attributes: ID, name, password use it when login and secret question (secretQ) that set by admin which ensure more security and a secret answer (secretA).

- User have only one profile that contain an image for him and the followed special user's .the user have attributes :ID , name and password which use them when he want to login to the system, E-mail, secret question(secretQ) ,secret answer(secretA) ,gender and birthdate.

- Special user may related to one or more news and can add comment to his related news and have only one profile which contain image and his own news, he can download application ,and have the following attributes : ID , Nickname , Full Name ,password ,gender, phoneNumber, Address, Email, Job, Birthdate , SecretA and SecretQ.

- News may be related to special user, each news may have one comment have attributes like image ,title and body of news .

- There are different sources and each source contains news and have attribute like name, description and RSS-link.

- The website consists of different categories each category consists of one to many news

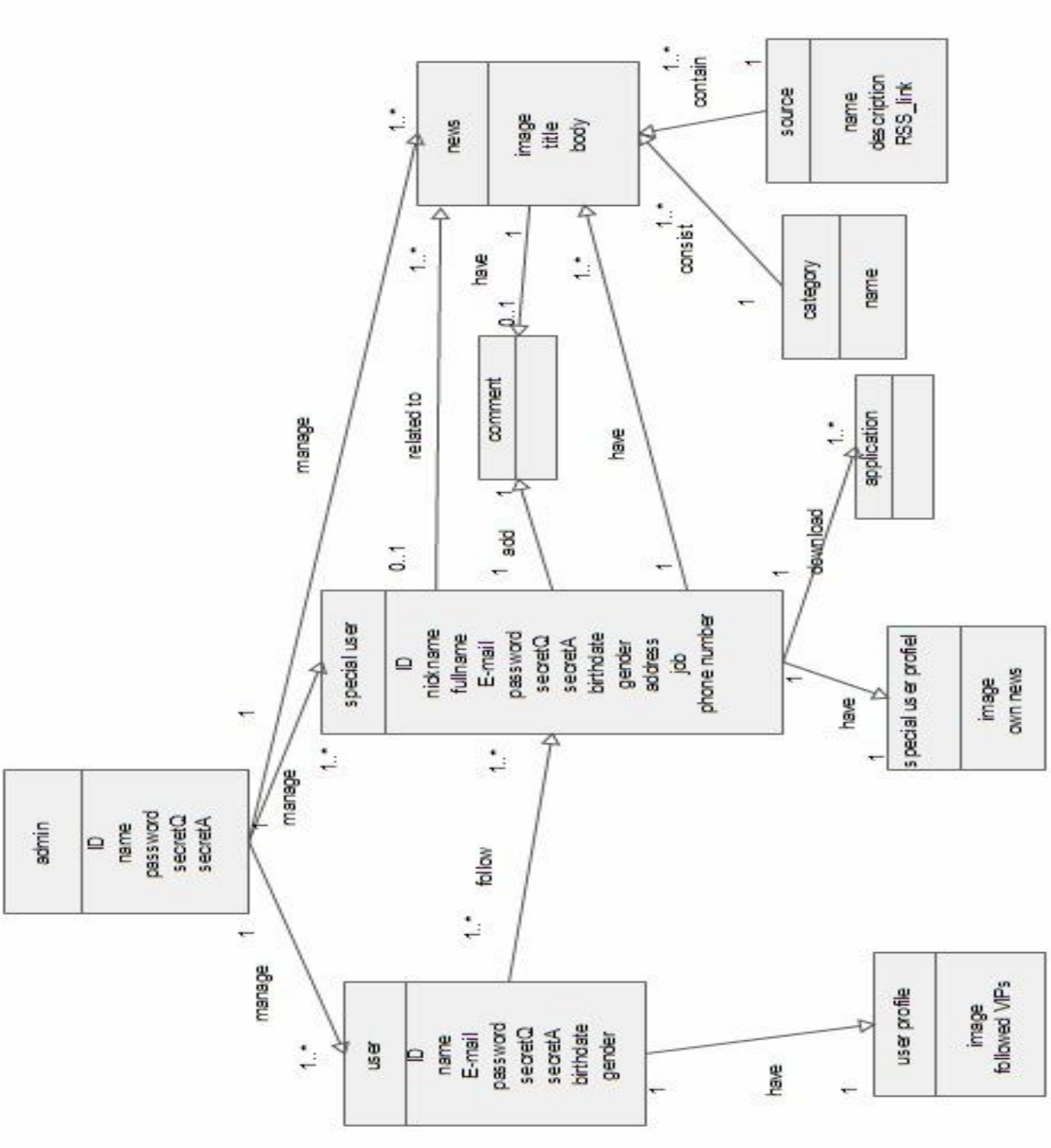


Figure 3.1: Domain Model

3.3 Use Case Diagram

The use case diagram is drawn to show what system functions should be performed for the user and the user roles can be depicted. Figure 3.1 presents the use case diagram of the system. It shows the interaction between the system and its users in terms of what each user can do in the system.

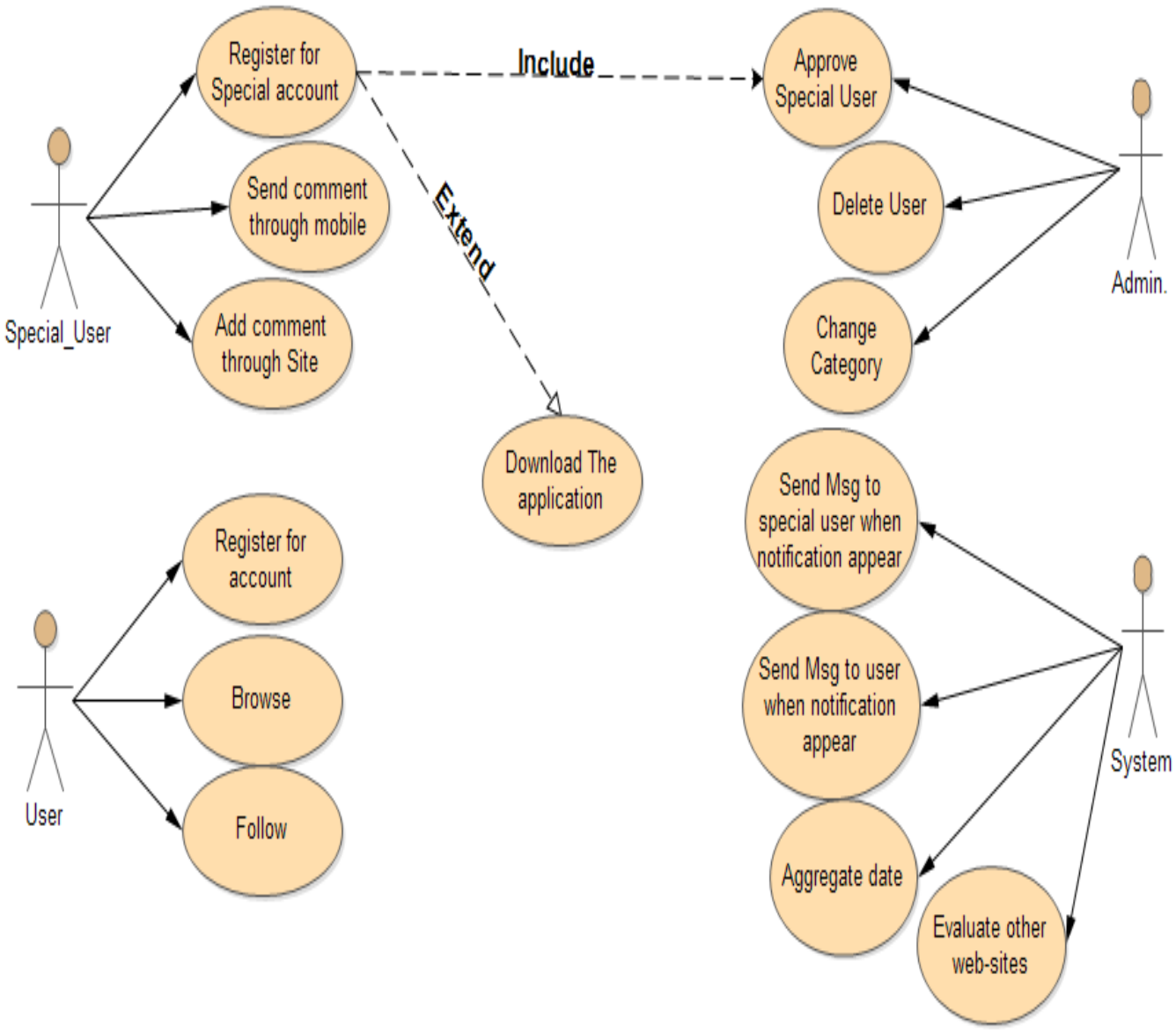


Figure 3.2: Use Case Diagram

1-Register for special user:

Use case name	Register for special user
Summary	The Special user will be able to make registration by enter his information to have an own profile.
Actors	Special User
Preconditions	N/A
Scenario	1. VIP registers through the website. 2. Admin approves the account. 3. The user can download the mobile application and use it.
Post conditions	User has an account.

Table 3.1 register for special user USE CASE

2-Send comment through mobile:

Use case name	Send comment through mobile
Summary	The Special user will be able to write his comment through mobile application once the news sent to him.
Actors	Special User
Preconditions	the user has his own mobile application and has VIP account.
Scenario	1-login through the mobile application. • If he login successful: then 2-choose the news he want to comment. 3-write comment 4- Confirm it for publishing. • If login false: then The user will browse the site or make new account.
Post conditions	N/A

Tables 3.2 send comment through mobile USE CASE

3-add comment through website:

Use case name	add comment through website
Summary	Once the notification message contains news sent to special user's profile he will able to login and write his comment.
Actors	Special User
Preconditions	1-the user has VIP account 2-the user must login
Scenario	1-login through website. • If he login successful: then 2-choose the news he want to comment. 3-write comment 4- Confirm it for publishing. • If login false: then The user will browse the site or make new account.
Post conditions	The comment published on website.

Table 3.3 add comment trough site USE CASE

4-Register for user

Use case name	Register for user
Summary	The user will be able to make registration by enter his information to have an own profile.
Actors	User
Preconditions	N/A
Scenario	User registers through the website.
Post conditions	User has an account.

Table 3.4 register for user USE CASE

5-follow:

Use case name	Follow
Summary	This use case describe that the registered user can easily follow any Special user to know his all news and his comments.
Actors	User
Preconditions	the user has user account

Scenario	1. The user login to his own account. 2. choose VIPs who want to follow 3. Choose whether receive notification when VIP's news appear or when VIP comment.
Post conditions	N/A

Table 3.5 follow USE CASE

6-change category:

Use case name	Change category
Summary	Only the administrator who can move news from one category to another if an error in categorization occurred.
Actors	Admin
Preconditions	The news is not in correct category.
Scenario	1. The admin login. 2. Check news if news in its correct category. 3. If news is not in its correct category he moves the news to new category.
Post conditions	The news moved from category to another category.

Table 3.6 change category USE CASE

7-approve special user:

Use case name	Approve Special User
Summary	The admin check if there are registrations for special account then he will approve them.
Actors	Admin
Preconditions	User must make registration for special account.
Scenario	1. The admin login. 2. Check if special users make registration. 3. Approve special user.

Post conditions	The user has special account just for him.

Table 3.7 approve special user USE CASE

8-delete user:

Use case name	Delete User
Summary	The admin can delete any user from website
Actors	Admin
Preconditions	N/A
Scenario	1. The admin login. 2. admin will delete the user
Post conditions	Number of users will decrease.

Table 3.8 delete user

9-Send message to special user when notification appears:

Use case name	Send message to special user when notification appear
Summary	This use case describe that the system send messages to VIPs when any news published for them to add their comments.
Actors	System
Preconditions	New news published related to special user
Scenario	1. System check whether there is new news publishes related to special user. 2. Search for the special user which the news related on. 3. Send message on the mobile application to this special user to add his comment.
Post conditions	N/A

Table 3.9 send message to special user when notification appear USE CASE

10-Send message to the user when notification appears:

Use case name	Send message to user when notification appear
Summary	This use case describe that When new news or comments from VIPs published on the site the system will make notifications to all followers of those VIPs.
Actors	System
Preconditions	New news published related to special user he followed.
Scenario	1. System checks whether there is new news publish related to special user. 2. Search for users who followed this special user. 3. Send message on the mobile application to these users.
Post conditions	N/A

Table 3.10 send message to user when notification appear USE CASE

11- Aggregate data:

Use case name	Aggregate data
Summary	The system capable of aggregating all different resources and extract the news from it.
Actors	System
Preconditions	New news published.
Scenario	1. Search for the published news about that special users and other news in other sites. 2. the system aggregate the all news that is published about anything or anyone
Post conditions	N/A

Table 3.11 aggregate data USE CASE

12- Evaluate websites:

Use case name	Evaluate websites
Summary	This use case evaluate the system through the comment of VIPs on news
Actors	System
Preconditions	VIPs add their comments on published news to deny it or ensure it.
Scenario	1. The VIP can evaluate the news as true or false while commenting on it. 2. The system re-evaluate the news sources after the rating of the VIP
Post conditions	N/A

Table 3.12 evaluate websites USE CASE

3.4 System Sequence Diagrams

The system sequence diagram is drawn to clarify the relations and interactions between the user and the system. [9].

1. Registration for Special user:

This diagram shows the system sequence diagram for register for special account.

The special user inserts his information in the system the system check his E-mail if valid the system saves it and send him a confirmation message.

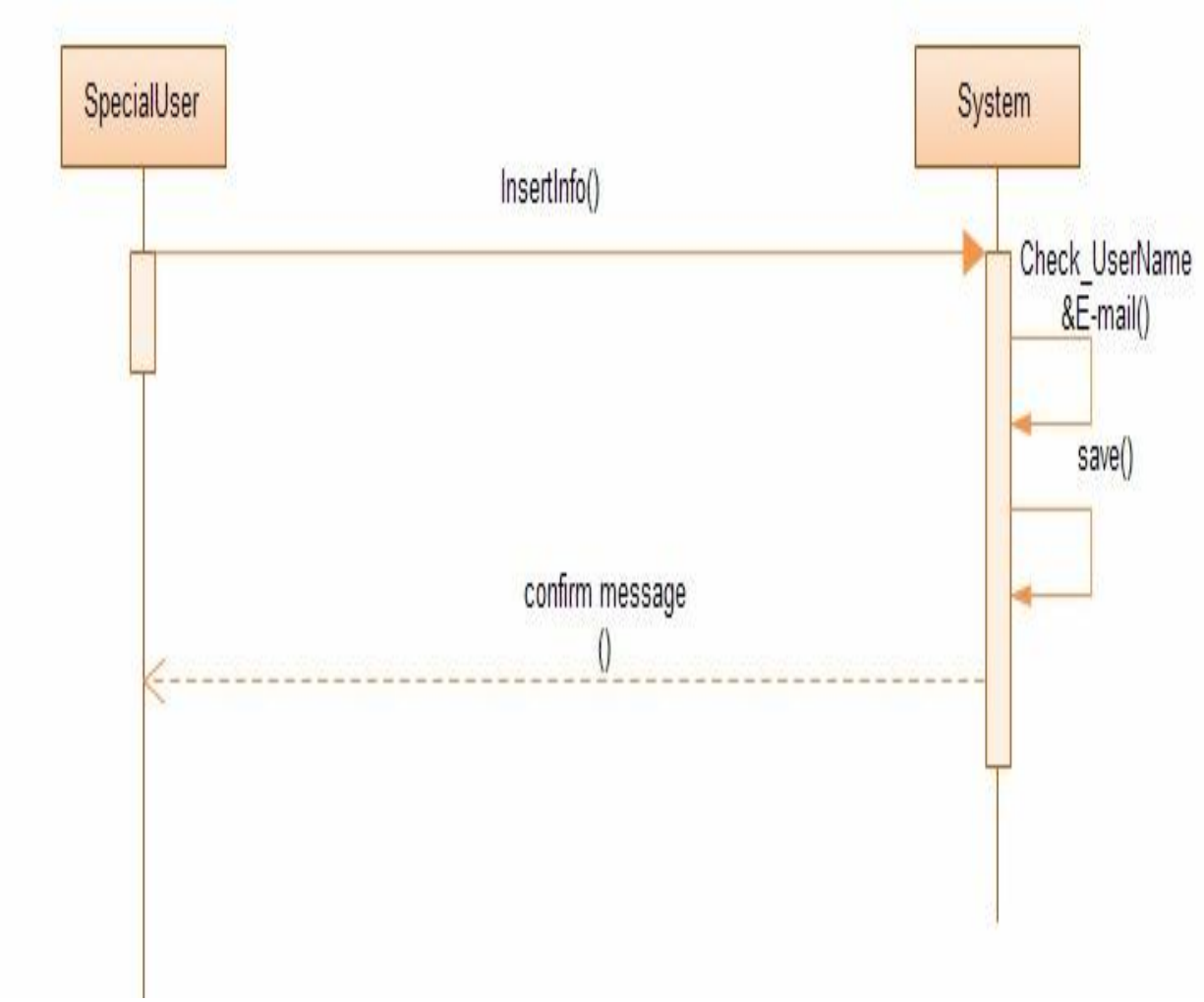


Figure 3.3: registration for Special user

2. Send comment through website

This diagram shows the system sequence diagram for send comment through website.

The special user first login by his username and password the system check the username and the password , the special user select the news he want to comment on it the special user write the comment the system save the comment.

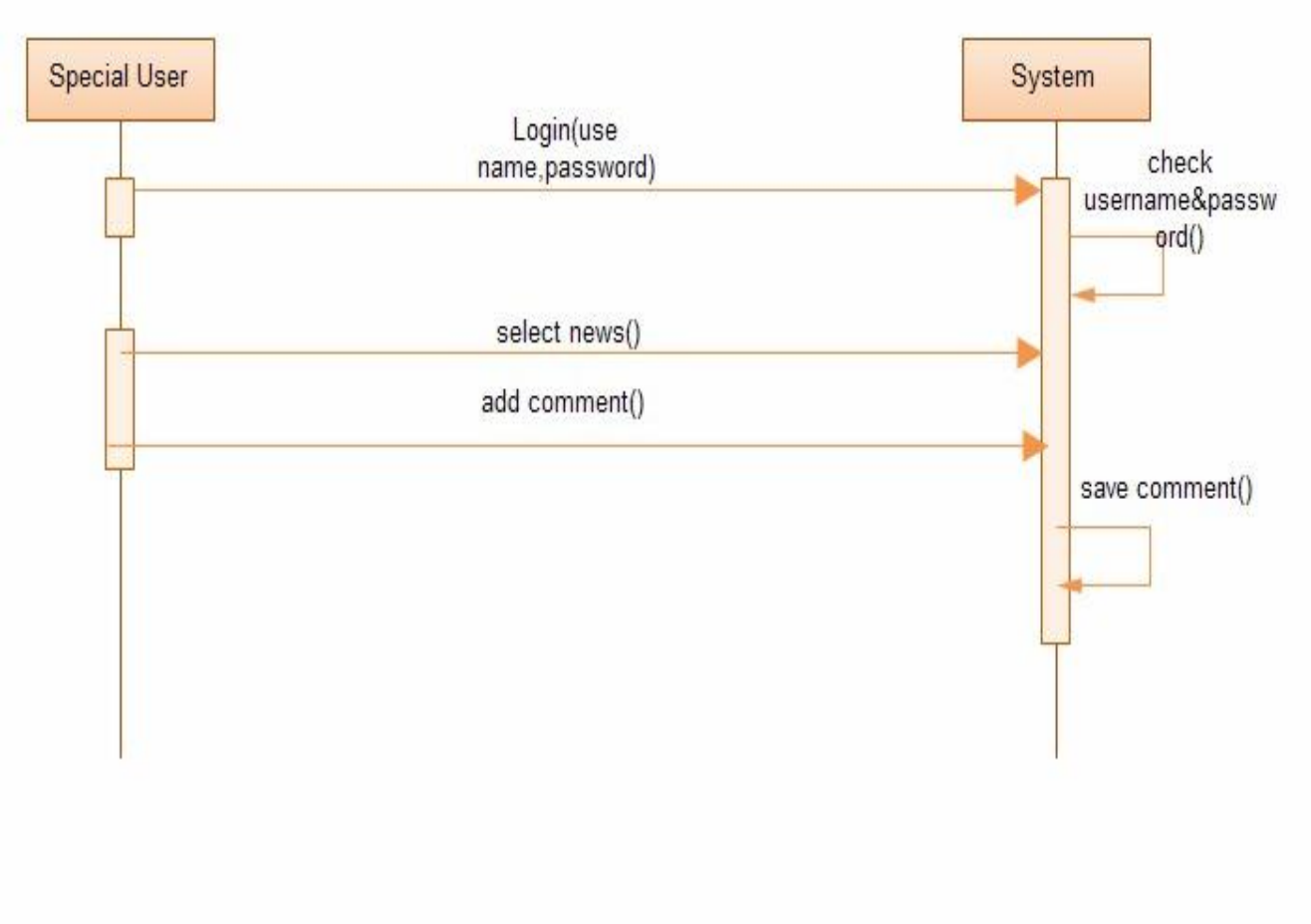


Figure 3.4: Send comment through website

3. Send comment through mobile

This diagram shows the system sequence diagram for send comment through mobile.

the special user first login by his username and password the system check the username and the password the special user select the news he want to comment on it the special user write the comment the system save the comment .

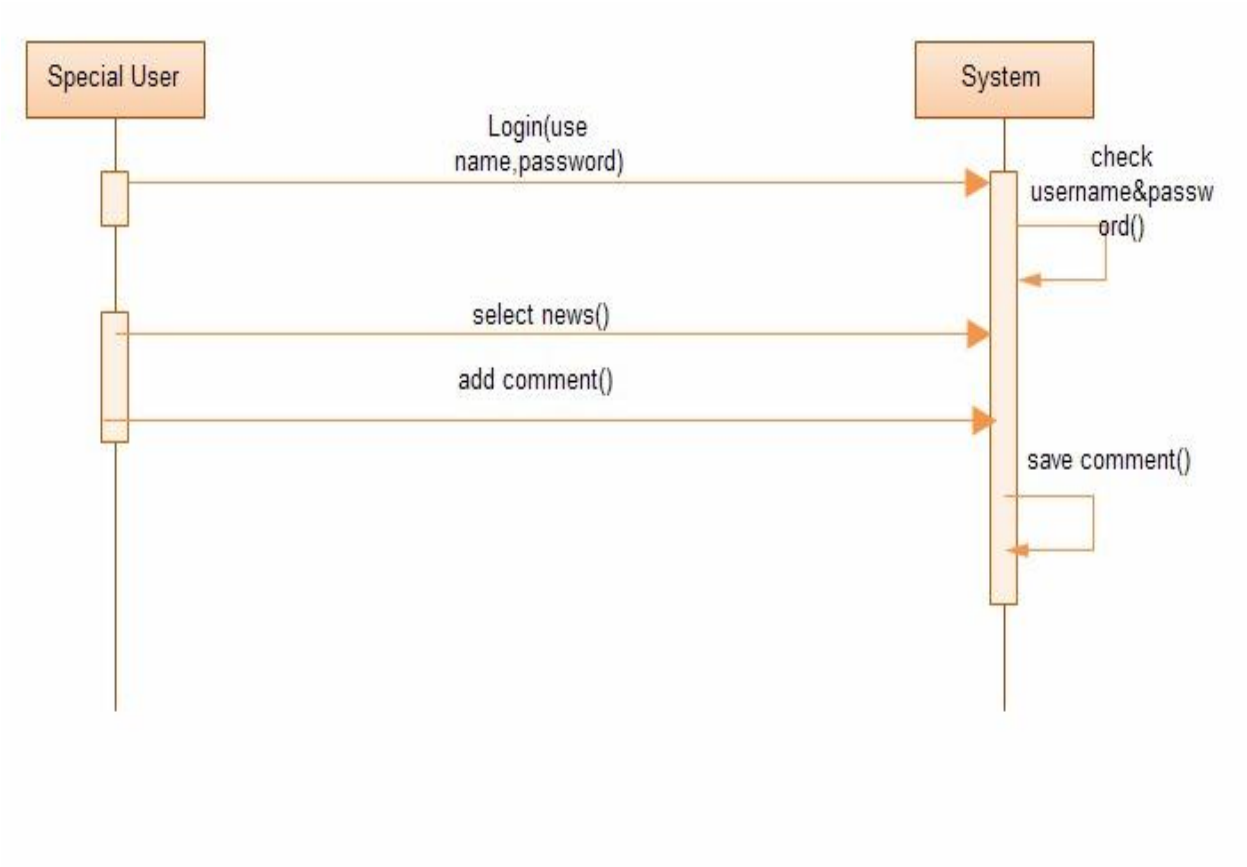


Figure 3.5: Send comment through mobile

4. follow

This diagram shows the system sequence diagram of follow.

the user select the special user list then the system display special user list then they select follow special user then the system save special user ID.

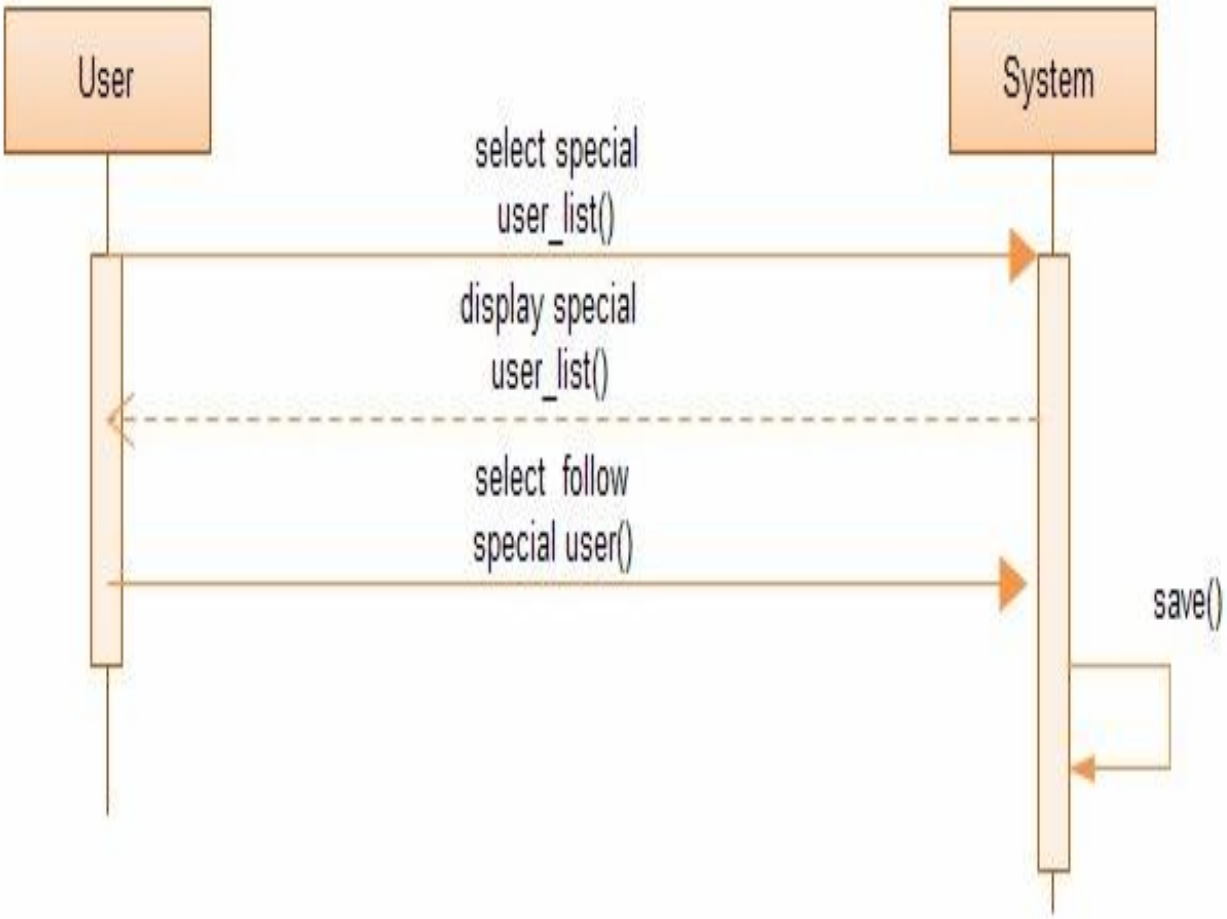


Figure 3.6: Follow

5. Register for user account:

This diagram shows the system sequence diagram for register for user account.

The user inserts his information in the system the system check his E-mail if valid the system saves his information and send him a confirmation message.

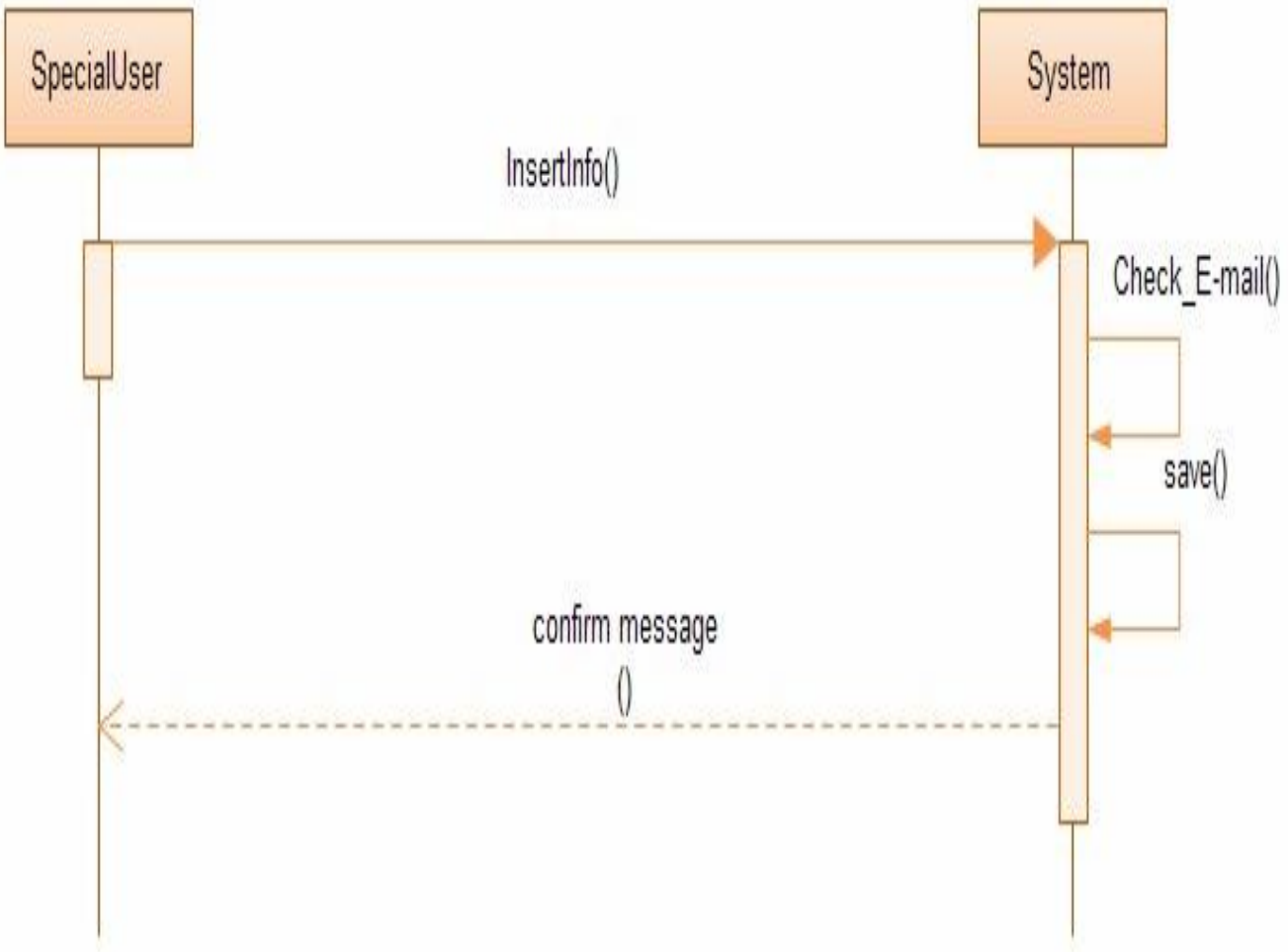


Figure 3.7: Register for user account

6. Approve Special user

This diagram show the system sequence diagram for approves special account.

The admin check if special users make a registration then he approve them after that the system save special user information then the system display to him a confirmation message.

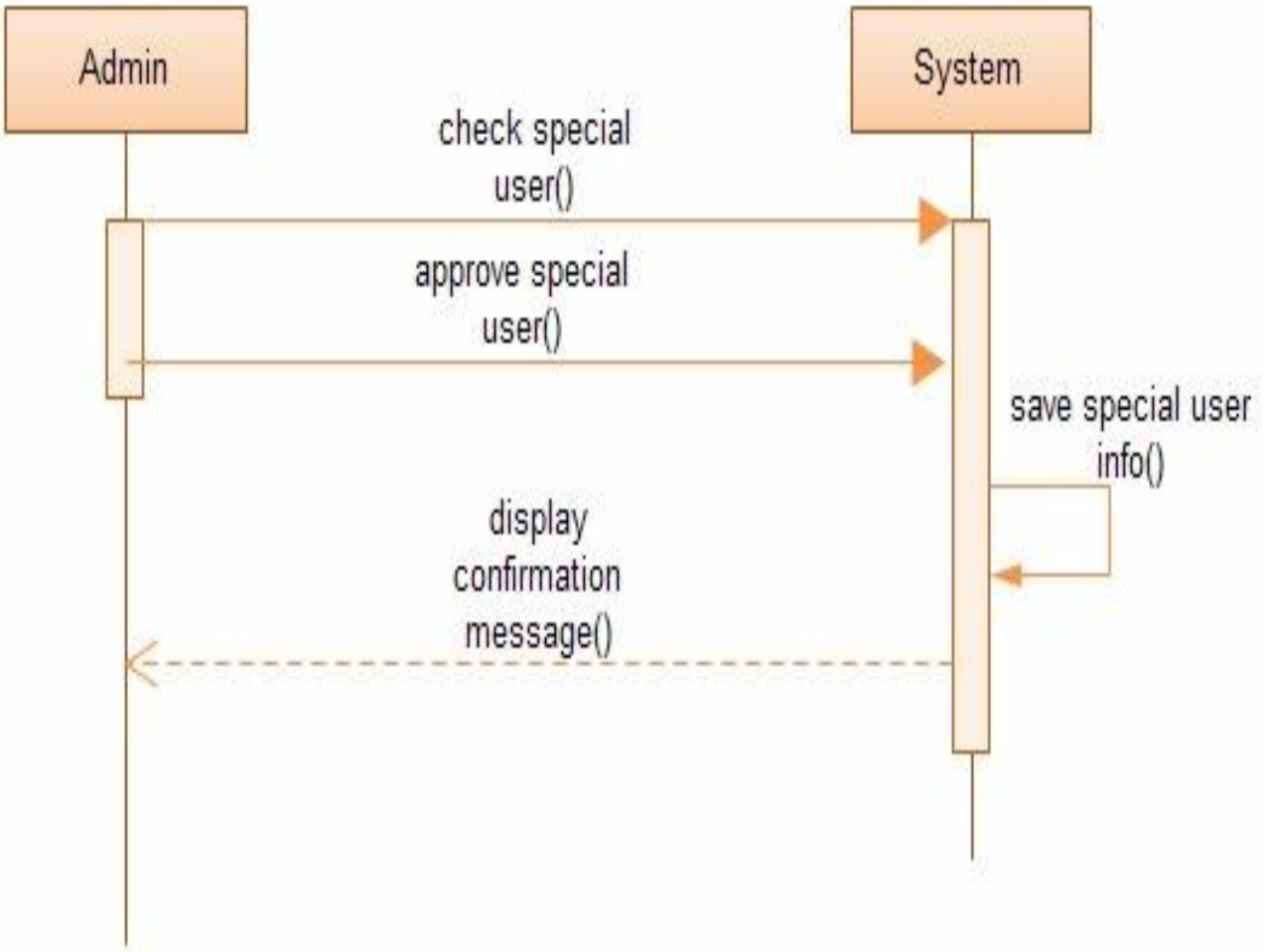


Figure 3.8: Approve Special users

7. Change category

This diagram shows the system sequence diagram for change category.

First the admin check the news in the category if the news is not in there correct category then select the news then select change the news to the new category then select category the system save the news to new category then system display a confirmation message to admin.

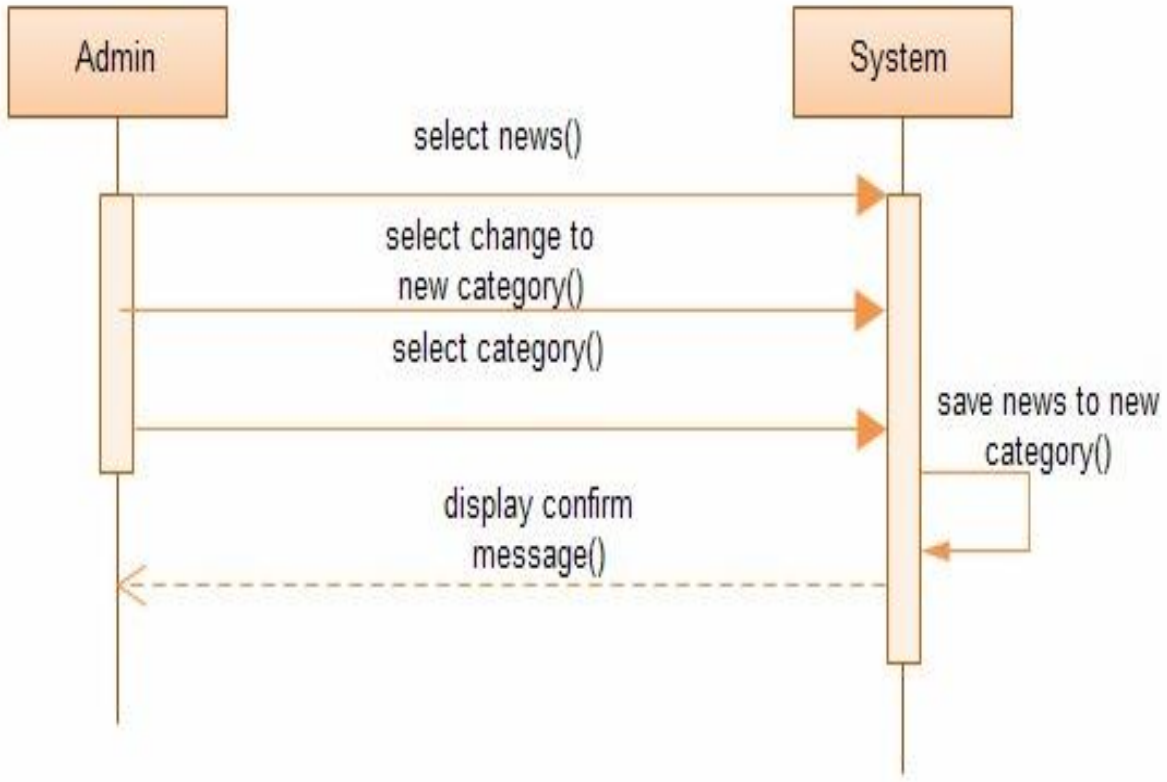


Figure 3.9: Change category

8. Delete User

This diagram shows the system sequence diagram for delete user.
First the admin select the users' list then the system displays users' list then the admin select user then select delete user then the system deletes the user.

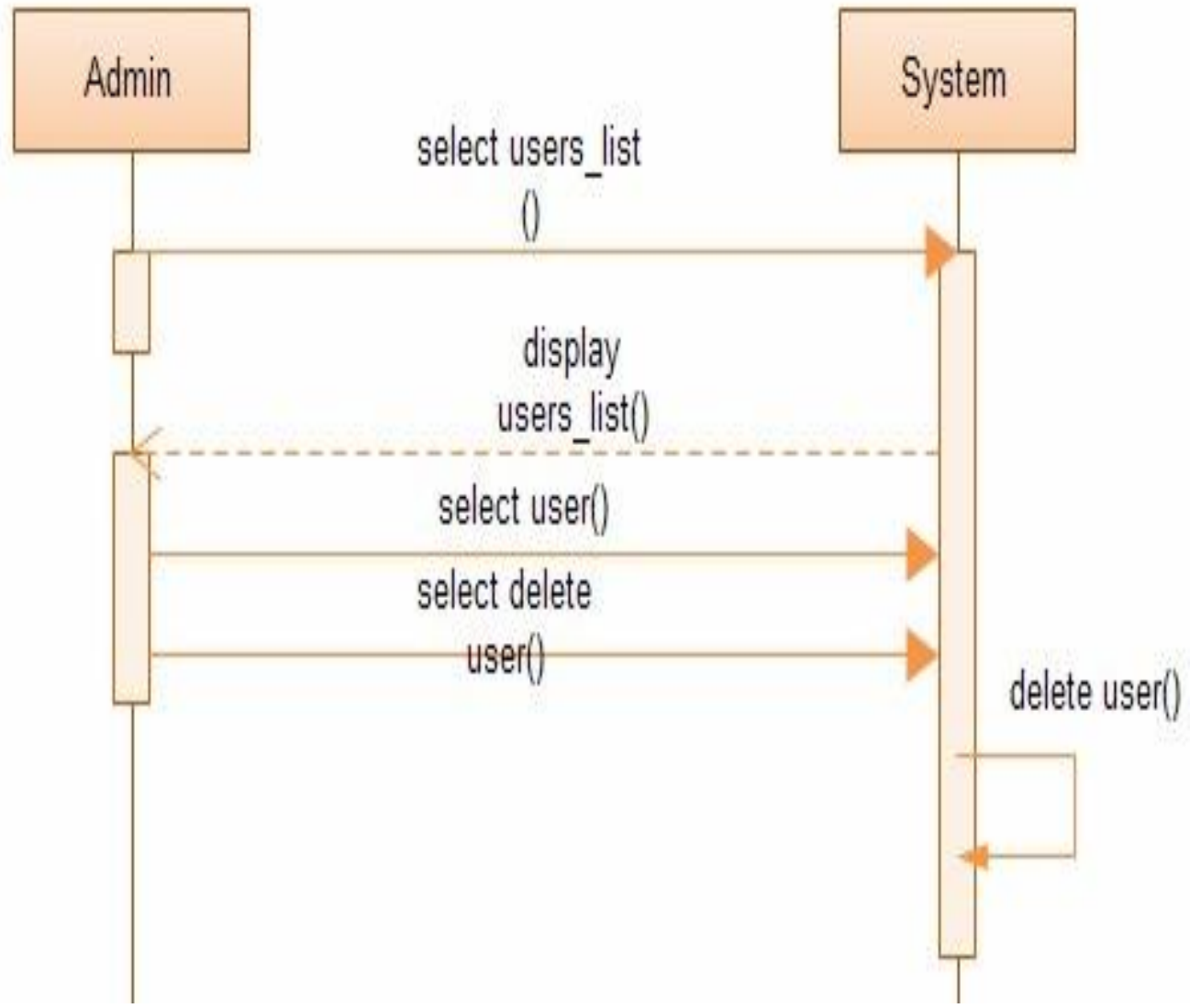


Figure 3.10: Delete User

9. Send message to special user

This diagram shows the system sequence diagram of send message to special user when notification appears.

The system first check new news in database the database returns news the system search related special user the database return related special users then the system send a notification message to these special user's application.

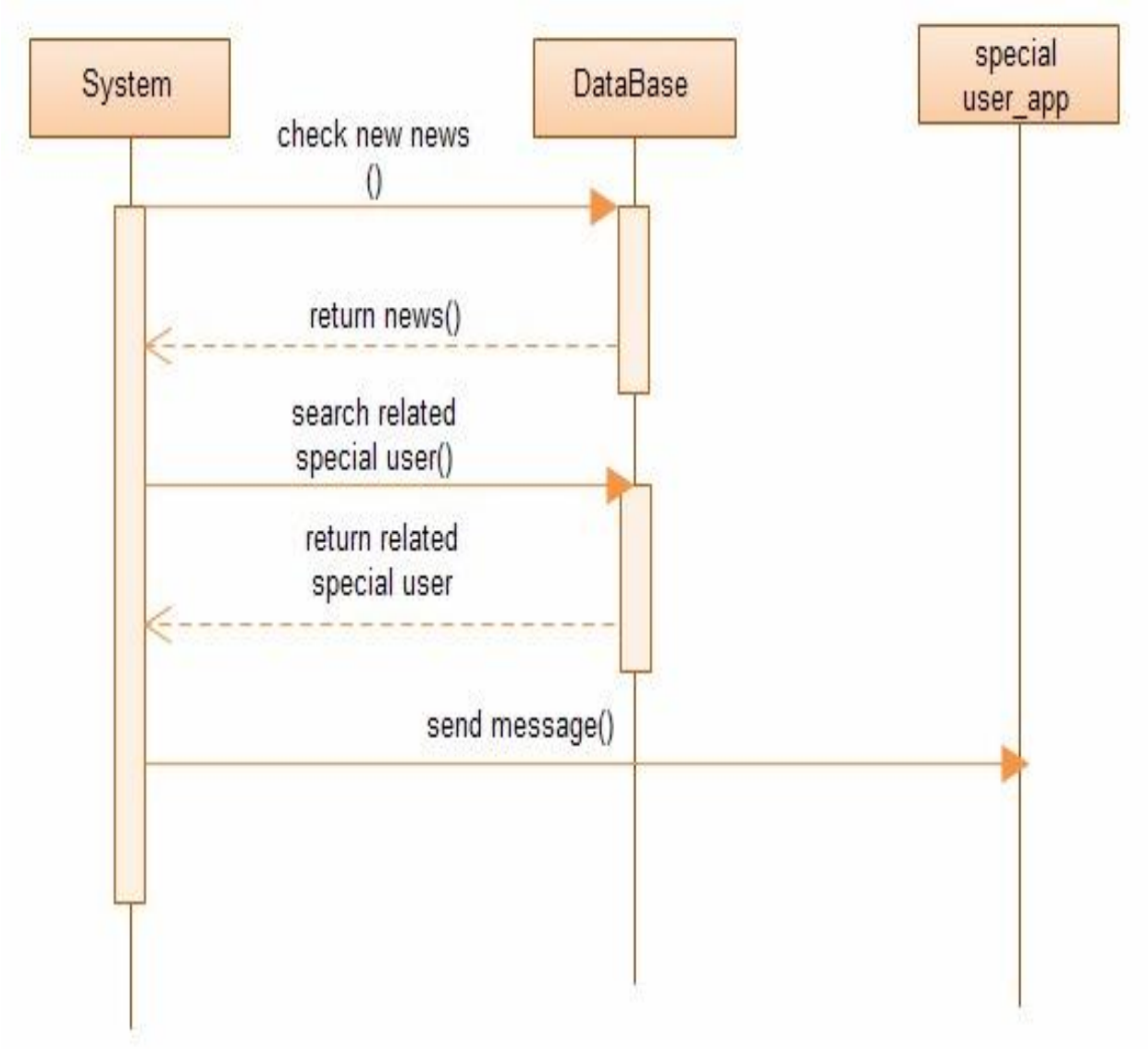


Figure 3.11: Send message to special user

10. Send message to the user (follower)

This diagram shows the system sequence diagram of send message to special user when notification appears.

The system first check new news in database the database return news the system search related special user the database return related special users then the system search the people who follow this special user the database return followed people then the system send a notification message to these users' applications.

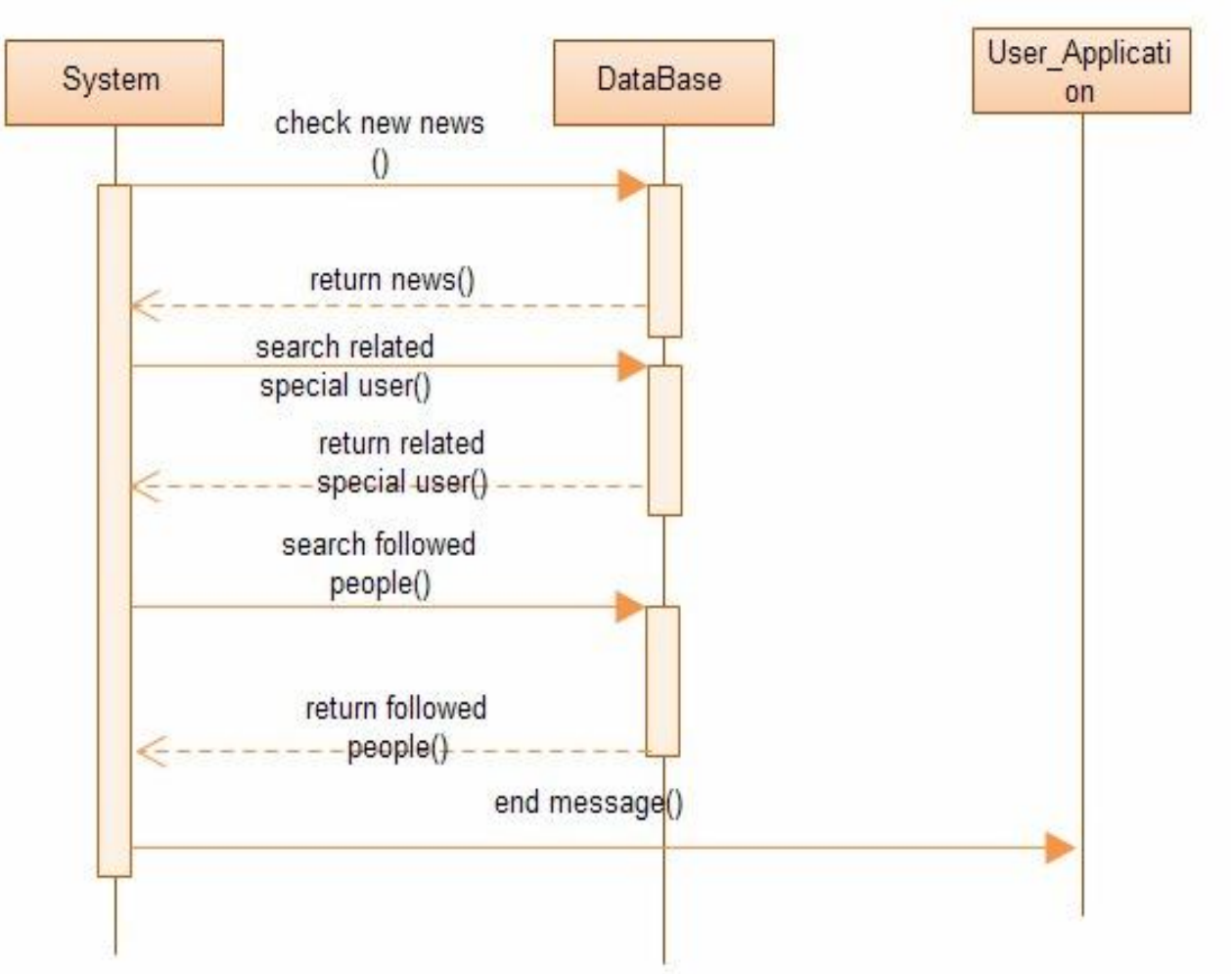


Figure 3.12: Send message to the user (follower)

11. Aggregate data

This diagram show the system sequence diagram of aggregate data the system read RSS then make crawling to data then mine data the system send mining data to database the database save mining data.

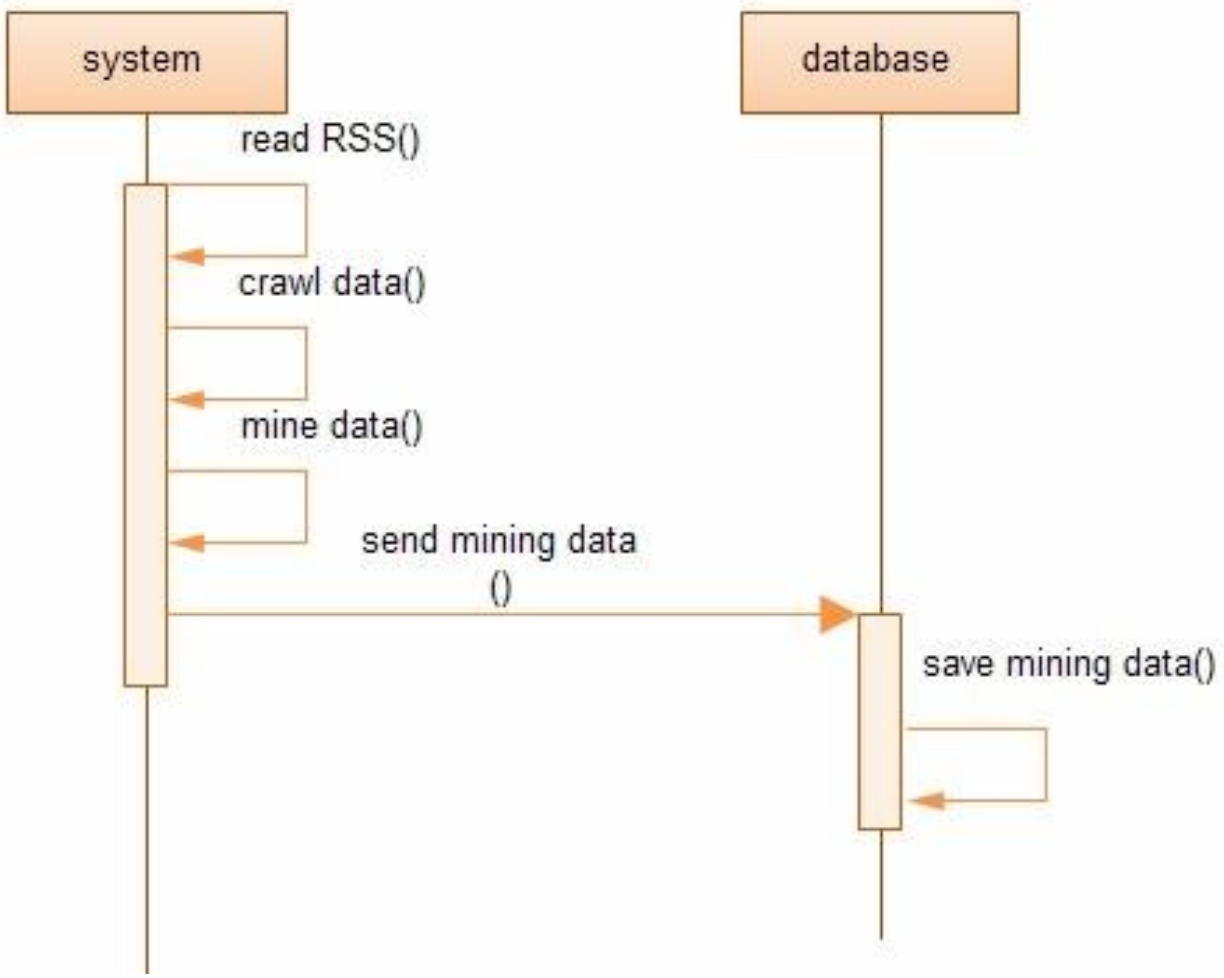


Figure 3.13: aggregate data

12. Evaluate website

This diagram show the system sequence diagram of evaluate website the system evaluate source then the database evaluate news the system display the calculation rate in home page.

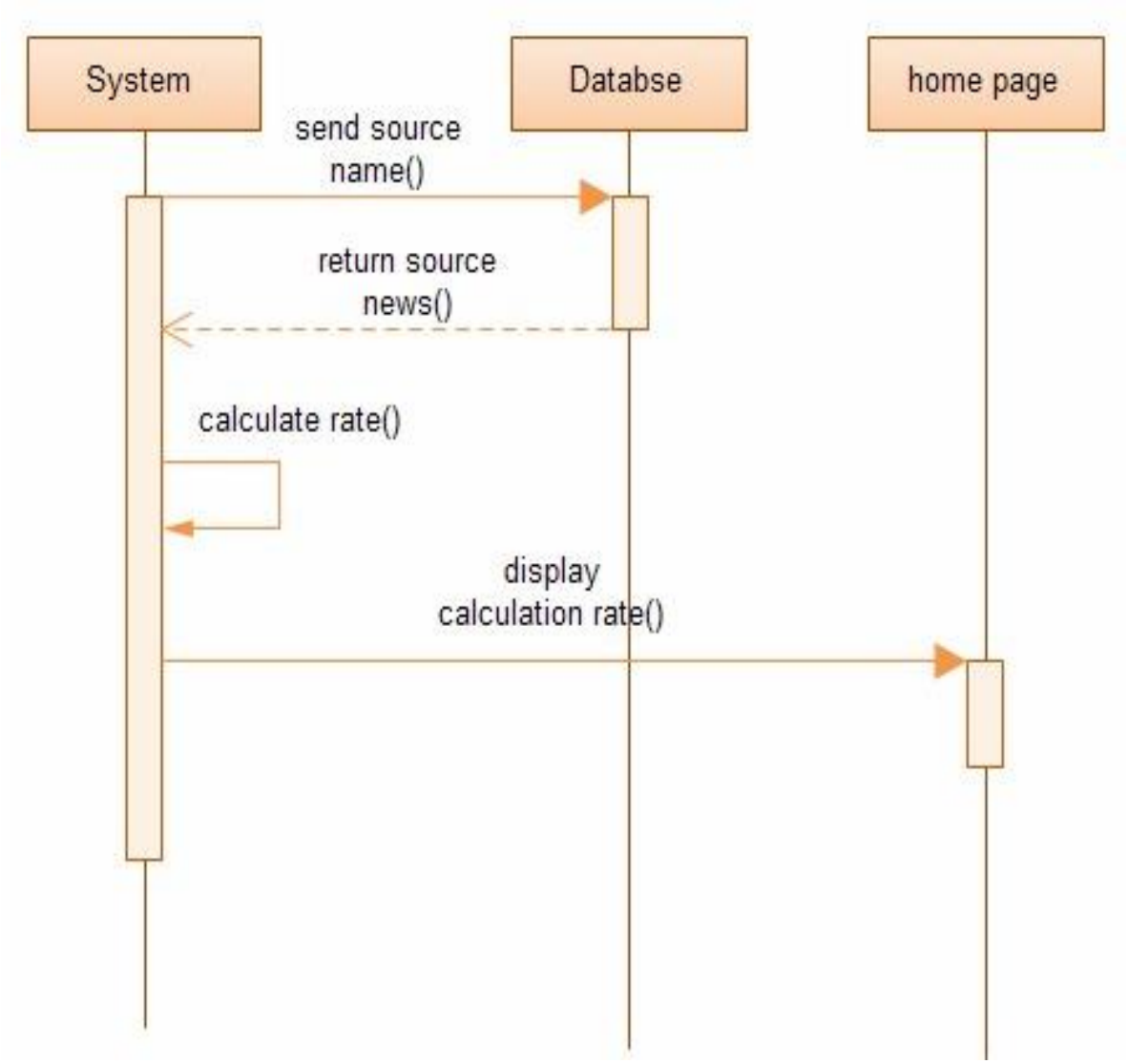


Figure 3.14: Evaluate data

3.5 Summary

This chapter introduced the following:

- The **functional and non-functional requirements** of the system, to know what are the limitations of the system.
- The **use case diagram** that presents a graphical overview of the functionality provided by a system to the user, their goals (use-case), and any dependencies between those use cases.
- The **use case analysis** that describes each use-case in details that will facilitates the implementation of them.
- Finally, the **system sequence diagram** that clarify the relations and interactions between the user and the system.

Chapter 4
"System Design"

4. System Design

Based on the user requirements and the detailed analysis of the system, the system must be designed. The phase of system design is a most crucial phase in the development. As mentioned in the chapter the input, output and processing specifications are drawn up in detail. And the programming language and the platform in which the new system will run are also decided in the form of class diagram, Sequence diagram, and the entity relationship diagram.

4.1 System Architecture

After defining System's features and main functions, we partition and designed this functionalities into modules:

1. Portal:

It takes and collects RSS File as an input from different resources which include the title of the news and the link that news in its source.

2. Crawler:

First, it takes abstract news _incomplete news_ as an input
second it get into the link and crawler the page to get the all full detailed news.

The output of this process is detailed news which include:
news's title, news's body, news's source…..ETC.

3. Mining:

It takes detailed news as an input and apply Cosine similarity algorithm between the news and all stored VIPs' records and get the maximum similarity, then decides if this news related to some VIP or not.

If this news related some VIP, then it's stored in data base with its related VIP.

If not, only the news stored in data with null VIP.

4. Data Base:

It stores all detailed news, information related to users and information of administrators.

It doesn't dealing directly with the interface; it retrieves the data into web service.

It takes data from web service and checks it and retrieves the resulted data to web service again.

Also it make search to required data and retrieve the result to web service to send in to interface to be shown [4].

5. Web service:

It inserts the input data into Data base and also retrieve data from data base to the interface.

It's like a link between the interface and data base.

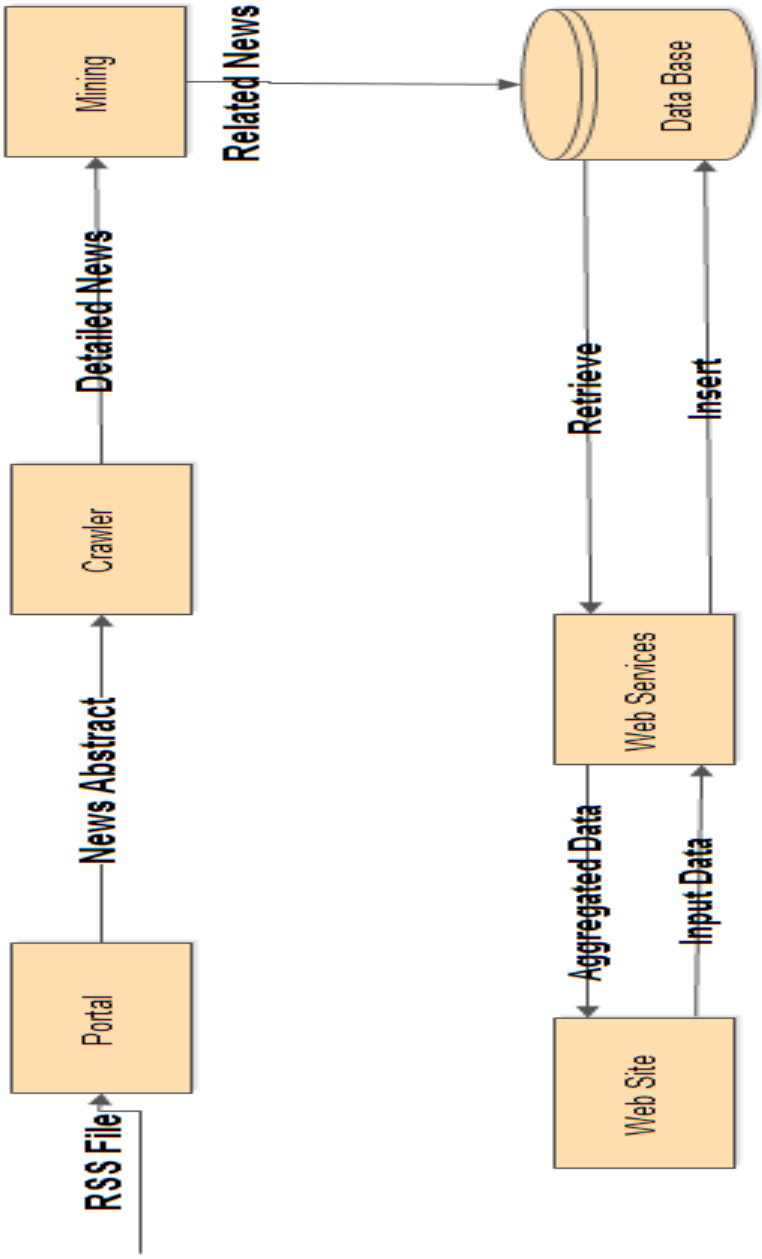


Figure 4.1: System Architecture

4.2 Process Modeling

4.2.1 Sequence Diagram

A sequence diagram in Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart.

A sequence diagram shows, as parallel vertical lines (lifelines), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner.

1- Register for user:

This diagram is show sequence diagram of register for user .The user enter his information in the registration form then the registration form add these information to web service and web service query the database the database check the E-mail of user if it is valid it display to him a confirmation message if not valid it will display to him an error message.

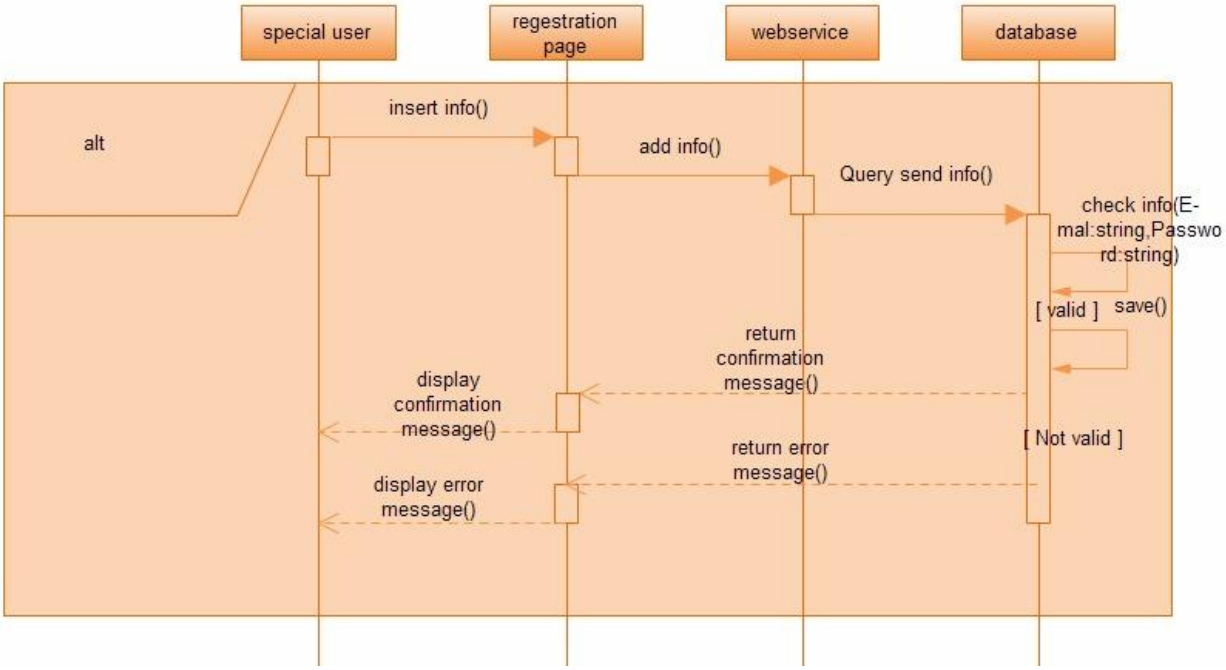


Figure 4.2 Register for user

2- ***Send comment through mobile:***

This diagram show how sequence diagram of send comment through mobile the special user first login he enter his name and password in the login form then add this name and password to web service which query the database then database check them if not valid the database display to him an error message and he enter another name or password again if valid the special user choose the news he want to comment in it then write the comment.

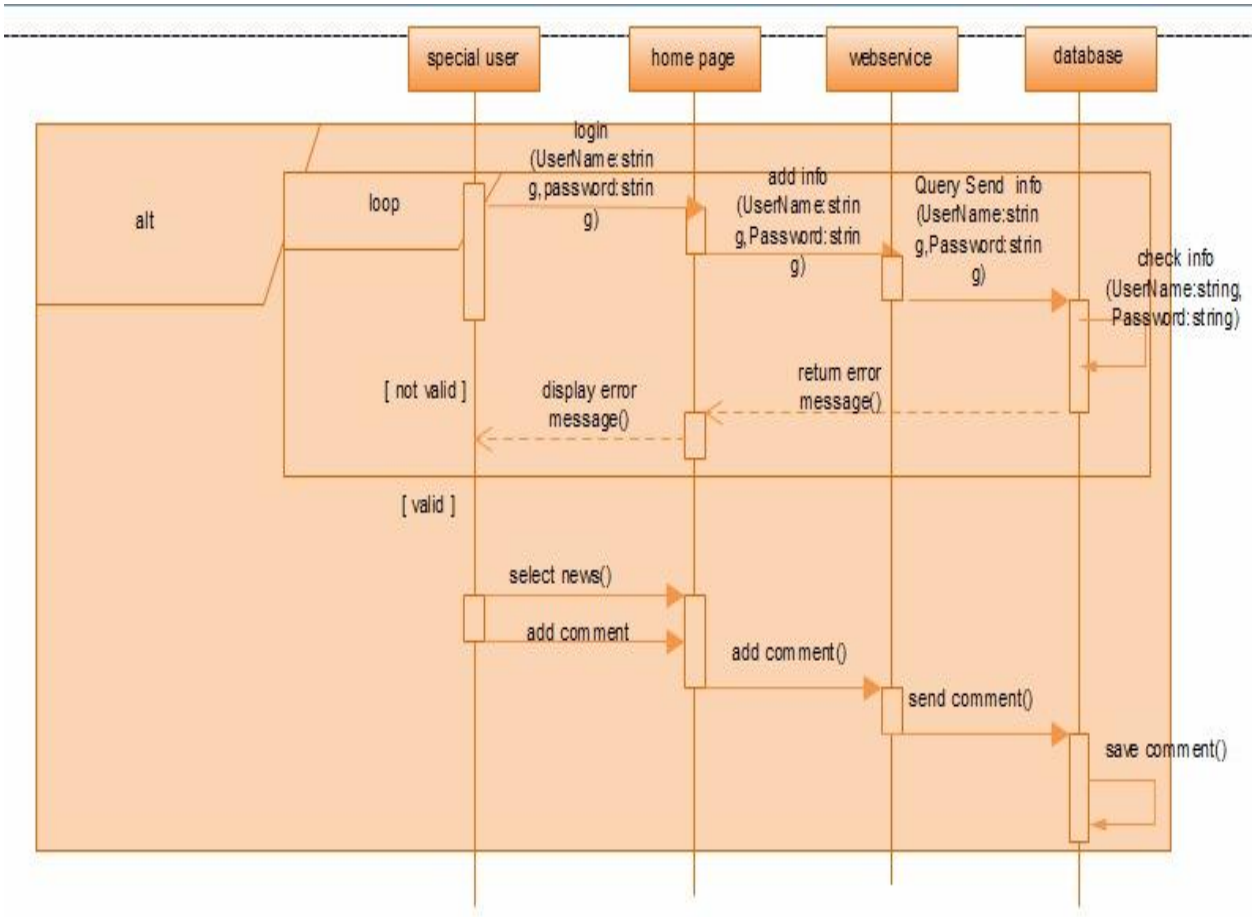


Figure 4.3 Send comment through mobile

3- ***add comment through website:***

This diagram show how sequence diagram of send comment through website the special user first login he enter his name and password in the login form then add this name and password to web service query the database then database check them if not valid the database display to him an error message and he enter another name or password again if valid the special user choose the news he want to comment in it then write the comment.

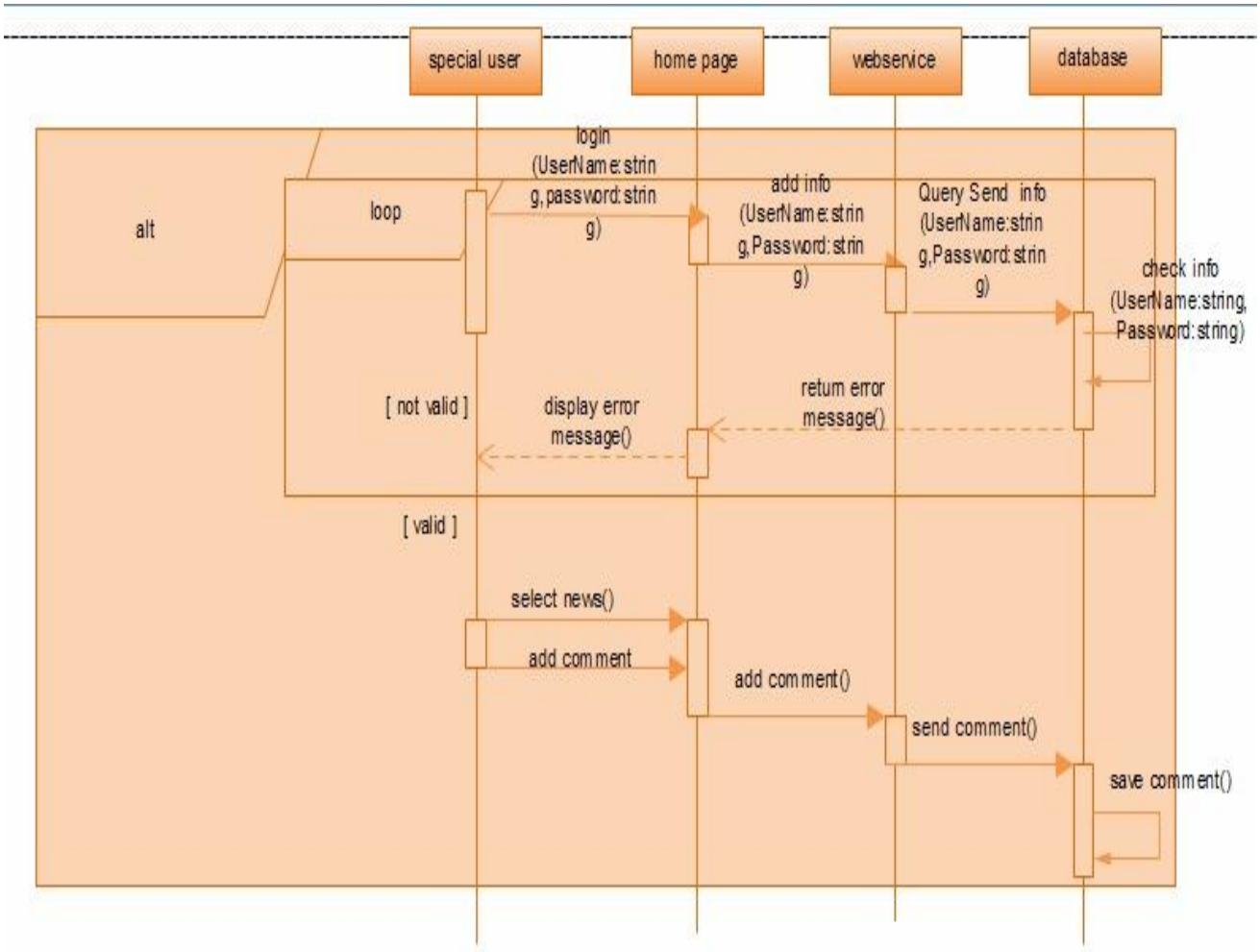


Figure 4.4 Send comment through web site

4- ***Follow:***

This diagram show the sequence diagram of follow the user select show special user then the form display him a list of special user then the user select follow special users then the special user ID will add to web service which send special user's ID to database the database save special user ID.

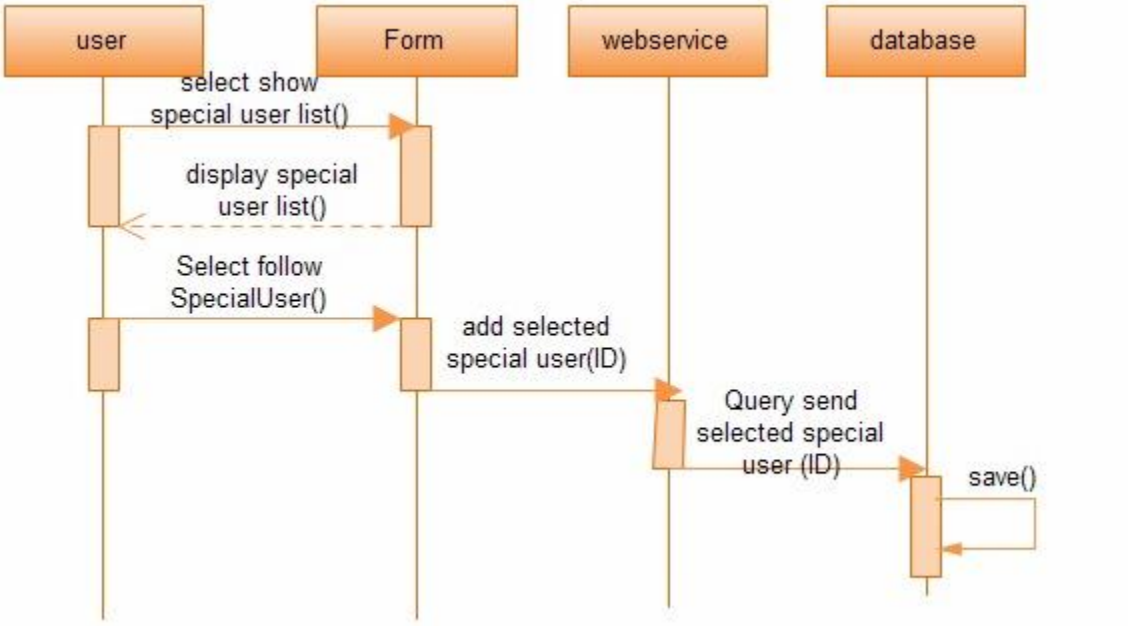


Figure 4.5 Follow

5- ***Change category:***

This diagram show the sequence diagram of change category when the admin select the news he want to change then select change to new category then select category then the news ID will add to web service and web service send news ID to database which save the news to new category then display a confirmation message to admin

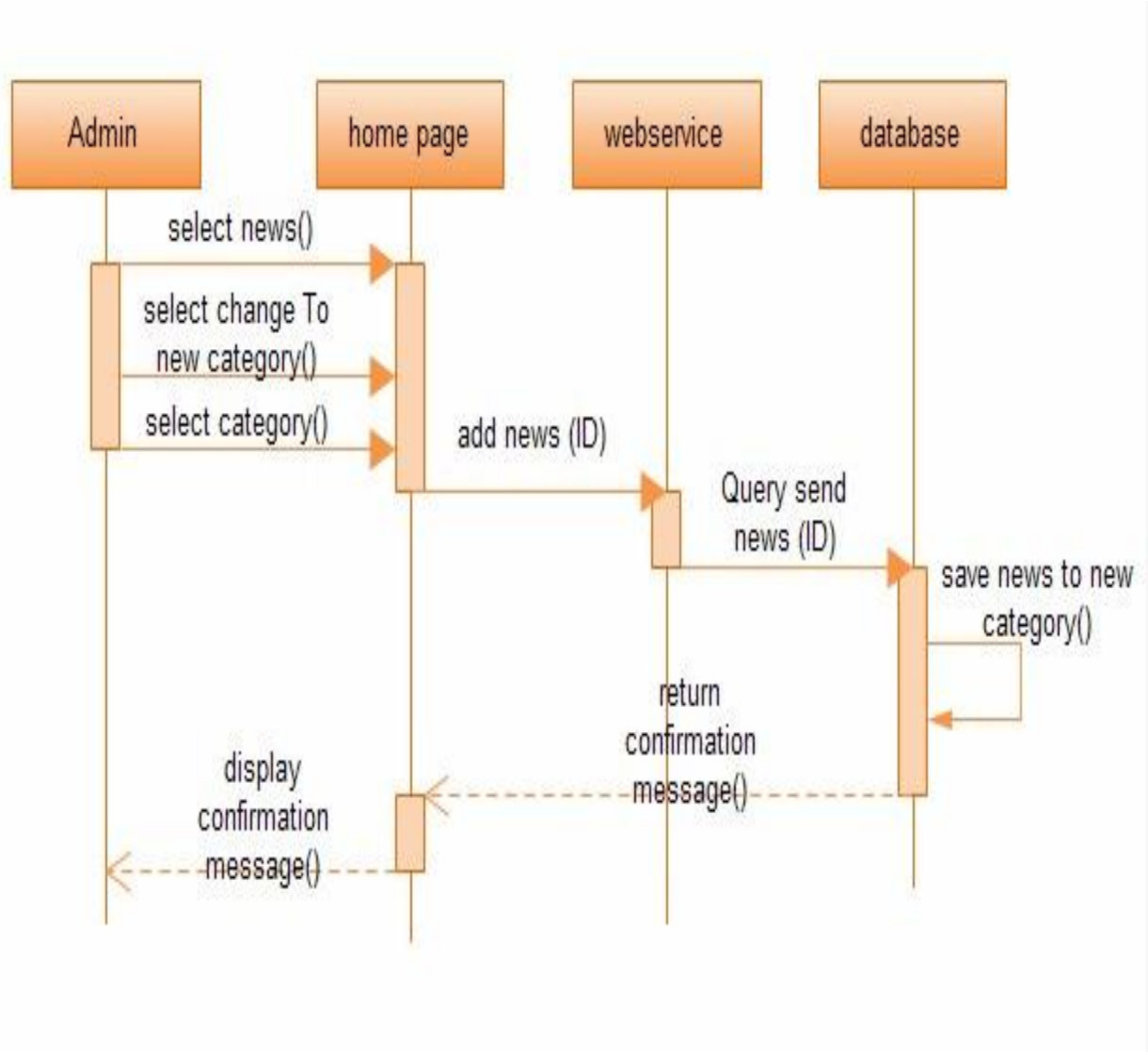


Figure 4.6: Change Category

6- ***Approve Special User:***

This diagram show the sequence diagram of approve special user when the admin check special users who make registration then select approve special user the special user information will add to web service which send this information to database the database save special user information then display him a confirmation message.

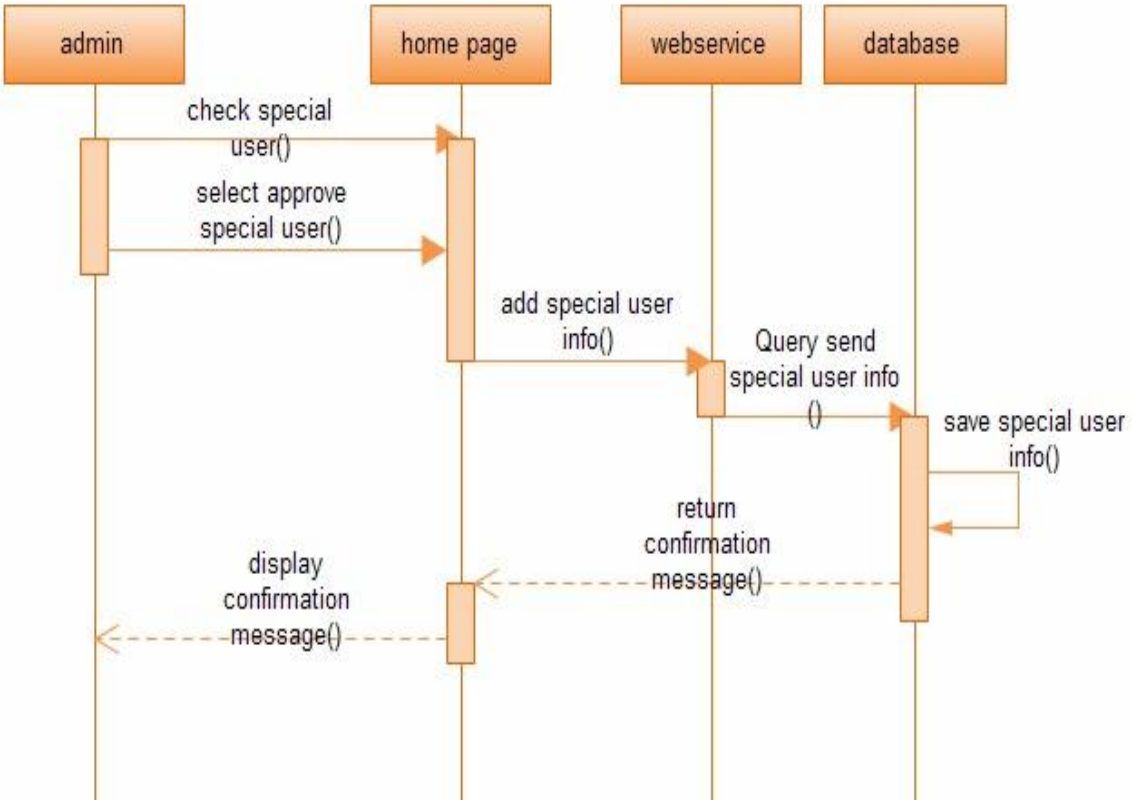


Figure 4.7: Approve Special User

7- ***Delete User:***

This diagram show the sequence diagram of delete user the admin select users' list the form display a list of users' names the admin select user then select delete user then the form will add user ID to web service which send it to database the database delete the user.

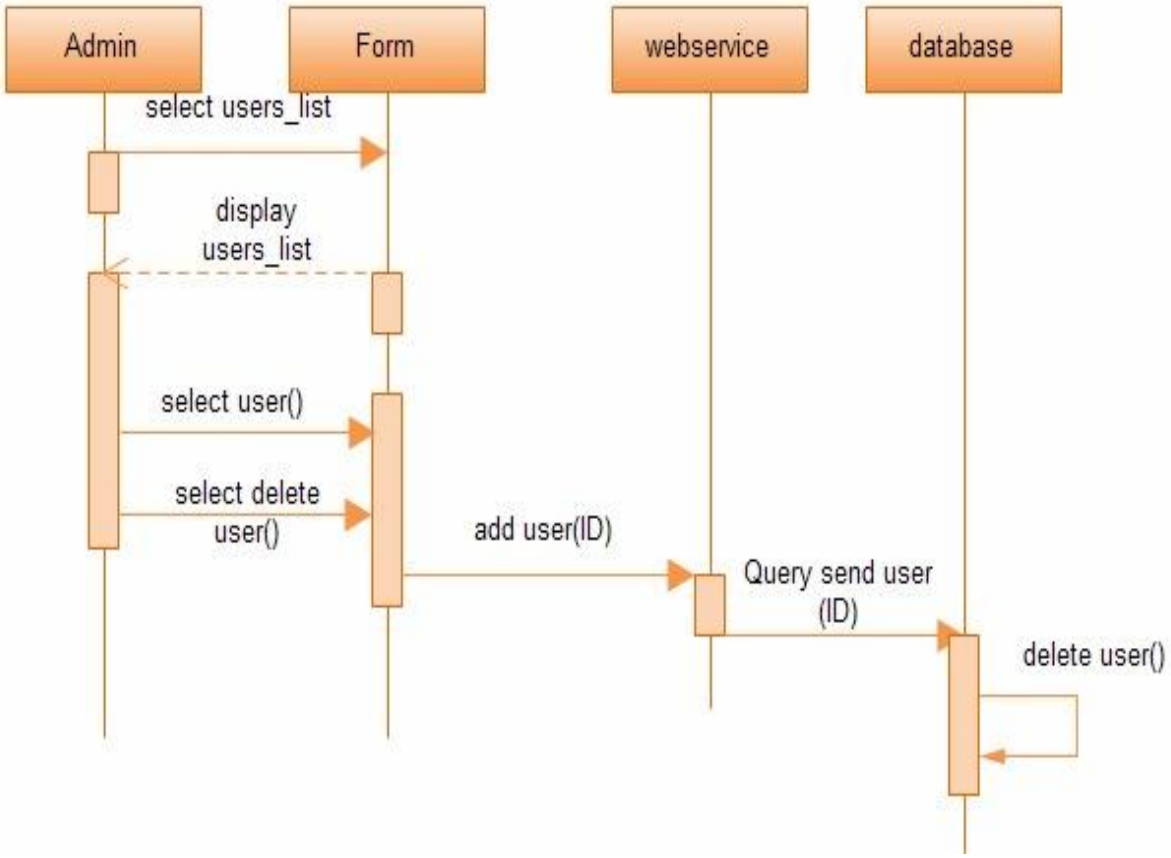


Figure 4.8 Delete User

8- *Send message to special user when notification appears:*

This diagram show the sequence diagram of Send message to special user when notification appears the system check the news in the database if he found news the system search the related special user then send a message of this new to him in his application.

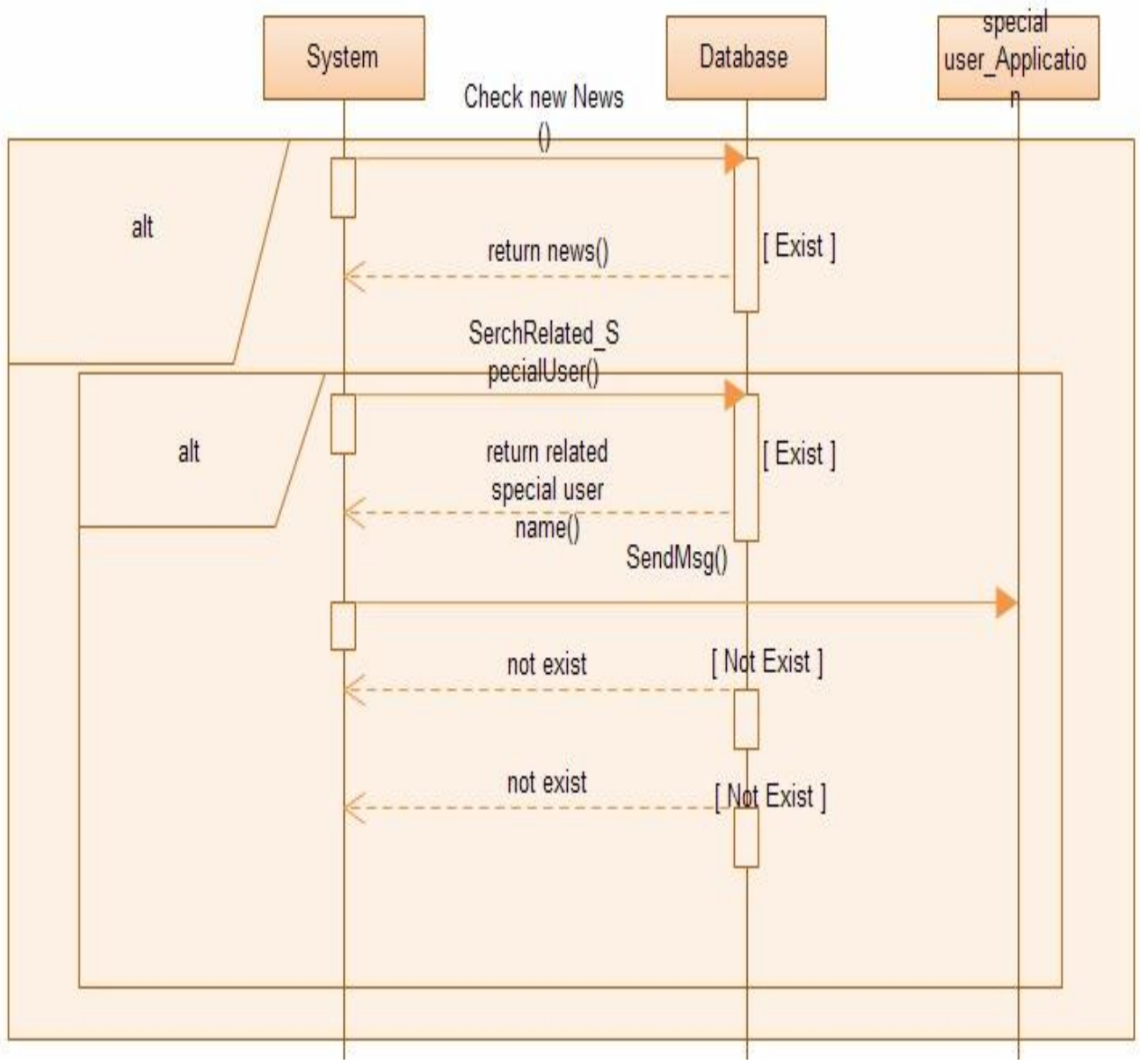


Figure 4.9: Send message to special user when notification appears

9- *Send message to the user when notification appears*

This diagram show the sequence diagram of Send message to user when notification appears the system check the news in the database if he found news the system search the related special user then search followed users then send a message to these users in their application.

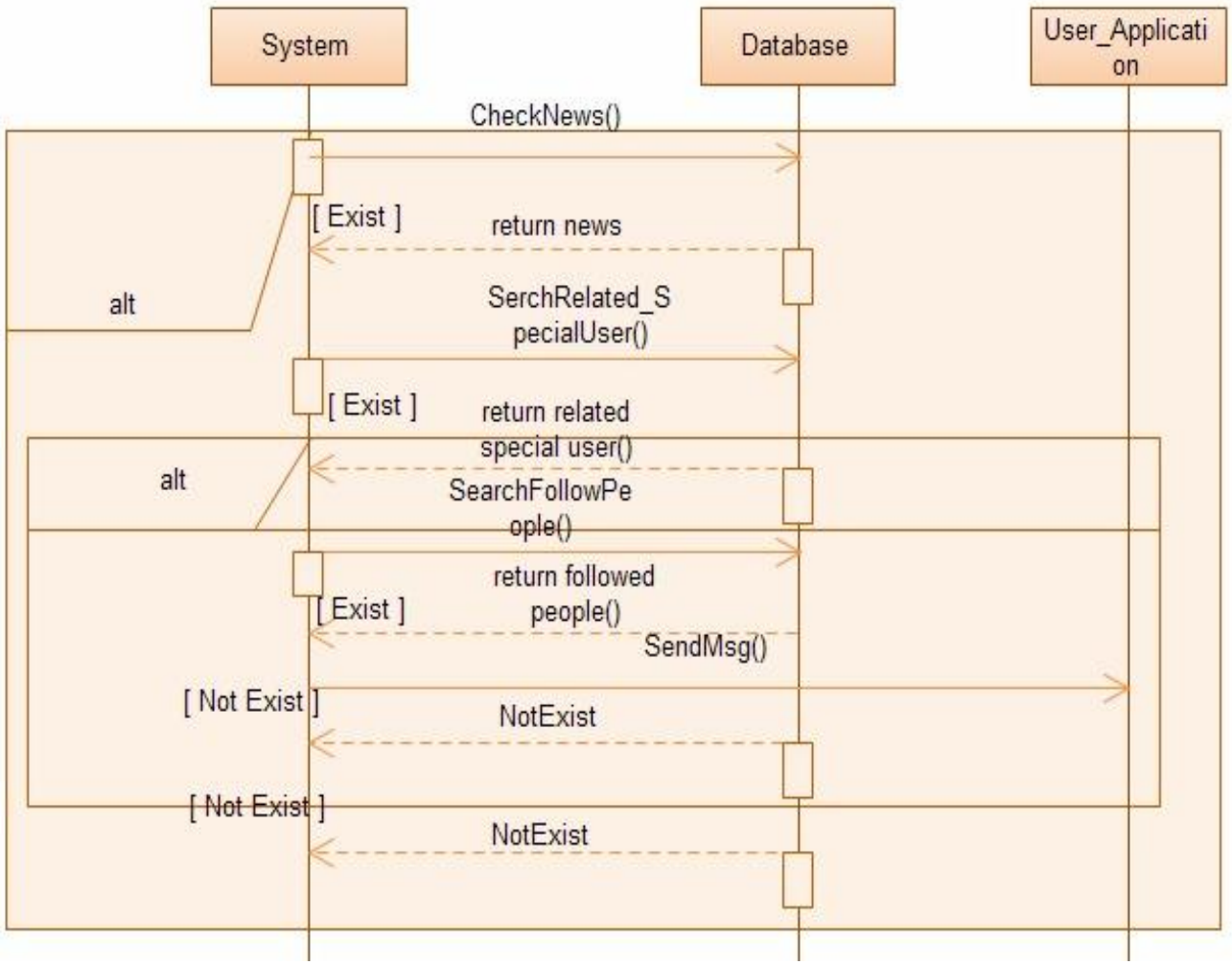


Figure 4.10: Send message to the user when notification appears

10- Aggregate data:

This diagram show the sequence diagram of aggregate data the system read RSS then make crawling to data then mine data the system send mining data to webservice which send it to database the database save mining data.

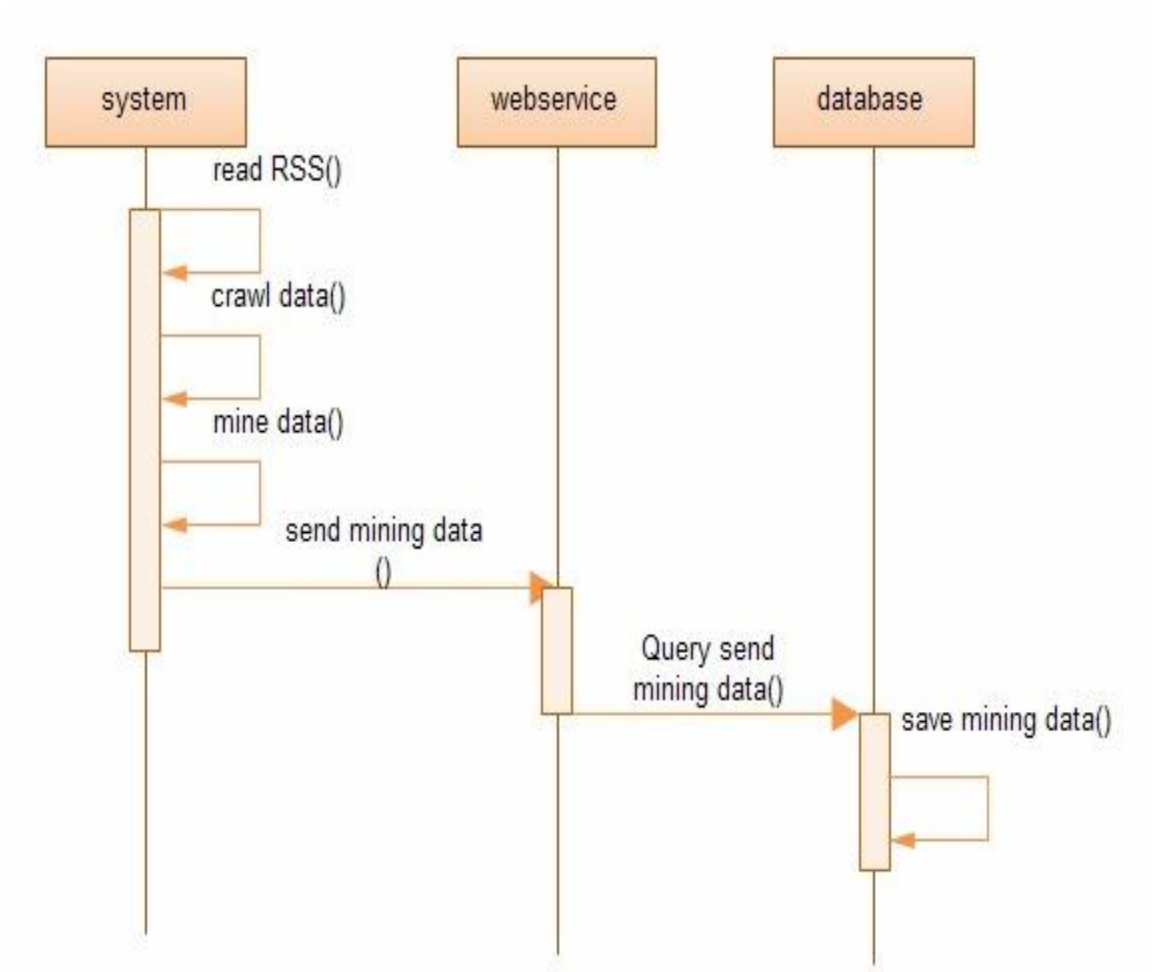


Figure 4.11: Aggregate Date

11- Evaluate website:

This diagram show the system sequence diagram of evaluate website the system send source name to database then database return news then the system calculate rate then display calculation rate to home page.

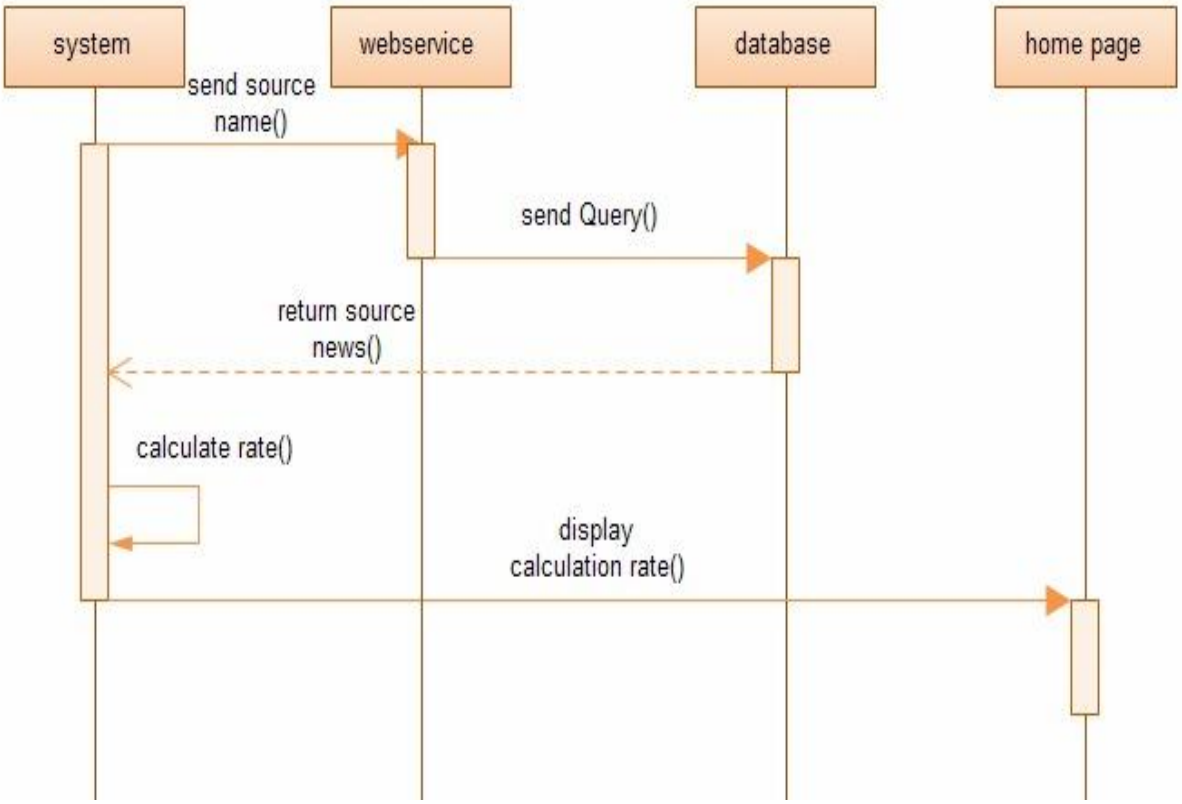


Figure 4.12: Evaluate Date

4.2.2 Class Diagram

Class diagram is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or) methods, and the relationships between the classes. The class diagram is the main building block in object-oriented modeling. It is used both for general conceptual modeling of the systematic of the application, and for detailed modeling translating the models into programming code.

The **Source** class is responsible for collecting all data which aggregated from other resources. It set and gets all data of the resources by using the following functions:

```
set_RSS_Link(string link)
```

- `set_source_name(string name)`
- `get_RSS_Link()`
- `set_description(string des)`
- `get_description()`
- `set_source_name(string name)`
- `get_source_name()`

The attributes of this class are:

-description, its data type is string.

-RSS_link, its data type is string which contains the links of RSS files.

-source_name, its data type is string which contains the names of other sources where we aggregate data from.

There are many classes which inherit from this class. This inherits classes about all resources where we aggregate our data.

The **News** class is responsible for all data of aggregated news. It also set and gets this data uses all this function:

- `Public void set_title(string t): it sets the attribute title.`
- `Public string get_title() : it gets the title of news.`
- `public void set_source(string s)`
- `Public string get_source() :it gets the source of  news.`
- `public void set_image(string img)`
- `Public string get_image() : it gets the image of news.`
- `public void set_description(string desc)`
- `Public string get_description() : it gets the description of news.`
- `public void set_body(string d)`
- `Public string get_body() : it gets the body of news.`
- `public void set_related_VIP(string vip)`

- `string get_related_VIP() : it gets the related VIP of news.`
-
- `public void set_category(string c)`
- `Public string get_category() : it gets the category of news.`
- `public void set_publish_Date(DateTime d)`
- `Public DateTime get_publish_Date() : it gets the date of publishing this news.`
- `public void set_link(string l)`
- `Public string get_link() : it gets the link of news.`

The **web services** class is responsible for all web services which connect data base and it includes this attributes: connection, Data Source, Initial Catalog, Password, User ID.

All web services are detailed described in chapter 5.

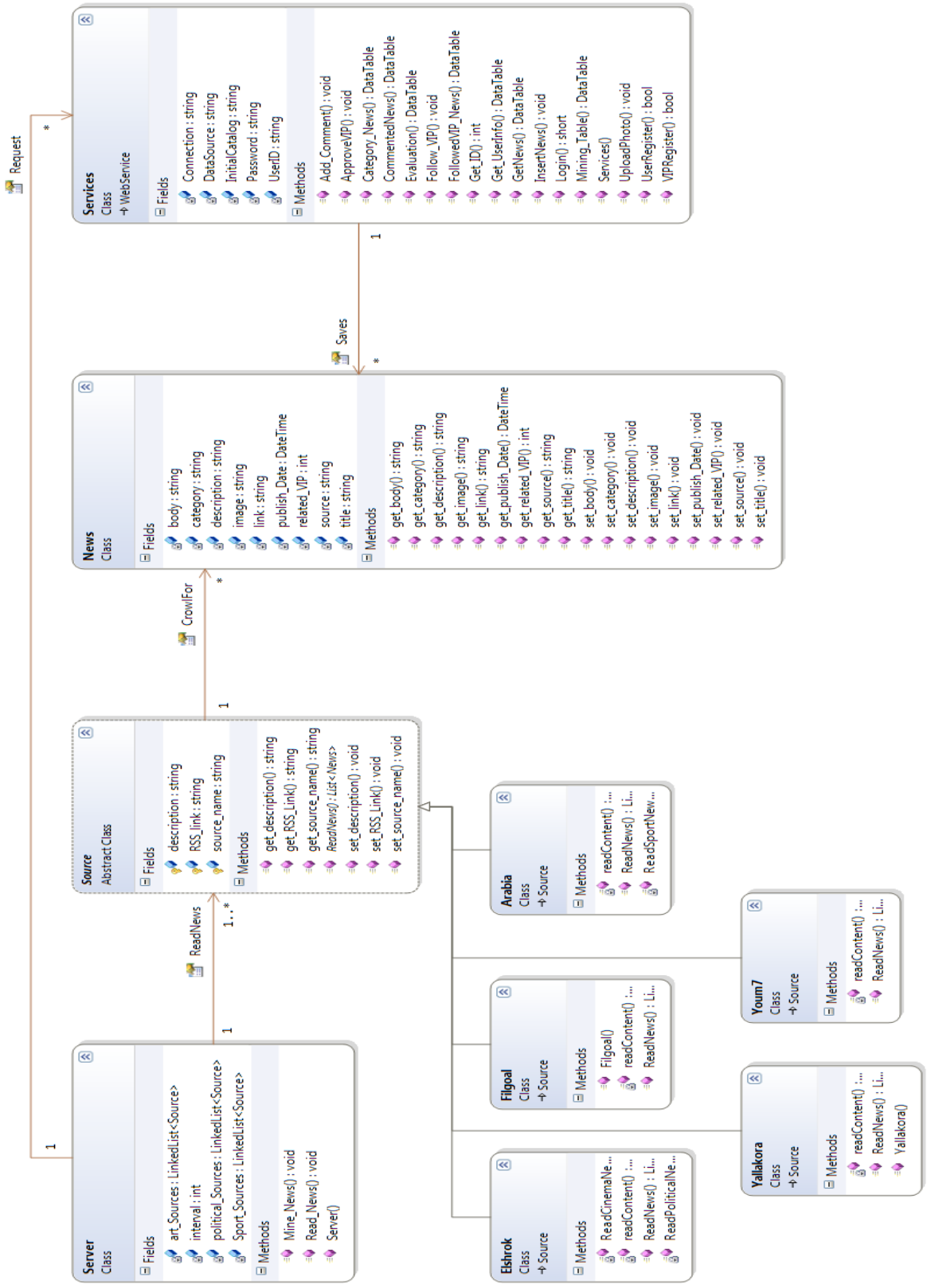


Figure 4.13: Class Diagram

4.3 Data Modeling

Data modeling is the process of creating a data model by applying formal data model descriptions using data modeling techniques. Data modeling is a method used to define and analyze data requirements needed to support the business processes of an organization. The data requirements are recorded as a conceptual data model with associated data definitions.

4.3.1 Entity Relationship Diagram (ERD)

An entity-relationship model (ERM) is an abstract and conceptual representation of data. [4]. Entity-relationship modeling is a database modeling method, used to produce a type of conceptual schema or semantic data model of a system, often a relational database, and its requirements in a top-down fashion. Diagrams created by this process are called entity-relationship diagrams, ER diagrams, or ERDs

The database is composed of four entities, which are:

1. ***Admin:*** This entity represents the data of system administrators for login and its attributes are:

- Admin ID: is an integer value to identify each admin uniquely and it is the primary key of this entity.
- AdminName: is a string value contains admin's name.
- AdminPass: is a string value contains a login password.
- SecretA: is string set by the admin for more security.
- SecretQ: is string set by the admin only.

2. ***User:*** This entity represents the data of the user and its attributes are:

- UserID: is an integer value which identify each user with unique number and it is the primary key of this entity.
- UserName: is a string value contains user's name.
- Pass: is a string value contains a login password.
- SecretA: is string set by the admin for more security.
- SecretQ: is string set by the user only.
- USex: is string identifying user's gender.
- RegisterDate: is time date contain the of user's registration.
- UserEmail: is string contains user's e-mail.
-

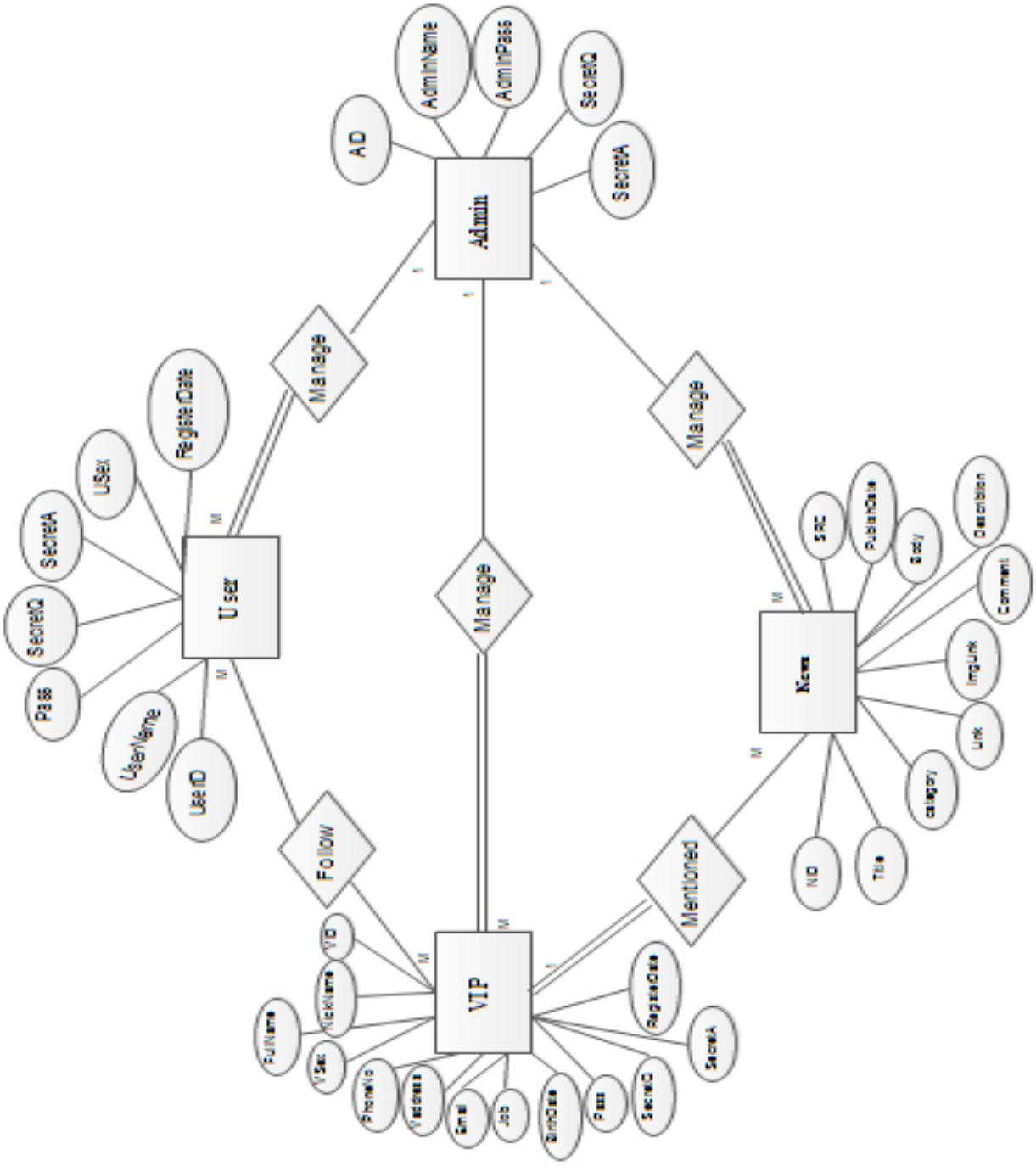
3. ***VIP: :*** This entity represents the data of the special user and its attributes are:

- VID: is an integer value which identify each VIP with unique number and it is the primary key of this entity.
- NickName: is a string contains the VIP's nickname.
- FullName: is a string contains the VIP's real full name.
- VSex: is string identifying VIP's gender.
- PhoneNumber: is a string value represents a VIPs mobile phone number for sending the latest news.
- VAdress: is a string value represents the VIPs' addresses.
- Email: is string contains ViP's e-mail.
- Job: is string contains the job of VIP.
- Birthdate: is date time contains vip's birth date.
- Pass: is a string value contains a login password.
- SecretA: is string set by the admin for more security.
- SecretQ: is string set by the VIP only.
- RegisterDate: is time date contain the of VIP registration date.

4. ***News***

This entity represents the data of aggregated news and its attributes are:

- NID: is an integer value which identify each news with unique number and it is the primary key of this entity.
- Title: is string contains the titles of all news.
- Category: is string contains the category of each news.
- Link: is string contains the link of the news' source.
- ImgLink: is image containing the news images.
- Comment: is string contains the comment of the news' owners.
- Description: is string contains description for the news.
- Body: is string contains the detailed news.
- PublishedDate: is time date containing the date of publishing this news.
- SRC: is string contains the link of the source of published news.


Admin
AD
AdminName
AdminPass
SecretQ
SecretA
Manage
Manage
Manage
User
RegisterDate
USer
SecretA
SecretQ
Pass
UserName
UserID
News
Sec
PublishDate
Story
Description
Comment
ImgLink
Link
Category
NO
Title
Follow
Mentioned
VIP
VID
NickName
FullName
VSex
Phone No
Email
Job
BirthDate
Pass
SecretQ
SecretA
RegisterDate

Chapter 5 "Implementation"

5.1 Implementation

The implementation phase takes the requirements and design phase products and implements them using appropriate technologies. In the case of validation testing, it is during this phase that test cases are completed and automated in preparation for validation testing. Typically, a lot of testing on the early system versions is also performed during this phase, not only to validate the system, but to validate that there are no problems with the test cases themselves.

5.2 Data Mining

The implementation of Data mining

Methods:

- makeTermFrequency(string file)

  This function takes the text which needed to compute term frequency.

  Split text into words and for each word check to not be key word, then compute it's repeated number in all the text.

  Finally return the TF (term frequency).

```
private List<word> makeTermFrequency(string text)
{
      List<word> TF = new List<word>();
      news = text.Split(sperator);
      foreach (string word in news)
      {
            if (!isKeyWord(word) && word != "")
            {
                 if (isNotExist(word, 0, TF, 1))
                   TF.Add(new word(word, 1, 0));
            }
      }
           return TF;
}
```

- **CosSim(List<word> TF1, List<word> TF2)**

  This function takes two term frequency.

  Make new vector and one of the two term frequency, then loop on all words in the another term frequency check if it exist, increment the repeat number of it. If not, add this word in the new vector.

To get at final vector contain each word in the two term frequency and it repeats number in each term frequency.

Then compute the cosine similarity between these two term frequency using this equation cos theta = A.B / ||A|| ||B|| = sum A.B / sqrt sum(a)2 * sqrt sum(b)2

Finally return the cosine similarity value.

```
private double CosSim(List<word> TF1, List<word> TF2)
{
      List<word> TF3 = new List<word>();
      foreach (word w in TF2)
      {
           TF3.Add(w);
      }
      for (int i = 0; i < TF1.Count; i++)
      {
         if (isNotExist(TF1.ElementAt(i).myWord, TF1.ElementAt(i).repeat_file1, TF3, 2))
           TF3.Add(new word(TF1.ElementAt(i).myWord, 0, TF1.ElementAt(i).repeat_file1));
      }
      //cos theta = A.B / ||A|| ||B|| = sum A.B / sqrt sum(a)2 * sqrt sum(b)2

      int sumA_B = 0;
      int sumA2 = 0;
      int sumB2 = 0;

      for (int j = 0; j < TF3.Count; j++)
      {
          sumA_B += (TF3.ElementAt(j).repeat_file1 * TF3.ElementAt(j).repeat_file2);
          sumA2 += (TF3.ElementAt(j).repeat_file1 * TF3.ElementAt(j).repeat_file1);
          sumB2 += (TF3.ElementAt(j).repeat_file2 * TF3.ElementAt(j).repeat_file2);
      }

      double result = sumA_B / (Math.Sqrt(sumA2) * Math.Sqrt(sumB2));

      return result;
}
```

- **makeMining(string text,DataTable vips)**

This function takes the News and VIPs.

Make term frequency to the News and the VIP, then compute the cosine similarity between it.

Compute all similarities of VIPs with News and determine the related VIP from taking the maximum similarity and be over the threshold.

Finally return the related VIP.

```
public string makeMining(string text,DataTable vips)
{
      TF1.Clear();
      TF2.Clear();

      TF1 = makeTermFrequency(text);
      string result = "";
      double maxSim = 0;
      int maxI = 0;
```

```
        try
        {

                for (int i = 0; i < vips.Rows.Count; i++)
                {

                   TF2 = makeTermFrequency(vips.Rows[i]["Record"].ToString());
                   double sim = CosSim(TF1, TF2);

                   if (sim > maxSim)
                   {
                       maxSim = sim;
                       maxI = i;
                   }
                }
                if (maxSim > 0.09)
                {
                   result = vips.Rows[maxI]["Name"].ToString();
                }
                if (result != "")
                    return result;
                else
                    return "non exist";
        }
        catch (Exception ex)
        {
                MessageBox.Show(System.Convert.ToString(ex));
        }
        return "non exist";
}
```

5.3 Information extraction

News is an entity which must be represented by class containing its parameters and operation related to any news in our system [5].

```
publicclassNews
{
privatestring title, source, image, description, body, link, category;
intrelated_VIP;
privateDateTimepublish_Date;

publicvoidset_title(string t)
    {
title = t;
    }
publicstringget_title()
    {
return title;
    }

publicvoidset_source(string s)
    {
source = s;
    }
publicstringget_source()
    {
return source;
    }

publicvoidset_image(stringimg)
    {
image = img;
    }
publicstringget_image()
    {
return image;
    }

publicvoidset_description(stringdesc)
    {
description = desc;
    }
publicstringget_description()
    {
return description;
    }

publicvoidset_body(string d)
```

```
    {
body = d;
    }
publicstringget_body()
    {
return body;
    }

publicvoidset_related_VIP(intvip)
    {
related_VIP = vip;
    }
publicintget_related_VIP()
    {
returnrelated_VIP;
    }


publicvoidset_category(string c)
    {
category = c;
    }
publicstringget_category()
    {
return category;
    }

publicvoidset_publish_Date(DateTime d)
    {
publish_Date = d;
    }
publicDateTimeget_publish_Date()
    {
returnpublish_Date;
    }

publicvoidset_link(string l)
    {
link = l;
    }
publicstringget_link()
    {
return link;
    }

}
```

- We have an abstract class "source" represent the common and basic structure for each source, and inherited by other sources.

```
publicabstractclassSource
{
protectedstringRSS_link;
protectedstring description;
protectedstringsource_name;

publicvoidset_RSS_Link(string link)
    {
RSS_link = link;
    }
publicstringget_RSS_Link()
    {
returnRSS_link;
    }

publicvoidset_description(string des)
    {
description = des;
    }
publicstringget_description()
    {
return description;
    }

publicvoidset_source_name(string name)
    {
source_name = name;
    }
publicstringget_source_name()
    {
returnsource_name;
    }

publicabstractList<News>ReadNews();

}
```

Read the news from Filgoal's RSS

-Filgoal class inherits from source base class, and the construction first initialize the RSS_Link with the default RSS link in the website.

```
publicFilgoal()
    {
        set_RSS_Link("http://rss.filgoal.com/arabic/newsrss.aspx?SecID=1");


    }
```

-Reading the RSS feeds which can be done by two methods

- The default one which uses the default RSS initialized by the constructor

- The overloaded method `publicList<News>ReadNews(string RSS)` Which take the RSS link as a parameter?

```
override
publicList<News>ReadNews()
    {
List<News>NewsList = newList<News>();
XmlTextReader reader = newXmlTextReader(RSS_link);
DataSet ds = newDataSet();

// Reads the xml into the dataset
ds.ReadXml(reader);
for (int i = 0; i <ds.Tables[3].Rows.Count; i++)
        {
News temp = newNews();
temp.set_title(ds.Tables[3].Rows[i].ItemArray[0].ToString());
temp.set_link(ds.Tables[3].Rows[i].ItemArray[2].ToString());

temp.set_publish_Date(DateTime.Parse(ds.Tables[3].Rows[i].ItemArray[3].ToStri
ng()));

temp.set_description(ds.Tables[3].Rows[i].ItemArray[1].ToString());

temp.set_body(readContent(ds.Tables[3].Rows[i].ItemArray[2].ToString()));

temp.set_source("filgoal");
temp.set_category("sports");
```

```
stringdesc = ds.Tables[3].Rows[i].ItemArray[1].ToString();
int start = desc.IndexOf("<imgsrc=\"");
start += 10;
int length = 0;

length = desc.IndexOf("align=\"right\"",17);
length -= 29;
stringimg = desc.Substring(start, length);
temp.set_image(img);

NewsList.Add(temp);


        }
returnNewsList;
    }
```

```
publicList<News>ReadNews(string RSS)
    {
List<News>NewsList = newList<News>();
XmlTextReader reader = newXmlTextReader(RSS);
DataSet ds = newDataSet();

// Reads the xml into the dataset
ds.ReadXml(reader);
for (int i = 0; i <ds.Tables[3].Rows.Count; i++)
        {
News temp = newNews();
temp.set_title(ds.Tables[3].Rows[i].ItemArray[0].ToString());
temp.set_link(ds.Tables[3].Rows[i].ItemArray[2].ToString());

temp.set_publish_Date(DateTime.Parse(ds.Tables[3].Rows[i].ItemArray[3]
.ToString()));

temp.set_description(ds.Tables[3].Rows[i].ItemArray[1].ToString());

temp.set_body(readContent(ds.Tables[3].Rows[i].ItemArray[2].ToString()
));
temp.set_source("filgoal");
temp.set_related_VIP(0);
temp.set_category("sports");

stringdesc = ds.Tables[3].Rows[i].ItemArray[1].ToString();
int start = desc.IndexOf("<imgsrc=\"");
start += 10;
int length = 0;

length = desc.IndexOf("align=\"right\"", 17);



//end -= 23;
length -= 29;
stringimg = desc.Substring(start, length);
temp.set_image(img);

NewsList.Add(temp);
```

```
▼<description>
 ▼<![CDATA[
   <p align="right"><img src="http://betaimages.filgoal.com/images/newspics/medium/168328213716.jpg" align="right" />البدري المدير الفني للأهلي أن الحديث
   في الوقت الحالي عن انضمام عدد من لاعبي الأحمر لصفوف المنتخب الأوليمبي يضر بمصلحة فريقه قبل مواجهة مازيمبي.</p>
  ]]>
 </description>
```

Most of the RSS Feeds not provide a direct link for the news image like the following

So we have to extract it, the following code do that

```
stringdesc = ds.Tables[3].Rows[i].ItemArray[1].ToString();
int start = desc.IndexOf("<imgsrc=\"");
start += 10;
int length = 0;

length = desc.IndexOf("align=\"right\"",17);



//end -= 23;
length -= 29;
stringimg = desc.Substring(start, length);
```

-The following part is responsible for extracting news content from the source website

```
privatestringreadContent(stringurl)
    {

WebRequestwbrq;
WebResponsewbrs;
stringstrURL;
stringstrResult;
StreamReadersr;
strURL = url;
wbrq = WebRequest.Create(strURL);
wbrq.Method = "GET";
wbrs = wbrq.GetResponse();
sr = newStreamReader(wbrs.GetResponseStream());
strResult = sr.ReadToEnd().Trim();
sr.Close();

intstart_position = strResult.IndexOf("<div id=\"ctl00_cphFilGoalMain_pnlNewsBody\">");

start_position += 43;
string temp = strResult.Substring(start_position);
intend_position = temp.IndexOf("</div>");

returnstrResult.Substring(start_position, end_position);
    }
```

- We read all other sources using these methods, taking into account the order of each RSS feeds.

- On the other hand, we have to collect all news from all sources and call web service which store them in database, the following part do that

```
publicvoidRead_News()
    {

Services s = newServices();

Filgoal F = newFilgoal();
List<News> L = newList<News>();
        L = F.ReadNews();

Yallakora Y = newYallakora();
L.AddRange(Y.ReadNews());

ArabiaAr = newArabia();
L.AddRange(Ar.ReadNews());

ElshrokSh = newElshrok();
L.AddRange(Sh.ReadNews());

        L=Mine_News(L);

s.InsertNews(L);
    }
```

-Now news was extracted, but it is not related to any VIP, so the rule of data mining comes now to mine each news to extract related VIPs.

```
publicList<News>Mine_News(List<News> L)
    {
Services s = newServices();
mining m = newmining();
DataTable Reader = newDataTable();
        Reader = s.Mining_Table();

for (int i = 0; i <L.Count; i++)
        {
stringVIP_Name = m.makeMining(L.ElementAt(i).get_title()+"
"+L.ElementAt(i).get_body(),Reader);
int id = s.Get_ID(VIP_Name, 1);
L.ElementAt(i).set_related_VIP(id);
        }
return L;
    }
```

Interface description

Master Page which contain the header and footer for all our website pages

Header part: It is responsible for checking whether the visitor is registered or

Not, and show the appropriate options for him.

```
<asp:ContentPlaceHolderid="head"runat="server">
</asp:ContentPlaceHolder>
<linkrel="stylesheet"href="styles/layout.css"type="text/css"/>

</head>
<body>
<formid="form1"runat="server">
<divid="main">

<%


if (Session["Honest_login"] == "ok")
        {
%>
<divclass="wrapper col0">
<divid="topline">

<ul>
<li><ahref="default.aspx">الرئيسية</a></li>
<%
if (Session["login_type"] == "VIP")
          {
%>
<li><ahref="VIPprofile.aspx">الخاص</a></li>
<%

          }
else
          {
%>

<li><ahref="userprofile.aspx">الخاص</a></li>
<%
          }
%>


<li><ahref="follow">تابع</a></li>
<liclass="last"><ahref="logout.aspx">تسجيلالخروج</a></li>
</ul>
<brclass="clear"/>
</div>
</div>
<%}
```

```
else
        { %>
<divclass="wrapper col0">
<divid="topline">

<ul>
<li><ahref="#">تسجيل</a></li>
<li><ahref="#">قوائدالاستخدام</a></li>
<li><ahref="#">عنا</a></li>
<liclass="last"><ahref="Login.aspx">تسجيلالدخول</a></li>
</ul>
<brclass="clear"/>
</div>
</div>
<%
} %>

<!-- ############################################################################ -->
<divclass="wrapper">
<divclass="wrapper">
<divid="header">
<divclass="fl_left"><ahref="default.aspx"><imgsrc="images/logo.png"alt=""/></a></div>
       <divclass="fl_right"><ahref="#"><imgsrc="images/demo/468x60.gif"alt=""/></a></div>
<brclass="clear"/>

</div>
</div>
<!-- ############################################################################ -->
```

The footer part and it shows some links and social networks icons, which allows users and visitors to contact with us.

```
<asp:ContentPlaceHolderid="ContentPlaceHolder1"runat="server">

</asp:ContentPlaceHolder>
</div>
<divid="footer">
<!--
#######################################################################################
###################### -->
<divclass="wrapper">
<divid="socialise">
<ul>
<li><ahref="http://www.facebook.com/HonestGate"><imgsrc="images/facebook.gif"alt="
"/><span>Facebook</span></a></li>
<li><ahref="#"><imgsrc="images/rss.gif"alt=""/><span>FeedBurner</span></a></li>
<liclass="last"><ahref="#"><imgsrc="images/twitter.gif"alt=""/><span>Twitter</span
></a></li>
</ul>
<divid="newsletter">
<h2>NewsLetter Sign Up !</h2>
<p>Please enter your Email and Name to join.</p>
<formaction="#"method="post">
<fieldset>
<legend>Digital Newsletter</legend>
<divclass="fl_left">
<inputtype="text"value="Enter name
here&hellip;"onfocus="this.value=(this.value=='Enter name here&hellip;')? ''
:this.value ;"/>
<inputtype="text"value="Enter email
address&hellip;"onfocus="this.value=(this.value=='Enter email address&hellip;')?
'' :this.value ;"/>
</div>
<divclass="fl_right">
<inputtype="submit"name="newsletter_go"id="newsletter_go"value="&raquo;"/>
</div>
</fieldset>
</form>
<p>To unsubsribe please <ahref="#">click here &raquo;</a>.</p>
</div>
<brclass="clear"/>
</div>
</div>

<!-- ########################################################################## -->
<divclass="wrapper col8">
<divid="copyright">
<pclass="fl_left">Copyright &copy; 2011 - All Rights Reserved -
<ahref="http://www.facebook.com/HonestGate">Honest Gate</a></p>
<pclass="fl_right">Join us
<ahref="http://www.facebook.com/HonestGate"title="Honest Gate team">Link</a></p>
<brclass="clear"/>
</div>
</div>

</div>
</form>
```

-Login method: we used the session for registered users and VIPs logging in and out the system, the following part explain the login part.

```
publicvoid login(object sender, EventArgs e)
    {
Services.Serviceswebservice = newServices.Services();

int Reader = webservice.Login(Login1.UserName, Login1.Password);
switch (Reader)
        {
case 1:
Session["Honest_login"] = "ok";
Session["login_type"] = "admin";
Response.Redirect("admin.aspx");

break;
case 2:
Session["Honest_login"] = "ok";
Session["login_type"] = "VIP";
Session["ID"] = webservice.Get_ID(Login1.UserName, 1);
Response.Redirect("VIPprofile.aspx?ID="+webservice.Get_ID(Login1.UserName,1));

break;
case 3:
Session["Honest_login"] = "ok";
Session["login_type"] = "User";
Session["ID"] = webservice.Get_ID(Login1.UserName, 2);
Response.Redirect("userprofile.aspx?ID=" + webservice.Get_ID(Login1.UserName,2));

break;


        }
    }
```

And through the logout operation session will killed, and secure pages are not allowed for visiting while there are no sessions, and visitor will be redirected to the home page.

```
protectedvoidPage_Load(object sender, EventArgs e)
    {
Session.Clear();
Response.Redirect("default.aspx");

    }
```

After that call the webservice which is responsible for retrieving the news content

```
DataTable Reader = newDataTable();
Services.Serviceswebservice = newServices.Services();
        Reader = webservice.GetNews(NewsID);
```

5.4 Data Base and Web Services

5.4.1 Create the connection String to connect with the Database:

```
staticstring DataSource = "hanitempdb.db.8198082.hostedresource.com";
staticstring InitialCatalog = "hanitempdb";
staticstring UserID = "hanitempdb";
staticstring Password = "E804B#8Hh678";

staticstring Connection = "Data Source=" + DataSource + ";Initial Catalog=" +
InitialCatalog + ";User id=" + UserID + ";Password=" + Password + ";";
```

5.4.2 Implementing required Web Service Method:

- Create query string to send to the Database which is about to be executed.
- Open Connection with the Database.
- Execute the query.
- Get the result from the Database.
- Close the Connection.
- Return the result (if exist).

5.4.3 Methods:-

1. voidInsertNews(List<News> New) :

This method Insert a linked list of News into table News in the Database , according to the major steps mentioned above.

```
[WebMethod]
publicvoid InsertNews(List<News> New)
    {
SqlConnection conn = newSqlConnection(Connection);
        conn.Open();

for (int i = 0; i < New.Count; i++)
        {
SqlCommand mysqlcmd = conn.CreateCommand();
            mysqlcmd.CommandType = CommandType.StoredProcedure;
            mysqlcmd.CommandText = "dbo.InsertNews";



SqlParameter param1 = mysqlcmd.Parameters.Add("@Title", SqlDbType.NVarChar);
            param1.Value = New.ElementAt(i).get_title();
```

```
SqlParameter param2 = mysqlcmd.Parameters.Add("@Category", SqlDbType.NVarChar, 20);
            param2.Value = New.ElementAt(i).get_category();

SqlParameter param3 = mysqlcmd.Parameters.Add("@Link", SqlDbType.VarChar);
            param3.Value = New.ElementAt(i).get_link();

SqlParameter param4 = mysqlcmd.Parameters.Add("@ImgLink", SqlDbType.VarChar);
            param4.Value = New.ElementAt(i).get_image();

SqlParameter param5 = mysqlcmd.Parameters.Add("@Describtion", SqlDbType.NText);
            param5.Value = New.ElementAt(i).get_description();

SqlParameter param6 = mysqlcmd.Parameters.Add("@Body", SqlDbType.NText);
            param6.Value = New.ElementAt(i).get_body();

SqlParameter param7 = mysqlcmd.Parameters.Add("@PublishDate", SqlDbType.DateTime);
            param7.Value = New.ElementAt(i).get_publish_Date();

SqlParameter param8 = mysqlcmd.Parameters.Add("@SRC", SqlDbType.NVarChar, 50);
            param8.Value = New.ElementAt(i).get_source();

SqlParameter param9 = mysqlcmd.Parameters.Add("@VID", SqlDbType.Int);
            param9.Value = New.ElementAt(i).get_related_VIP();


            mysqlcmd.ExecuteNonQuery();

        }
        conn.Close();
    }
```

2. DataTableCategory_News(string Cat) :

This method returns the News of the input Category**(string Cat)**from table News in the Database , according to the major steps mentioned above in a Data Table.

```
[WebMethod]
publicDataTable Category_News(string Cat)
    {
SqlConnection conn = newSqlConnection(Connection);

string mycmd = "SELECT
NID,Title,Category,Link,IMGLink,Describtion,Body,PublishDate,SRC,VID,Comment,CommentDate,
feedback FROM News Where Category ='" + Cat + "' ORDER BY PublishDate DESC";

SqlCommand mysqlcmd = newSqlCommand(mycmd, conn);

        conn.Open();
SqlDataReader Reader = mysqlcmd.ExecuteReader();


DataTable dt = newDataTable();
        dt.TableName = "Category News";
```

```
        dt.Load(Reader);
        conn.Close();
return dt;
    }
```

3. DataTable CommentedNews():

This method returns the commented News from table News in the Database ,according to the major steps mentioned above in a DataTable.

```
    [WebMethod]
publicDataTable CommentedNews()
    {
SqlConnection conn = newSqlConnection(Connection);

string mycmd = "SELECT
NID,Title,Category,Link,IMGLink,Describtion,Body,PublishDate,SRC,VID,Comment,CommentDate,
feedback FROM News WHERE CommFlag= 1 ORDER BY CommentDate DESC";

SqlCommand mysqlcmd = newSqlCommand(mycmd, conn);

        conn.Open();
SqlDataReader Reader = mysqlcmd.ExecuteReader();


DataTable dt = newDataTable();
        dt.TableName = "CommentedNews";
        dt.Load(Reader);
        conn.Close();
return dt;
    }
```

4. DataTable GetNews(int NewsID):

This method returns the News whose ID = the input **(int NewsID)** from table News in the Database ,according to the major steps mentioned above in a Data Table.

```
    [WebMethod]
publicDataTable GetNews(int NewsID)
    {
SqlConnection conn = newSqlConnection(Connection);
string mycmd = "SELECT
NID,Title,Category,Link,IMGLink,Describtion,Body,PublishDate,SRC,VID,Comment,CommentDate,
feedback FROM News Where NID ='" + NewsID + "'";
SqlCommand mysqlcmd = newSqlCommand(mycmd, conn);

        conn.Open();
SqlDataReader Reader = mysqlcmd.ExecuteReader();

DataTable dt = newDataTable();
        dt.TableName = "Required News";
        dt.Load(Reader);
        conn.Close();
return dt;
```

```
    }
```

5. shortLogin(string Name,stringPass):

This method Check the input **(string Name,stringPass)**in tables (Admins , VIPs and Users)in the Database if not found returns '0' if found as an Admin returns '1' if found as a VIP returns '2' if found as a User returns '3' , according to the major steps mentioned above in a Data Table.

```
    [WebMethod]
publicshort Login(string Name, string Pass)
    {
//return 0 not .. 1 admin .. 2 VIP .. 3 User;

SqlConnection conn = newSqlConnection(Connection);

SqlCommand mysqlcmd = conn.CreateCommand();
        mysqlcmd.CommandType = CommandType.StoredProcedure;
        mysqlcmd.CommandText = "dbo.IdentifyUser";


SqlParameter param1 = mysqlcmd.Parameters.Add("@Email", SqlDbType.VarChar, 100);
        param1.Value = Name;

SqlParameter param2 = mysqlcmd.Parameters.Add("@Pass", SqlDbType.VarChar, 50);
        param2.Value = Pass;

SqlParameter Out = mysqlcmd.Parameters.Add("@Out", SqlDbType.TinyInt);
        Out.Direction = ParameterDirection.Output;

        conn.Open();
        mysqlcmd.ExecuteNonQuery();

short Result = Convert.ToInt16(mysqlcmd.Parameters["@Out"].Value);
        conn.Close();

return Result;
    }
```

6. Boolean UserRegister(string Email, string UserName, string Pass, short SecretQ, string SecretA, Boolean USex, DateTime BirthDate, DateTime RegisterDate):

This method Insert the input **(string Email, string UserName, string Pass, short SecretQ, string SecretA, Boolean USex, DateTime BirthDate, DateTime RegisterDate)**into table Users in the Database as attributes of a new User , if saved returns '1' if this mail is already exist returns '0' , according to the major steps mentioned above in a DataTable.

```
    [WebMethod]
```

```
publicBoolean UserRegister(string Email, string UserName, string Pass, short SecretQ,
string SecretA, Boolean USex, DateTime BirthDate, DateTime RegisterDate)
    {
//return 0 not .. 1 Saved

SqlConnection conn = newSqlConnection(Connection);

SqlCommand mysqlcmd = conn.CreateCommand();
        mysqlcmd.CommandType = CommandType.StoredProcedure;
        mysqlcmd.CommandText = "dbo.UserRegister";


SqlParameter param1 = mysqlcmd.Parameters.Add("@Email", SqlDbType.NVarChar, 100);
        param1.Value = Email;

SqlParameter param2 = mysqlcmd.Parameters.Add("@UserName", SqlDbType.VarChar, 50);
        param2.Value = UserName;

SqlParameter param3 = mysqlcmd.Parameters.Add("@Pass", SqlDbType.VarChar, 50);
        param3.Value = Pass;

SqlParameter param4 = mysqlcmd.Parameters.Add("@SecretQ", SqlDbType.TinyInt);
        param4.Value = SecretQ;

SqlParameter param5 = mysqlcmd.Parameters.Add("@SecretA", SqlDbType.VarChar);
        param5.Value = SecretA;

SqlParameter param6 = mysqlcmd.Parameters.Add("@USex", SqlDbType.Bit);
        param6.Value = USex;

SqlParameter param7 = mysqlcmd.Parameters.Add("@BirthDate", SqlDbType.Date);
        param7.Value = BirthDate;

SqlParameter param8 = mysqlcmd.Parameters.Add("@RegisterDate", SqlDbType.DateTime);
        param8.Value = RegisterDate;

SqlParameter Out = mysqlcmd.Parameters.Add("@Out", SqlDbType.Bit);
        Out.Direction = ParameterDirection.Output;

        conn.Open();
        mysqlcmd.ExecuteNonQuery();

Boolean Result = Convert.ToBoolean(mysqlcmd.Parameters["@Out"].Value);
        conn.Close();

return Result;
    }
```

And so on all the Queries required by the Interface done with a Web Service to deal separately with the Database

5.4.4 Data Base Structure:

```
CREATETABLE Admins
(
AID intprimarykeyidentity(0,1)notnull,
Email varchar(100)Uniquenotnull,-- check(Email Like '%@%.com'),
AdminName Nvarchar(50)notnull,
AdminPass varchar(50)notnull,
SecretQ tinyintCheck(SecretQ between 1 and 5)notnull,
SecretA Nvarchar(max)notnull,
Photo Image
)

CREATETABLE Users
(
UserID intprimarykeyidentity(1,1)notnull,
Email varchar(100)Uniquenotnull,-- check(Email Like '%@%.com'),
Photo Image,
UserName Nvarchar(50)notnull,
Pass varchar(50)notnull,
SecretQ tinyintCheck(SecretQ between 1 and 5)notnull,
SecretA Nvarchar(max)notnull,
USex bitnotnull,
BirthDate datenotnull,
RegisterDate datetimenotnull,
AdminID intDEFAULT 0 ForeignKeyReferences Admins(AID)
)

CREATETABLE VIPs
(
Activate bitDEFAULT 0 notnull,
VID intprimarykeyidentity(0,1)notnull,
Email varchar(100)Uniquenotnull,-- check(Email Like '%@%.com'),
UserName Nvarchar(50)notnull,
Mining NtextDEFAULT'Not Activated'notnull,
FullName Nvarchar(50)notnull,
Photo Image,
VSex bitnotnull,
PhoneNo intnotnull,--CHECK (PhoneNo LIKE '[0][1][0-2][0-9][0-9][0-9][0-9][0-
9][0-9][0-9][0-9]'),
Vaddress Nvarchar(max)notnull,
Job Nvarchar(50)notnull,
BirthDate datenotnull,
Pass varchar(50)notnull,
SecretQ tinyintCheck(SecretQ between 1 and 5)notnull,
SecretA Nvarchar(max)notnull,
RegisterDate datetimenotnull,
AdminID intDEFAULT 0 ForeignKeyReferences Admins(AID)
)


CREATETABLE Follow
(
UserID intForeignKeyReferences Users(UserID)notnull,
VID intForeignKeyReferences VIPs(VID)notnull,
PRIMARYKey (UserID , VID)
```

```
)

CREATETABLE News
(
NID intprimarykeyidentity(1,1)notnull,
ViewsNo intDEFAULT 0 notnull,
CommFlag bit,-- null = mshafosh , 0 = NoComment , 1 = Commented
Title Nvarchar(max)notnull,
Category Nvarchar(20)DEFAULTN'كوكتيل'notnull,
Link varchar(max)notnull,
ImgLink varchar(max),
Describtion Ntextnotnull,
Body Ntextnotnull,
PublishDate datetimenotnull,
SRC Nvarchar(50)notnull,
VID intForeignKeyReferences VIPs(VID)DEFAULT 0 notnull,
FeedBack tinyintDEFAULT 0 notnull,-- 0 = m3mlsh , 1 = good , 2 = zeft
Comment NtextDEFAULTN'لميتمالتعليق'notnull,
CommentDate datetimeDEFAULT'2000-01-01 01:01:14.000'notnull,
AdminID intDEFAULT 0 ForeignKeyReferences Admins(AID)
)
```

5.4.5 Procedures:

```
---------------------- InsertNews Procedure -----------------------------
CREATEPROC InsertNews
@Title Nvarchar(max),
@Category Nvarchar(20),
@Link varchar(max),
@ImgLink varchar(max)=null,
@Describtion Ntext,
@Body Ntext,
@PublishDate datetime,
@SRC Nvarchar(50),
@VID int
AS
IF @Link notin(SELECT Link from News)
      InsertInto News(Title ,Category ,Link ,ImgLink ,Describtion ,Body
,PublishDate ,SRC ,VID)
      Values(@Title ,@Category ,@Link ,@ImgLink ,@Describtion ,@Body
,@PublishDate ,@SRC ,@VID)

---------------------- IdentifyUser Procedure -----------------------------
CREATEPROC IdentifyUser
@Email varchar(100),
@Pass varchar(50),
@Out tinyintOutPut
AS
IF(SelectCOUNT(*)from Admins Where Email = @Email And AdminPass = @Pass)>=1
Set @Out = 1
elseIF(SelectCOUNT(*)from VIPs Where Email = @Email And Pass = @Pass)>=1
Set @Out = 2
elseIF(SelectCOUNT(*)from Users Where Email = @Email And Pass = @Pass)>=1
```

```
Set @Out = 3
elseSet @Out = 0

--------------------- User Registeration PROC ----------------------
CREATEPROC UserRegister
@Email varchar(100),
@UserName Nvarchar(50),
@Pass varchar(50),
@SecretQ tinyint,
@SecretA Nvarchar(max),
@USex bit,
@BirthDate date,
@RegisterDate datetime,
@Out bitOutPut

AS
IF(SelectCOUNT(*)from Users Where Email = @Email)>=1
Set @Out = 0

else
BEGIN
      InsertInto Users
      (Email,UserName,Pass,SecretQ,SecretA,USex,BirthDate,RegisterDate)
      Values
(@Email,@UserName,@Pass,@SecretQ,@SecretA,@USex,@BirthDate,@RegisterDate)

      Set @Out = 1
END
---------------------- VIP Registeration PROC -------------------------

CREATEPROC VIPRegister
@Email varchar(100),
@UserName Nvarchar(50),
@FullName Nvarchar(50),
@VSex bit,
@PhoneNo int,--CHECK (PhoneNo LIKE '[0][1][0-2][0-9][0-9][0-9][0-9][0-9][0-
9][0-9][0-9]'),
@Vaddress Nvarchar(max),
@Job Nvarchar(50),
@BirthDate date,
@Pass varchar(50),
@SecretQ tinyint,
@SecretA Nvarchar(max),
@RegisterDate datetime,
@Out bitOutPut

AS
IF(SelectCOUNT(*)from VIPs Where Email = @Email)>=1
Set @Out = 0

else
BEGIN
      InsertInto VIPs
      (Email,UserName,FullName,VSex,PhoneNo,Vaddress,Job,BirthDate,Pass,Secre
tQ,SecretA,RegisterDate)
```

```
      Values
(@Email,@UserName,@FullName,@VSex,@PhoneNo,@Vaddress,@Job,@BirthDate,@Pass,@S
ecretQ,@SecretA,@RegisterDate)

      Set @Out = 1
END
------------------------------ No Comment --------------------------------

CREATEPROC NoComment
@NID int

AS
IF (SELECT CommFlag from News WHERE NID = @NID)=1
      SET @NID = 0
else
UPDATE News SET CommFlag = 0 WHERE NID = @NID
```

5.5 Mobile Application

Methods:

- **web Service** ()

  This function makes connection between android and web service.

  ✓ In the main activity takes the input as email and pass and **return 2 if this is VIP user**, then transfer to the second activity, **or 0 if not exist**.

  ✓ In the second activity takes the input as VIP ID and return all the news related to him.

  ✓ In the third activity takes the input as comment and feedback and sends it to the data base.

```
public void webService()
   {
      new Thread(new Runnable() {
      @Override
      public void run() {
       try {
                    Log.i("Debug", "1");
                     SoapObject request = new SoapObject(NAMESPACE, METHOD_NAME);

                    request.addProperty("Email", txt1.getText().toString());
                    request.addProperty("Pass", txt2.getText().toString());

                     SoapSerializationEnvelope envelope =
                              new SoapSerializationEnvelope(SoapEnvelope.VER11);

                    envelope.dotNet=true;
                    envelope.setOutputSoapObject(request);
```

```
                HttpTransportSE androidHttpTransport = new HttpTransportSE(URL);
                androidHttpTransport.call(SOAP_ACTION, envelope);

                final Object result = (Object)envelope.getResponse();
                runOnUiThread(new Runnable()
                {

                      @Override
                      public void run()
                      {
                            Log.i("Debug", "22");
                            final int i=Integer.parseInt(result.toString());

                            if(i==2)
                            {
                                  Intent in=new Intent( MainActivity.this,
                                                        SecondActivity.class);
                                  startActivity(in);
                                  }
                                  else
                                  {
                                        txt.setVisibility(1);
                                  }

                            }
                      });
                }
                catch (Exception e)
                {
                      e.printStackTrace();
                }

          }
    }).start();
}
```

5.6 Summary

In this chapter the Used Technologies are shown and how they are used in the Project and each module has been explained with its implementation.

Data Mining Module.

Information extract module.

Web Services and Data base Module.

Chapter 6 “Test Cases”

6. Test Cases

A test case in software engineering is a set of conditions or variables under which a tester will determine whether an application or software system is working correctly or not.

6.1 Reading RSS

- ✓ **Purpose**: Read the RSS Feeds and determine related VIPs to all news.
- ✓ **Prerequisite**: there is news in the RSS feeds related to the VIPs registered with the system.
- ✓ **Steps:**

1. Prepare RSS news feed.
2. Register with the system with a VIP related to the RSS feeds
3. Call the portal to extract the news from RSS.
4. Open the VIPs profile to check whether he is notified by the news or not
5. Try to add comment and evaluate the news;
6. Observe the evaluation of the source.
7. Followers to the VIP must mentioned by that news.

- ✓ **Expected Output:**

After step "1":

- Prepare the following RSS and pass it to the system http://rss.filgoal.com/arabic/newsrss.aspx?SecID=1.

Figure 6.1 News in the website

```
- <item>
    <title>مدرب تشيلسي: المعلم سيظل أعظم مدربي إفريقيا</title>
  - <description>
      <p align="right"><img src="http://betaimages.filgoal.com/images/newspics/medium/168328215244.jpg" align="right" />أثنى فان دير بلوم المدير الفني لتشيلسي الغاني على حسن شحاتة نظيره في الزمالك
      بعد مباراة الفريقين في الجولة الافتتاحية من دوري أبطال إفريقيا.</p>
    </description>
  - <link>
      http://www.filgoal.com/arabic/news.aspx?NewsID=91896
    </link>
    <pubDate>Sat, 07 Jul 2012 20:35:46 </pubDate>
  - <guid>
      http://www.filgoal.com/arabic/news.aspx?NewsID=91896
    </guid>
    <author>FilGoal.com</author>
  </item>
```

Figure 6.2 news in the RSS

Figure 6.1 shows the news in the website which is mentioned in the RSS feeds also in Figure 6.2.

After step "2":

User information must be stored in database and approved by the admin.

After step"3"

- The portal must read all the RSS news mentioned in step 1.
- Registered VIPs must relate to their news through the mining process.

Figure 6.3 reads the news from the RSS

Figure 6.4Related News

Figure 6.3 shows that our website reads the news from the RSS feeds and publish it.

Figure 6.4 shows that our website related the news to [Hassan shehata], the person mentioned in the website.

After step"4"

- The VIP must receive notification regarding the news related to it.

After step"5"

- When the VIP related to the news shows it, he must have the options to comment and evaluates it.

Figure 6.5 VIP comment

Figure 6.5 shows that the VIP related to the news can comment on it and evaluate it.

After step"6"

- *The evaluation of the source must change related to the evaluation of the VIP on the news.*

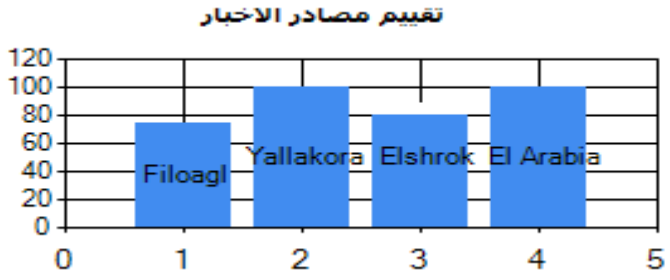


Figure 6.6 evaluations before the comment

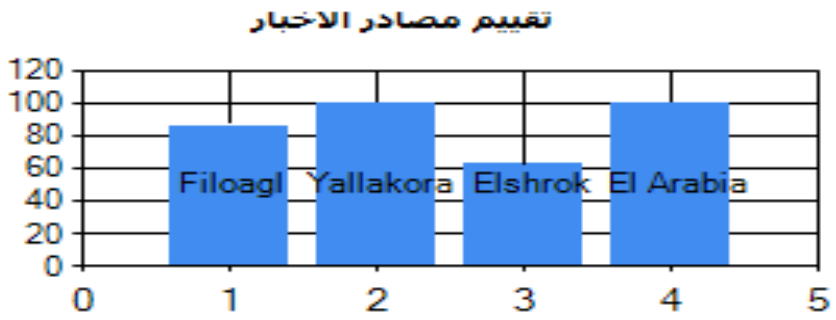


Figure 6.7 evaluations after the related VIP comment

Figure 6.6 shows the evaluation before the comment on the news of, it show that the evaluation of Filgoal = 65%

Figure 4-b shows the evaluation after the related VIP evaluate the news by TRUE, so the rate of Filgoal Evaluation becomes 82%

After step"7"

- The Users which are followers to this VIP must be notified by this news as shown in figure 6.8.

Figure 6.8 the followers

- Figure 6.8 shows that followers to Hassan Shehata are mentioned with his news in their profiles

6.2 Database Phase

- ✓ **Purpose:** Insert, update, delete or just retrieve specific data from the database.
- ✓ **Prerequisite**: there is a request from the system to insert , update , delete or just retrieve specific data from the database.

✓ **Steps:**

1- Prepare Web service:-
2- Create connection string.
3- Create Query string.
4- Open connection with the Database.
5- Execute the Query on the Database engine.
6- Save result from the Database (if exist).
7- Close the connection.
8- Return result (if exist).

✓ **Assumed Input:**

- Assume that we have a User want to register to our Project then we have to insert his information to the Database.

✓ **Expected Output:**

After step "1":

Connection is ready to be opened.

After step "2":

Now we can treat easily with the Database

After step"3"

User information is stored in the Database.

After step"4"

The Database returned nothing to the Web service.

After step"5"

Connection is closed.

After step"6"

There is no return result as web service's return is void

6.3 Mining Phase

- ✓ **Purpose:** Determine which VIP related with this News which extract from RSS.
- ✓ **Prerequisite:** Getting the News from RSS.
- ✓ **Steps:**
    1. Preprocess the news by filtering from all key words.
    2. Compute the term frequency of it.
    3. Loop at all VIPs records and compute cosine similarity between each one.
    4. Get the maximum similarity value from them.
    5. Compare this Maximum similarity with the threshold.
    6. If greater than, return this related VIP.
- ✓ **Supposed Input:**
    - Suppose that we have 6 VIPs with their mining records(Abo-Treka, Hassan Shehata, Manual Gozeh, El-Baraday, Shekabala, Ahmed Hassan).
    - Suppose that we have this news from (Fil Goal):

مدرب تشيلسي: المعلم سيظل أعظم مدربي إفريقيا

السبت ، 7 يوليو 2012 - 20:35 | (4332)

أثنى فان دير بلوم المدير الفني لتشيلسي الغاني على حسن شحاتة نظيره في الزمالك بعد مباراة الفريقين في الجولة الافتتاحية من دوري أبطال إفريقيا.

وفاز تشيلسي الغاني بنتيجة 3-2 على ضيفه الزمالك في الجولة الأولى من سباق المجموعات، ويلعب الأهلي مع مازيمبي في الجولة ذاتها يوم الأحد.

وقال مدرب تشيلسي عقب اللقاء: "سعيد بالفوز لأنه تحقق على فريق بحجم الزمالك.

وتابع المدرب الهولندي بحسب ما أبرزه الزمالك في موقعه الرسمي "برغم الهزيمة سيظل حسن شحاتة أعظم مدربي إفريقيا.

ويلعب تشيلسي الغاني مع مازيمبي الكونجولي في الجولة المقبلة من سباق المجموعات، في حين يصطدم الزمالك بالأهلي.

Figure 6.9 Example for mining test case

✓ **Expected Output:**

After step "1":

- We have abstracts words filtered with all keywords

After step "2":

- *We have a vector contains each word and it's count number.*

After step"3"

- *We have all the similarity values between this news and all VIPs that we have in database.*
- *As the order of typing the similarity values are (0 ,* ***2.669*** *, 0.035 , 0 , 0.038 , 0.086)*

After step"4"

- *After the maximum computing we have the value 2.669 with index 2.*

After step"5"

- *If maximum > threshold ?*
- *2.669 > 0.09 ?*

After step"6"

- *Return the related VIP indexed number 2 (***Hassan Shehata** *).*

6.4 Mobile Application Phase

✓ **Purpose**: connect with VIP and sent him his news in time and get his comment and feedback.

✓ **Prerequisite:** Getting the news from database by web service.

✓ **Steps:**

1. VIP login.
2. Check his news titles and select one which wants to see its body.
3. Comment on this news and gives his feed back.

✓ **Expected Output:**

After step "1":

- The VIP user insert his email and password
- The database check if it true or not.
- If true, go to next form

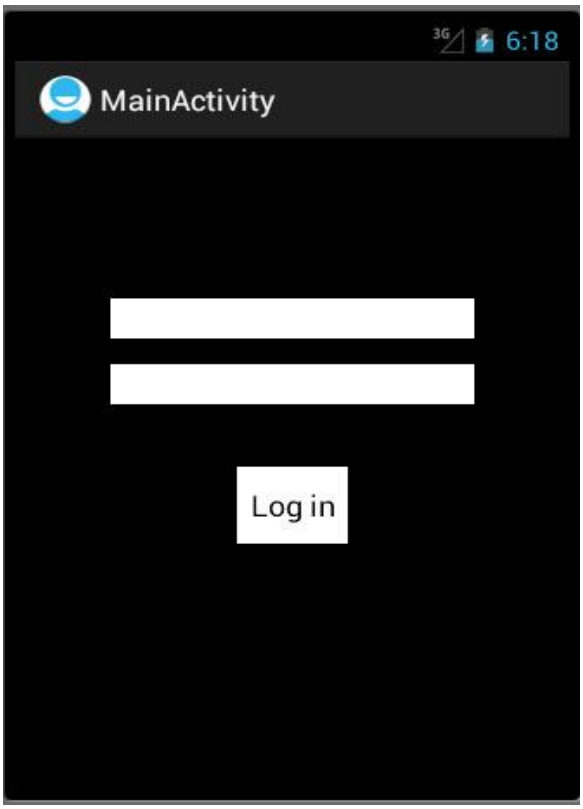


Figure 6.10 Login from in mobile application

After step “2”:

- The user determines which news want to see.

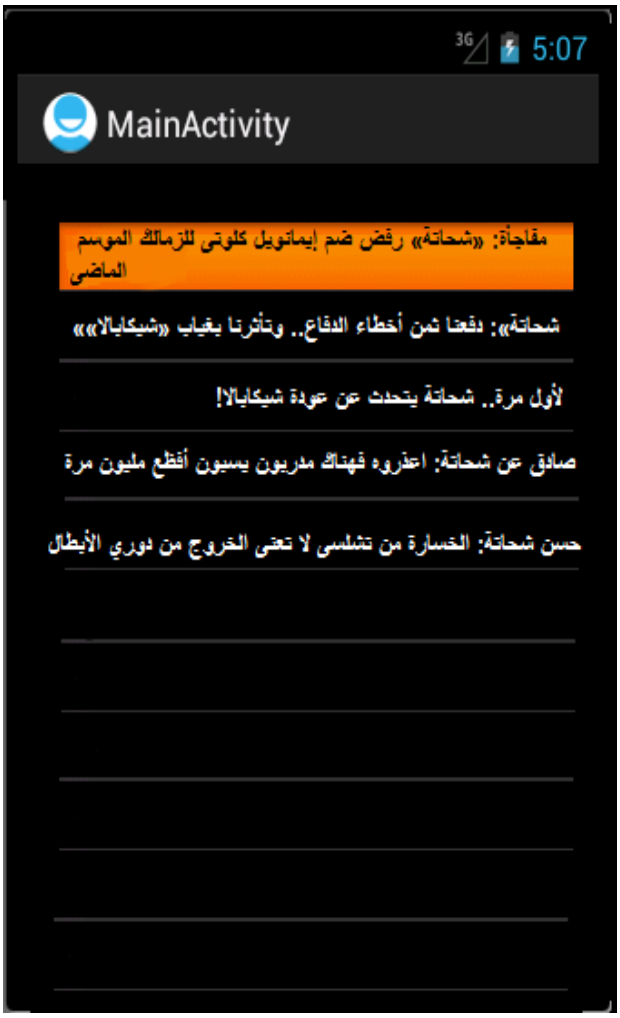


Figure 6.11 VIP Profile

After step"3"

- *Get the user comment and feedback.*
- *Sent it to database by web service.*

As Shown in figure 6.12

Figure 6.12 VIP related news and his comment

6.5 Summary

Test cases are proposed in this chapter to test the system functionalities and how it can act in particular situations. Also, to validate the system from all its sides and the advantages of the system is also appeared.

Chapter 7 "Conclusions and Future Work"

7. Conclusion and Future Work

In this chapter, we will summarize the system and mention its output. Also the beneficiaries will be detected. Finally, the future work that will be done and its benefits on the blind will be mentioned.

7.1 Conclusion

- Our developed system introduces a trusted source for published news compared with other systems by :

1) Extract news from other news websites this process done by using RSS file and applying Crawling methods.

First, the system read the RSS file which contain the title of the news and the link of news' source, then use crawling methods by reading the link of all news' sources and crawl it to get the full detailed news.

2) process that news to find related persons or entities by using the data mining techniques which takes detailed news and apply Cosine similarity algorithm between the news and all stored VIPs' records and get the maximum similarity, then decides if this news related to some VIP or not, if this news related some VIP, then it's stored in data base with its related VIP.
3) Using a mobile application which sends a message immediately after publishing the news to news' owners

This message contains the news of this related VIP this ensure instant communication, to take a comment from this VIP.

4) Then publish all news with the comment of related entities through website.
5) Also all website readers can follow all the preferred special users.

- ***<u>The innovation in our system:</u>***

1- The developed system guarantee confidence in published news through providing the real news and the comments of related entities of this news in one source through our website.

2-provide an evaluation for behavior of publishing news sources.

3- Send all news related to some people or entities that are related to this news at the same instance it appears.

- ***<u>There are lots of beneficiaries that will benefit from this system:</u>***

1-people who interested in follow up news whether artistic, sports, political, economic

2- Artists

3- Politicians

4-Sportsmen

5-Economists

6-football players

7- Companies with shares in the stock market

7.2 Future Work

There are many future works that can improve our system. And there are main features of them that will be included and depend on them some sub-features can be added. The features are:

1. **<u>Connection with Twitter</u>**

The system will connect automatically with Twitter and all official pages of VIPs to gain their comments in time.
The comment of news owner will send to all his followers in out developed system.

2. **<u>Provide Mobile Application for all users</u>**

All users can download the mobile application after registration to gain all news and comments related to on time.
The application will provided to work in all platforms, such as:

- Nokia's Symbian
- Google's Android
- Apple's iOS
- RIM's BlackBerry OS

- Microsoft's Windows Phone
- Linux
- Palm/HP's WebOS
- Samsung's Bada
- Nokia's Maemo and Meego among many others [7].

3. **Collect global news and Connect with them owners**

Our system is a global source for trusted news and be capable of connect with VIPs all over the world.
There are some real companies Lost shares in the stock market because of publishing wrong news related to it, so this system will capable with communicate with the large enterprises to confirm their news.
The system will avoid persistent effects of a false news chock [8].

4. **Make automatic classification**

The system able to catch all news, understand it and make automatic classification for all these news and put all news in its correct category to increase the accuracy of classification and to guarantee the correctness of categories of all news.

7.3 Summary

This chapter first includes the conclusion of our system, and the output of the system, and who are the most beneficiaries of the system. Then talks some about how will be the system the future.

References

[1] Information extraction
http://en.wikipedia.org/wiki/Information_extraction

[2] RSS (Really Simple Syndication)
http://en.wikipedia.org/wiki/RSS

[3] Example for RSS
http://www.filgoal.com/

http://www.shorouknews.com/

[4] *Microsoft **ASP.NET** Step by Step (Microsoft Press)* - G. Andrew Duthrie

http://www.w3schools.com/

[5] Create data base
http://www.w3schools.com/sql/sql_create_db.asp

[6] Create web services
http://www.w3schools.com/webservices/default.asp
http://www.youtube.com/watch?v=J3_Z6ZHVLho

[7] Wikipedia. Mobile operating system.

http://en.wikipedia.org/wiki/Mobile_operating_system.

[8] The persistent effects of a false news chock
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1946042

[9] System Sequence Diagram
http://en.wikipedia.org/wiki/System_sequence_diagram

[10] Overview for data mining

http://www.thearling.com/text/dmwhite/dmwhite.htm

http://en.wikipedia.org/wiki/Data_mining

[11] Similarity Technique
http://mines.humanoriented.com/classes/2010/fall/csci568/portfolio_exports/bfindley/similarity.htm

[12] Android could to device messaging Framework

http://developer.android.com/guide/google/gcm/index.html

Glossary

- ***ASP.NET***: is a development framework for building web pages and web sites with HTML, CSS, JavaScript and server scripting.ASP.NET supports three different development models: Web Pages, MVC (Model View Controller), and Web Forms
- ***Anomaly detection***: refers to detecting patterns in a given data set that do not conform to an established normal behavior. The patterns thus detected are called anomalies and often translate to critical and actionable information in several application domains. Anomalies are also referred to as outliers, change, deviation, surprise, aberrant, peculiarity, intrusion, etc.
- ***Association rule learning:*** In data mining, association rule learning is a popular and well researched method for discovering interesting relations between variables in large databases.
- ***Class Diagram:*** a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations(or)methods and the relationships between the classes.
- ***Classification:*** is used on category pages to show the hierarchy of the category. They help users understand how the category relates to other categories.They help users jump up to higher levels on the hierarchy.
- ***Clustering:*** is the task of assigning a set of objects into groups (called clusters) so that the objects in the same cluster are more similar (in some sense or another) to each other than to those in other clusters. Clustering is a main task of explorative data mining, and a

common technique for statistical data analysis used in many fields, including machine learning, pattern recognition, image analysis, information retrieval, and bioinformatics.

- ***Cosine similarity***: is a measure of similarity between two vectors by measuring the cosine of the angle between them. The cosine of 0 is 1, and less than 1 for any other angle; the lowest value of the cosine is -1. The cosine of the angle between two vectors thus determines whether two vectors are pointing in roughly the same direction.
- ***Crawling:*** Web crawling is the process used by search engines to read websites contents.
- ***A database engine:*** is the underlying software component that a database management system (DBMS) uses to create, read, update and delete (CRUD) data from a database.
- ***Data mining:*** the extraction of hidden predictive information from large databases, is a powerful new technology with great potential to help companies focus on the most important information in their data warehouses.
- ***Data Modeling:*** the process of creating a data model by applying formal data model descriptions using data modeling techniques.
- ***Domain Model***: a conceptual model of a domain of interest (often referred to as a problem domain) which describes the various entities, their attributes and relationships, plus the constraints that govern the integrity of the model elements comprising that problem domain.
- ***Euc***lidean Distance: Euclidean distance between a pair of objects refers to the metric distance between the objects. This value is found by taking the root of the sum of squared differences between each of their attributes. For example, if there are two objects, A and B, with attributes x, y, and z, to determine the Euclidean distance between the two one need only:
- ***Entity Relationship Diagram:*** an abstract and conceptual representation of data. It is a database modeling method, used to produce a type of conceptual schema or semantic data model of a system, often a relational database, and its requirements in a top-down fashion
- ***Evaluation of News sources :*** It provides an evaluation for the behavior of News sources.
- Expert: is someone widely recognized as a reliable source of technique or skill whose faculty for judging or deciding rightly, justly, or wisely is accorded authority and status by

their peers or the public in a specific well-distinguished domain. An expert, more generally, is a person with extensive knowledge or ability based on research, experience, or occupation and in a particular area of study.

- ***Functional Requirements:*** defines a function of a software system or its component. A function is described as a set of inputs, the behavior and outputs.
- ***HTML***: HyperText Markup Language: is the main markup language for displaying web pages and other information that can be displayed in a web browser.
- ***Information extraction :***Is the task of automatically extracting structured information from machine-readable documents, in our case the machine-readable documents are websites and its contents (html files, RSS, Etc)
- ***Internet:*** a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billions of users worldwide.
- ***jQuery***: is a cross-browser JavaScript library designed to simplify the client-side scripting of HTML.
- ***Non-Functional Requirements:*** a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors.
- ***Pattern:*** is a written document that describes a general solution to a design problem that recurs repeatedly in many projects.
- ***Predictive Information:*** Observations on the past provide some hints about what will happen in the future, and this can be quantified using information theory. The ``predictive information'' defined in this way has connections to measures of complexity that have been proposed both in the study of dynamical systems and in mathematical statistics.
- ***Process Modeling:*** the process of creating a process model by applying formal process model descriptions using process modeling techniques.
- ***RSS (Really Simple Syndication):*** Is a family of web feed formats used to publish frequently updated works—such as blog entries, news headlines, audio, and video—in a standardized format— An RSS document (which is called a "feed", "web feed", or "channel") includes full or summarized text, plus metadata such as publishing dates and authorship.

- ***Session:*** the presence of a user with a unique IP address on a Website during a specified period of time.
- ***Sequence Diagram:*** a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart.view-controller model services.
- ***Similarity techniques:*** Similarity can be roughly described as the measure of how much two or more objects are alike. Similarity can also be seen as the numerical distance between multiple data objects that are typically represented as value between the range of 0 (not similar at all) and 1 (completely similar). Depending on the similarity metric used the triangle inequality between objects may hold, but more generally the two properties that must be maintained for similarities is that the measure of similarity must fall within the range of 0 and 1 and symmetry. Symmetry being the property that states that for all x and for all y the similarity of x and y must be the same as the similarity of y and x.
- ***SOAP:*** originally defined as Simple Object Access Protocol, is a protocol specification for exchanging structured information in the implementation of Web Services in computer networks. It relies on Extensible Markup Language (XML) for its message format, and usually relies on other Application Layer protocols, most notably Hypertext Transfer Protocol (HTTP) and Simple Mail Transfer Protocol (SMTP), for message negotiation and transmission.
- ***Stakeholders:*** person, group, or organization that has direct or indirect stake in the proposed system because it can affect or be affected by the project's actions and objectives.
- ***System architecture:*** System architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structure of the system which comprises system components, the externally visible properties of those components, the relationships (e.g. the behavior) between them.

- ***System Overview:*** demonstrates the main components of the system and how they interact with each other.
- ***System Requirements:*** are two types functional and non-functional requirements.
- ***System Sequence Diagram:*** a diagram shows the communication messages between the user and the system (as a black box) for each use case.
- ***Term frequency (TF)***: is a measure of how often a term is found in a collection of documents. TF is combined with inverse document frequency (IDF) as a means of determining which documents are most relevant to a query. TF is sometimes also used to measure how often a word appears in a specific document.
- ***Use Case Diagram:*** a diagram demonstrates the system usage from its users' perspective.
- ***Web service:*** is a method of communication between two electronic devices over the Web
- ***UDDI:*** the protocol for discovering Web Services on the internet.
- ***Uniform resource locator (URL):*** is a specific character string that constitutes a reference to an Internet resource.
- ***WSDL:*** Web Services Description Languages an XML format for describing network services as a set of endpoints operating on messages containing either document-
- oriented or procedure-oriented information.

الملخص

اصبحت الاخبار من اهم الأشياء في حياتنا اليوميه , وبعد البحث المكثف وجدنا أن العديد من الناس يستخدمون المواقع الالكترونيه على شبكة الانترنت لمتابعة كل الأخبار بدلا من شراء الصحف، فهم مُهتمّين بمتابعة الأخبار اليومية سواء في مجال الرياضة ,السياسية ,الاقتصادية و..... الخ

في بعض الاحيان تكون الاخبار المنشوره خاطئه و غير موثوق فيها وغير مؤكده أيضًا و هذا قد يُضلّل القرّاء و يشتت الرأي العام و يزيد اشتعال الفتنه و يسبب نزاعات ويمكن أن يتسبب في خسارة بعض الشركات والأفراد. و هذا النظام المتطور يقدم مصدر موثوق به للاخبار المنشوره بالمقارنه بالأنظمه المختلفه و هذا عن طريق استخراج الاخبار من المواقع الاخري ثم معالجة هذه الاخبار للحصول علي صاحب الخبر و بعد ذلك ارسال رسالة إشعارعلى الفور عن طريق تطبيقات الهاتف وهذه الرساله تحتوي على آخر المتعلقه بتلك الشخصيه ، وهذا لضمان الاتصالات الفورية بأصحاب الأخبار و الحصول علي تعليقهم الخاص علي هذه الاخبار.

كما يستطيع القراء متابعة اخبار الشخصيات البارزه المفضله لهم

كثير من المواقع الإخبارية ليس لديهم مصداقية في الاخبار المنشوره , لذلك سوف يوفر تقييم لسلوك مصادر الأخبار.
هذا النظام يضمن المصداقية والثقة في كل ما ينشرمن اخبار.

هذا النظام حاصل علي:

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