



**BSc (Hons) Computer Science and Software  
Engineering**

**UNIVERSITY OF BEDFORDSHIRE**

**Solution Seeker: An android app that that helps you to  
share knowledge among your batch mates**

**CONTEXTUAL REPORT**

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## Table of Contents

1. Introduction .....	1
1.1 Project Background .....	1
1.2 Project Objectives .....	1
1.3 Project Framework.....	2
1.4 Structure of the Report.....	2
2. Literature Review .....	3
2.1 Introduction .....	3
2.1.1 Researched areas .....	3
2.1.1.1 Mobile Social Networking for education (Educational Mobile Application) .....	3
2.1.1.2 Android based application for M - Learning .....	6
2.1.2 Similar Mobile Applications .....	8
2.2.3 Conclusion.....	9
3. Project Plan .....	10
4. Methodology.....	14
4.1 Chosen methodology .....	14
4.2 Planning of the System .....	14
4.3 Requirement Gathering and Analysis .....	15
4.4 Design.....	22
4.5 Implementation .....	24
4.6 Testing.....	24
4.7 Evaluation.....	25
References .....	25
Appendices.....	29

## Table of Figures

Figure 1: Mobile social platforms usage (Sterling, 2016).....	3
Figure 2: Social apps that use commonly (Sterling, 2016) .....	4
Figure 3: Device ownership (Chen et al., 2015) .....	4
Figure 4: Smartphone ownership (Chen et al., 2015) .....	5
Figure 5:Tablet ownership (Chen et al., 2015) .....	5
Figure 6: E-book reader ownership (Chen et al., 2015).....	5
Figure 7: M-learning architecture (Martono and Nurhayati, 2014) .....	6
Figure 8: Android architecture (Martono and Nurhayati, 2014).....	7
Figure 9: Design layout of an android mobile application (Martono and Nurhayati, 2014).....	7
Figure 10: Comparison table.....	9
Figure 11: Project Breakdown Structure.....	10
Figure 12: Gantt chart .....	11
Figure 13: Gantt chart 1.1 .....	11
Figure 14: Gantt chart 1.2 .....	12
Figure 15: Gantt chart 1.3 .....	12
Figure 16: Gantt chart 1.4 .....	12
Figure 17: Work Breakdown Structure .....	13
Figure 18: Iterative model (Powell-Morse, 2016).....	14
Figure 19: Questionnaire result 01.....	15
Figure 20: Questionnaire result 02.....	16
Figure 21: Questionnaire result 03.....	16
Figure 22: Questionnaire result 04.....	17
Figure 23: Questionnaire result 05.....	17
Figure 24: Questionnaire result 06.....	18
Figure 25: Questionnaire result 07.....	18
Figure 26: Questionnaire result 08.....	19
Figure 27: Questionnaire result 09.....	19
Figure 28: Questionnaire result 10.....	20
Figure 29: Questionnaire result 11.....	20
Figure 30: Questionnaire result 12.....	21
Figure 31: Use Case Design.....	22
Figure 32: ER Diagram.....	23

# 1. Introduction

## 1.1 Project Background

Mobile learning has evolved through time that we can see the results of it, that such as schools, universities using mobile applications to make their day-to-day work easy. Mobile learning has been especially helpful to special needs schools too. Using mobile application to deliver knowledge is tremendous. These days teenagers and adults has mobile phones with them anytime. So access to knowledge is simple. Half of all young people in UK in 2011/12 are attending on universities to make their lives a success (Ball, 2013). Only 34.4% of the working population in Great Britain aged 16-64 have achieved a degree level (Ball, 2013). Technology is being used for many matters to solve through any situation.

M-leaning can be used to navigate students to get more grades and get graduate by connecting each student through mobile application. Some students are tend to set up as a group and learn but if the group is bigger more students get the chance to share knowledge and capture. The best way to find answers among groups are brainstorming. Brainstorming is an approved and most effective method to solve a problem. The proposed system is based on that method. It is a platform for students to get together and find answers.

## 1.2 Project Objectives

The main objective of this proposed project is to help every students to nourish in knowledge and harness from it. Below listed objectives will be belong to the android application which will be developed.

- To develop an algorithm to find the category of the question.
- To develop an algorithm to find who are able to answer for the specific question.
- To develop an algorithm for a rating system that choose the best answer.
- To develop a messaging system within university students.
- To develop an algorithm to make a priority list among university students.

## 1.3 Project Framework

To start the proposed project and check whether the proposed system is feasible I have searched and reviewed many journals including research papers, survey papers, and case studies. Through those journals I have gained the knowledge of the background of the project and current situation in industry level.

After deciding it is feasible, to gather requirement a questionnaire has published in social groups to collect primary data and to collect secondary data further more through journals have been reviewed and software requirements are also decided. After analyzing the data, the unique function for the proposed system and all the functions that proposed system going to deliver are decided. The most suitable life cycle model is chosen for the project in according to deliver the functions more accurately and user friendly. After that, to get a more clear idea of the project, the project breakdown structure and the work breakdown structure are designed. To maintain the cost management and time management Gantt chart is designed according to the chosen life cycle model.

According to the chosen life cycle model which is iterative model, the proposed system will be developed by android studio. There will be 6 iterations in total. First iteration will be database implementation which will be developed by SQLite. And then functions by functions will be implemented. In every iteration implemented functions will be tested and reviewed. After all the iterations are being finished, there will be a functional testing.

## 1.4 Structure of the Report

There will be 4 main chapters in this contextual report.

1. Introduction
2. Literature Review
3. Planning of the project
4. Methodology

Under introduction chapter, project background, project objectives, project framework and structure of the report will be discussed. In each those topics will discuss and illustrate about the research project. To see what have done and what has not been investigate, to see what are the researches have in research topic area, and evaluate the research in an audience will be included under literature review chapter. Planning of the project chapter will be all about how will be planned and how the research project will be maintained during the given time frame effectively and accurately. Under methodology, it is about the system that the research project going to be done and under that system how the project will be executed.

## 2. Literature Review

### 2.1 Introduction

Most of time students in universities tend to study group wise or by them self but not as a whole batch. It leads to unreliable sources and not sure about what they are actually learning. But if students have the opportunity to study as a whole batch they can know the source is reliable or not and whether they are learning the correct methods and concepts and importantly increase the amount students' getting graduate. And it is more effective method than studying group wise or by self. If there is 10 students in a group, there will be a brain storming of 10 brains but if the group is bigger it will get more brain stormed. So it leads to success and accurate knowledge among students in the batch (Manktelow et al., n.d.). The best way to connect students in a batch is the mobile. Mobile social networking can be harnessed to achieve above motivation.

#### 2.1.1 Researched areas

##### 2.1.1.1 Mobile Social Networking for education (Educational Mobile Application)

Ometov and his group has given the following definition that 'Mobile social networks are networks of individuals with similar interests connected to each other through their mobile devices' (Ometov et al., 2017). With the help of the wireless technology mobile social networks are expanding fast that allows to succeed more efficient communication and better network performance across key specifics such as such as lower delay, higher data rate, and better coverage has said Ometov and his group.

So as above said it is a perfect platform to connect the whole batch through a mobile application. Above key specifics will prove the mobile social network is good or a bad mobile social network.

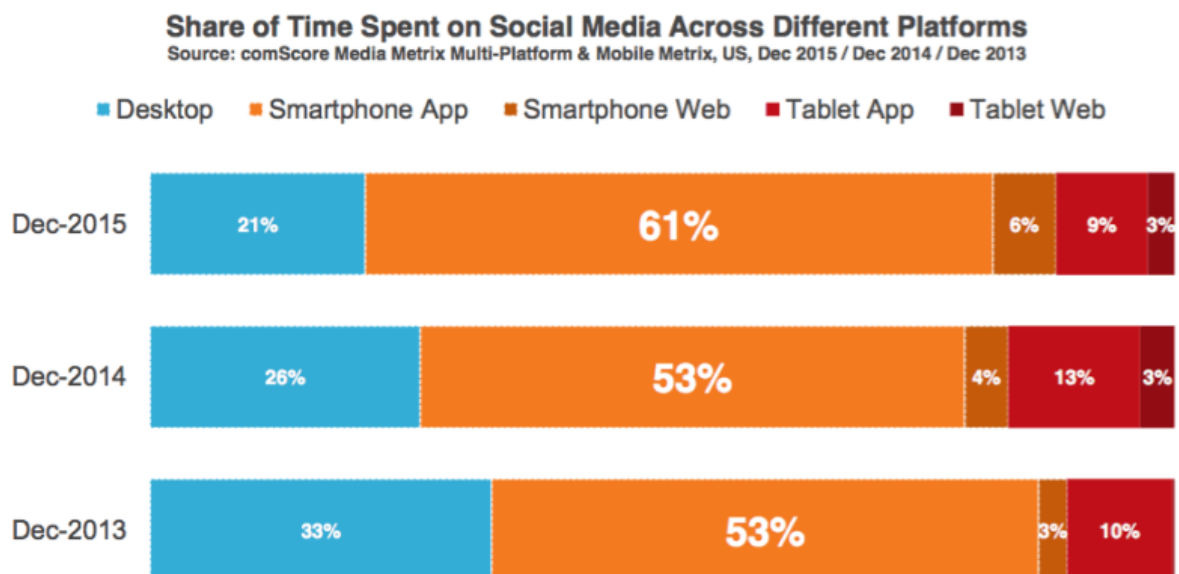


FIGURE 1: MOBILE SOCIAL PLATFORMS USAGE (STERLING, 2016)

Figure 1: Mobile social platforms usage (Sterling, 2016)

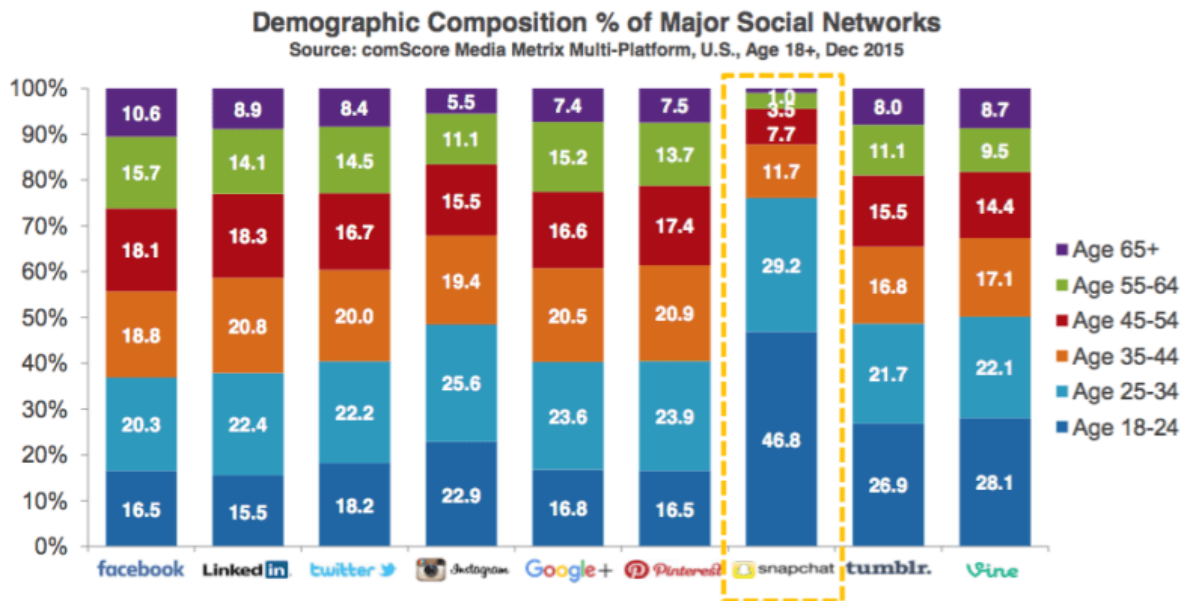


FIGURE 2: SOCIAL APPS THAT USE COMMONLY (STERLING, 2016)

Above Figure 01 (Sterling, 2016) will present social platforms usage in 3 different year, which will state what is the most used platform for social media and Figure 02 (Sterling, 2016) will present what are the social apps that used by people according to ages.

Sherrie Negrea has mentioned In 2013 according to the campus computing survey, 79 percent of colleges and universities had moved to mobile applications or planned to provide them in their last academics year (Negrea, 2014). And also Sherrie Negrea has said there was a 42 percent mobile app usage at the end of the 2011 and it have increased into 60 percent at the end of the 2012. Significant feature of this educational mobile application has is mobility. It has been a great aid to some students who live in rural cities. Some students can't attend on lectures due to many problems such as constraints of work, household activities or other reasons (Valk, Rashid and Elder, 2010).

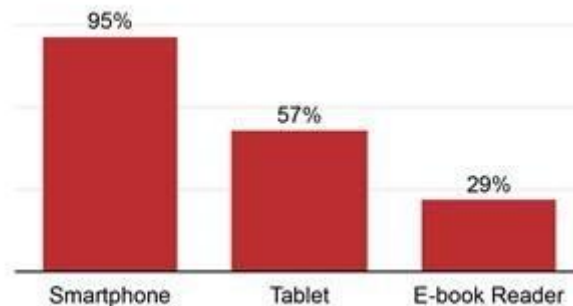


FIGURE 3: DEVICE OWNERSHIP (CHEN ET AL., 2015)

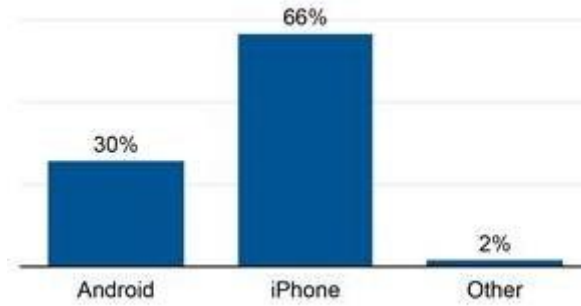


FIGURE 4: SMARTPHONE OWNERSHIP (CHEN ET AL., 2015)

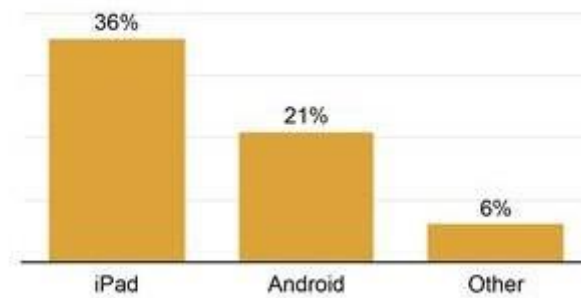


FIGURE 5: TABLET OWNERSHIP (CHEN ET AL., 2015)

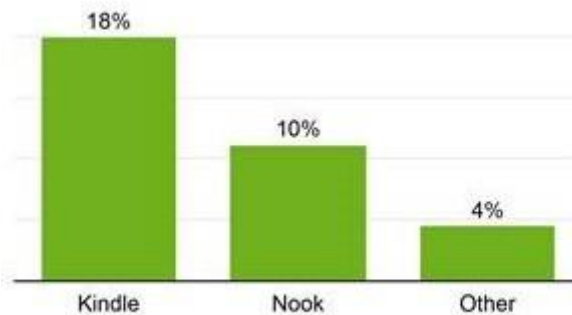


FIGURE 6: E-BOOK READER OWNERSHIP (CHEN ET AL., 2015)

Above Figure 03 (Chen et al., 2015) is a statistic of how many students owning different devices. Figure 04 - 06 (Chen et al., 2015) are about orderly percentage of using different smartphone devices, percentage of using different tabled devices and percentage of using different E-book reader devices.

As Figure 03 shows 95 percent from respondents owned a smartphone device. Most of students owned an iPhone or an android as Figure 04 shows. Tablet and E-book reader ownership percentage is low compared to smartphone devices (Chen et al., 2015).



### 2.1.1.2 Android based application for M - Learning

M-learning will lead to varieties of benefits that mobile phones could have on the educational side (Chen et al., 2015). Chen and his group has also said m-learning has two major categories, one is improving access to education while maintaining the quality of education delivered, second is facilitating alternative learning processes and instructional methods collectively known as “New Learning” (Chen et al., 2015). Chen and his group has said m-learning will impact on educational outcomes by increasing access, m-learning represents continuation an improvement of distance learning through increased utility and applicability.

As Laura Devaney has mentioned 86 percentage of school and district administrators said mobile learning increases student engagement. Also they indicated that it helps each student personalize learning by 67 percent from their learning (Devaney, 2014).

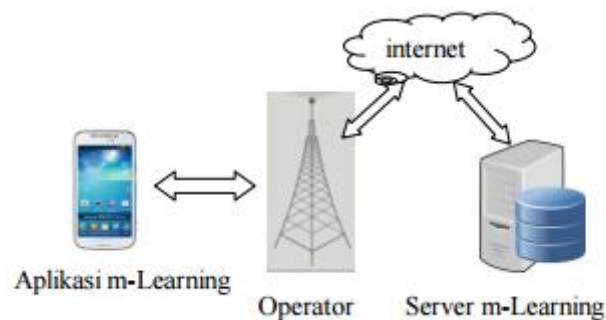


FIGURE 7: M-LEARNING ARCHITECTURE (MARTONO AND NURHAYATI, 2014)

Figure 07 (Martono and Nurhayati, 2014) shows the architecture of the mobile learning.

any of mobile technologies and platforms are used to develop m-learning applications. Different implementations of mobile learning has different characteristics. There are 3 components that consists in mobile learning application (Martono and Nurhayati, 2014).

1. Mobile devices
2. Software
3. Content of application

In a learning activity there are 3 roles that m-learning plays (Martono and Nurhayati, 2014),

1. Optional supplement
2. Complement
3. Supplement

Android application is a new operating system in mobile communication devices. It provides an open platform for developers to create their own applications (Martono and Nurhayati, 2014).

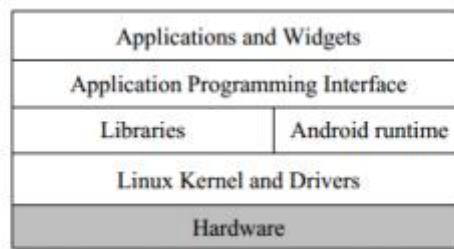


FIGURE 8: ANDROID ARCHITECTURE (MARTONO AND NURHAYATI, 2014)

Figure 08 (Martono and Nurhayati, 2014) will shows the architecture of the android operating system.

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:background="@color/myColor">
    <EditText
        android:id="@+id/EditText01"
        android:layout_height="wrap_content"
        android:layout_width="fill_parent"
        android:inputType="numberSigned|numberDecimal">
    </EditText>
</LinearLayout>
```

FIGURE 9: DESIGN LAYOUT OF AN ANDROID MOBILE APPLICATION (MARTONO AND NURHAYATI, 2014)

Above figure (Martono and Nurhayati, 2014) shows a design layout of an android application.

### 2.1.2 Similar Mobile Applications

- Learning Catalytics

Learning Catalytics features open-ended, multiple-choice, and image upload questions that encourage collaboration among students for team-based and group learning. It also enables instructors to monitor student responses and keep tabs on how well students understand what is being taught and discussed (Mazur, Lukoff and King, 2013).

#### Features of Learning Catalytics

- Open-ended question
- Find out where students are struggling

#### Limitations of Learning Catalytics

- Does not send questions to students who can do, but it only share in a common way.

- StudyBlue

StudyBlue provides a platform for learning, for learning tools including flashcards, and study guides (Klündt, 2009).

#### Features of StudyBlue

- Create and customize own flashcards
- Compare the works done with others in your class
- Study modes and progress tracking

#### Limitations of Learning Catalytics

- Does not feel user-friendly

- GoConqr

GoConqr is a social learning platform act as an active learning community that creates and shares quality learning content.

#### Features of GoConqr

- Mind maps
- Create flashcards
- Quizzes
- Notes
- Slides

	Proposed system	StudyBlue	Learning Catalytics	GoConqr
Flashcards	✗	✓	✗	✓
Notes	✗	✗	✓	✓
Quizzes	✓	✗	✓	✓
Answers	✓	✗	✓	✗
Slides	✗	✗	✗	✓
Search questions	✓	✗	✗	✗
Message	✓	✗	✗	✓
Search best students	✓	✗	✗	✗
Rate best answers	✓	✗	✗	✗
Progress tracking	✗	✓	✗	✗

FIGURE 10: COMPARISON TABLE

Above Figure 10 shows the comparison between similar mobile applications and the proposed system. Above comparison will provide the clarification of the proposed system why it is unique.

### 2.2.3 Conclusion

According to above literature review that done, using m-learning for university is a positive and productive way. It helps in many situations that more than can think of. Above comparison between the proposed system and existing similar applications, proves the proposed system would help in many ways. The proposed system's messaging system is a unique function that existing similar systems don't have. Existing similar systems has a common function called make flashcards. It contains important information about learning materials, modules, and about sources that could be helpful. Some similar systems have a feature of meeting together in personally and discussing what students have shared among the community. As well as the same feature has in the proposed system but in a different aspect. When a user post a question the proposed system will automatically find the category of the question and it will send to students who are eligible to answer that question. It is more user-friendly than in that feature that has in a similar system. So when it is coming to mobile applications user-friendliness is a key for being that application a success. So the proposed system is more user-friendly than existing similar applications and it is very useful.

### 3. Project Plan

To do the project planning I have designed project breakdown and the Gantt chart. To get a clear about what are the functions that proposed system is going to deliver, work breakdown structure is created.

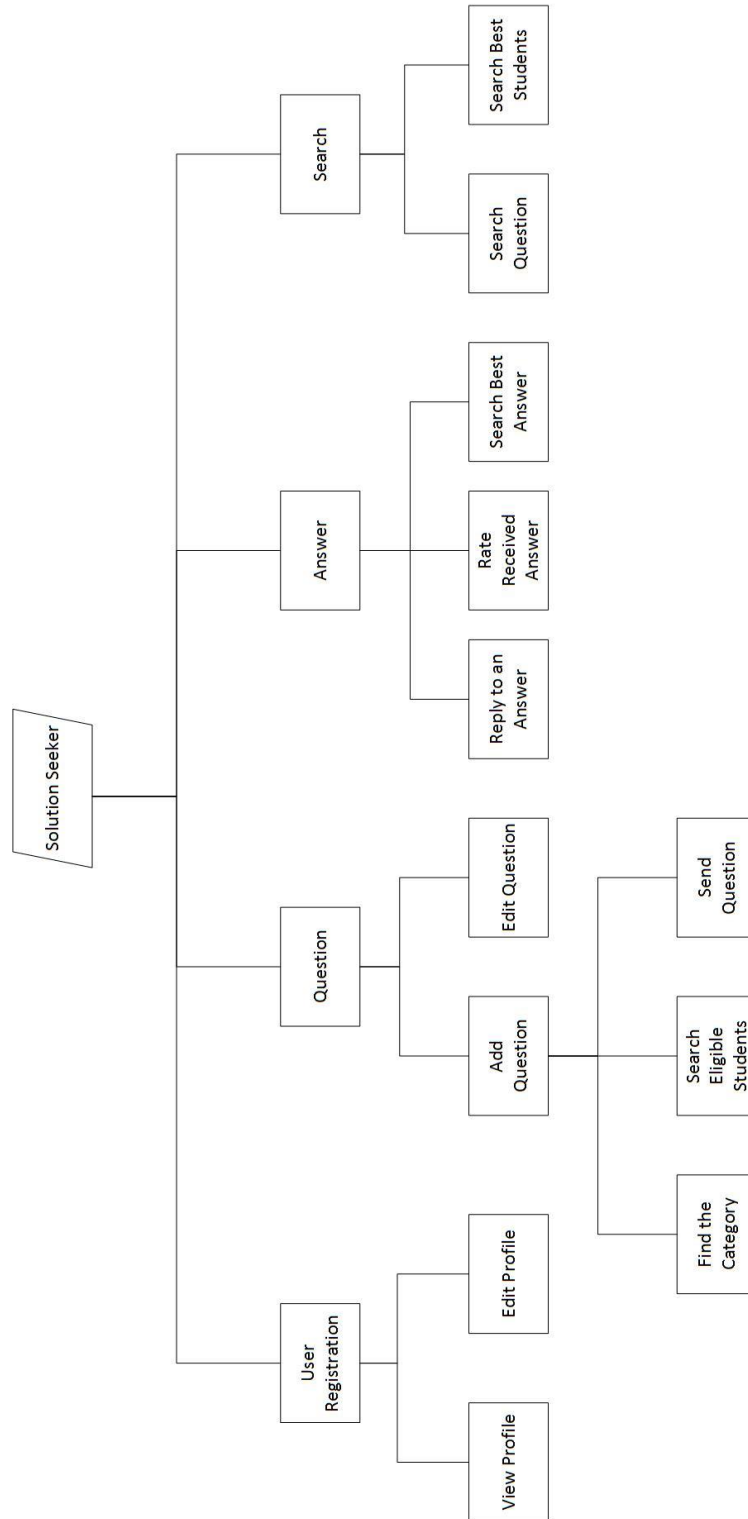


FIGURE 11: PROJECT BREAKDOWN STRUCTURE

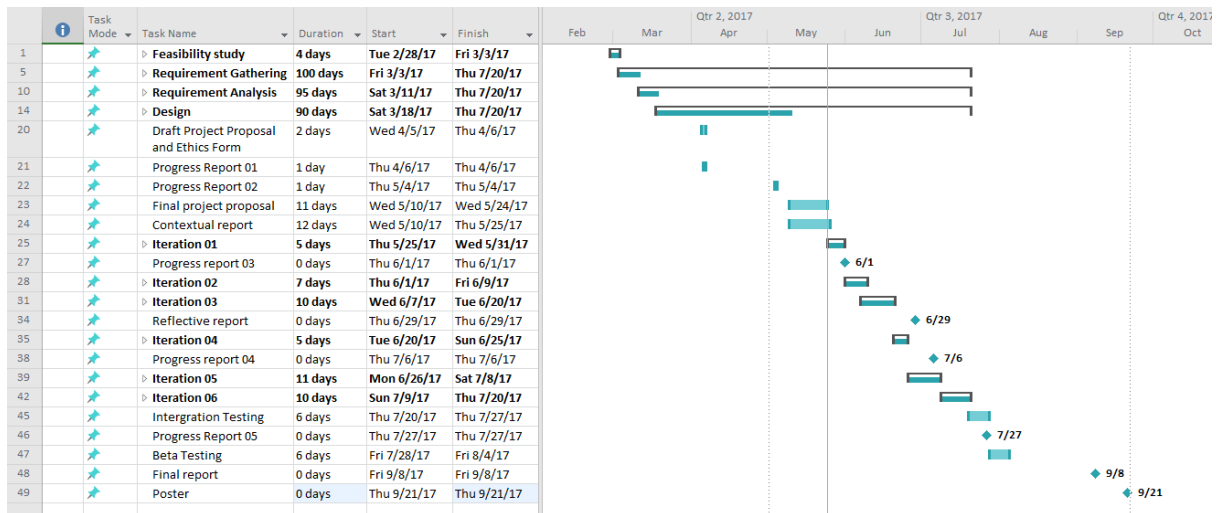


FIGURE 12: GANTT CHART

The Gantt chart is designed according to the chosen life cycle model which is Iterative Model. Above Figure 12 is without expanding the tasks. Since the Gantt chart is big, it has been separate into 4 parts and have shown in 4 figures.

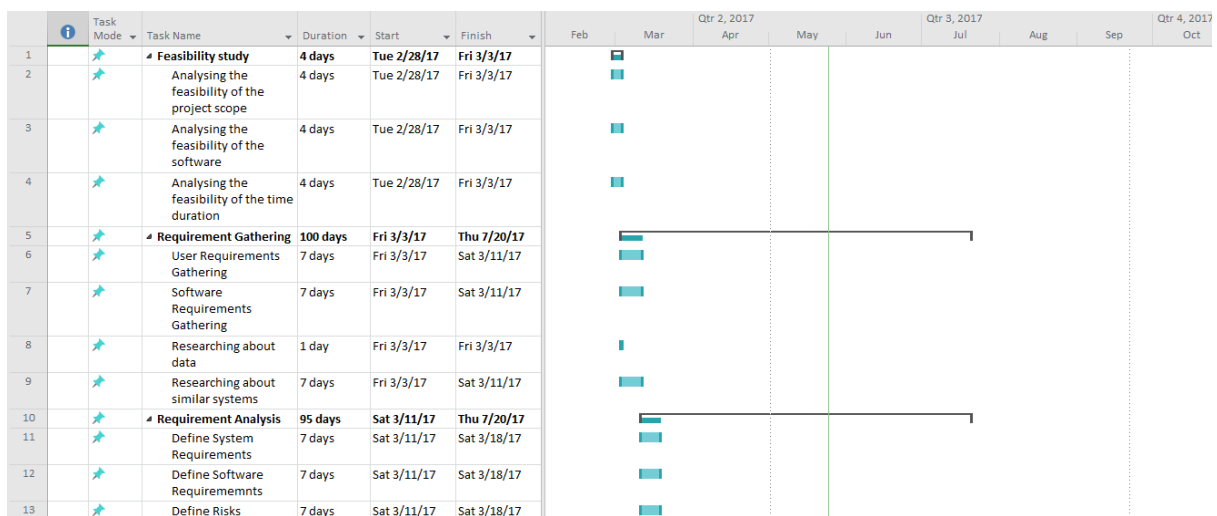


FIGURE 13: GANTT CHART 1.1

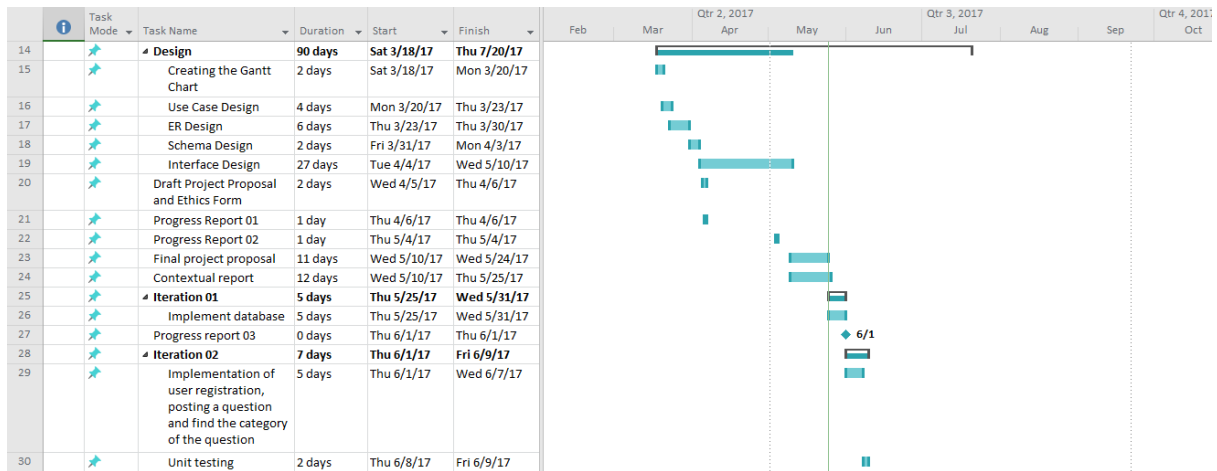


FIGURE 14: GANTT CHART 1.2

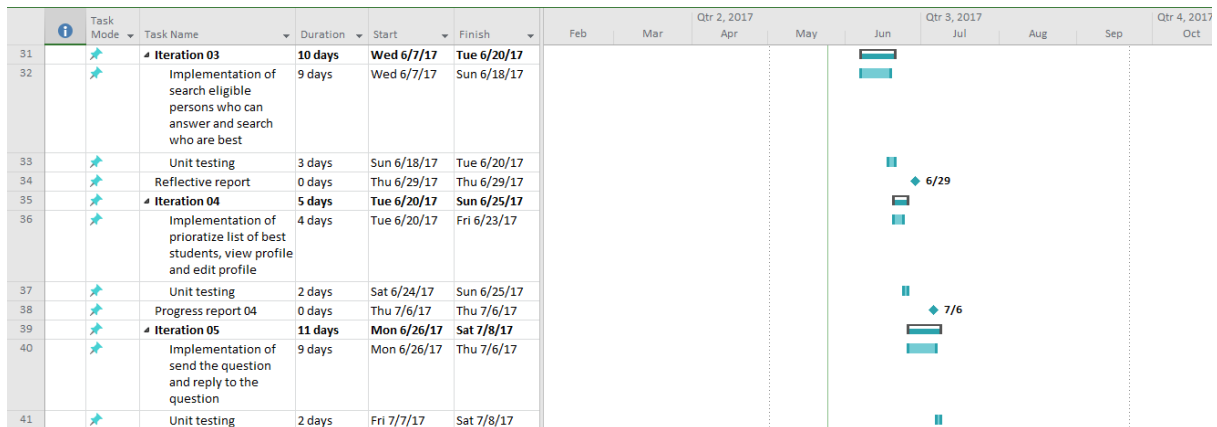


FIGURE 15: GANTT CHART 1.3

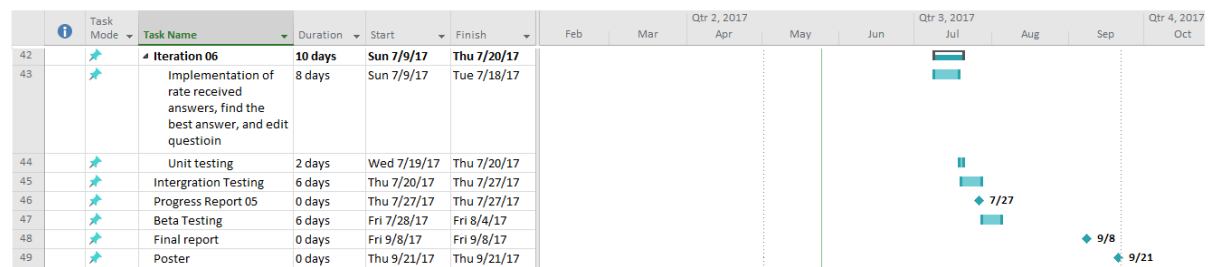


FIGURE 16: GANTT CHART 1.4

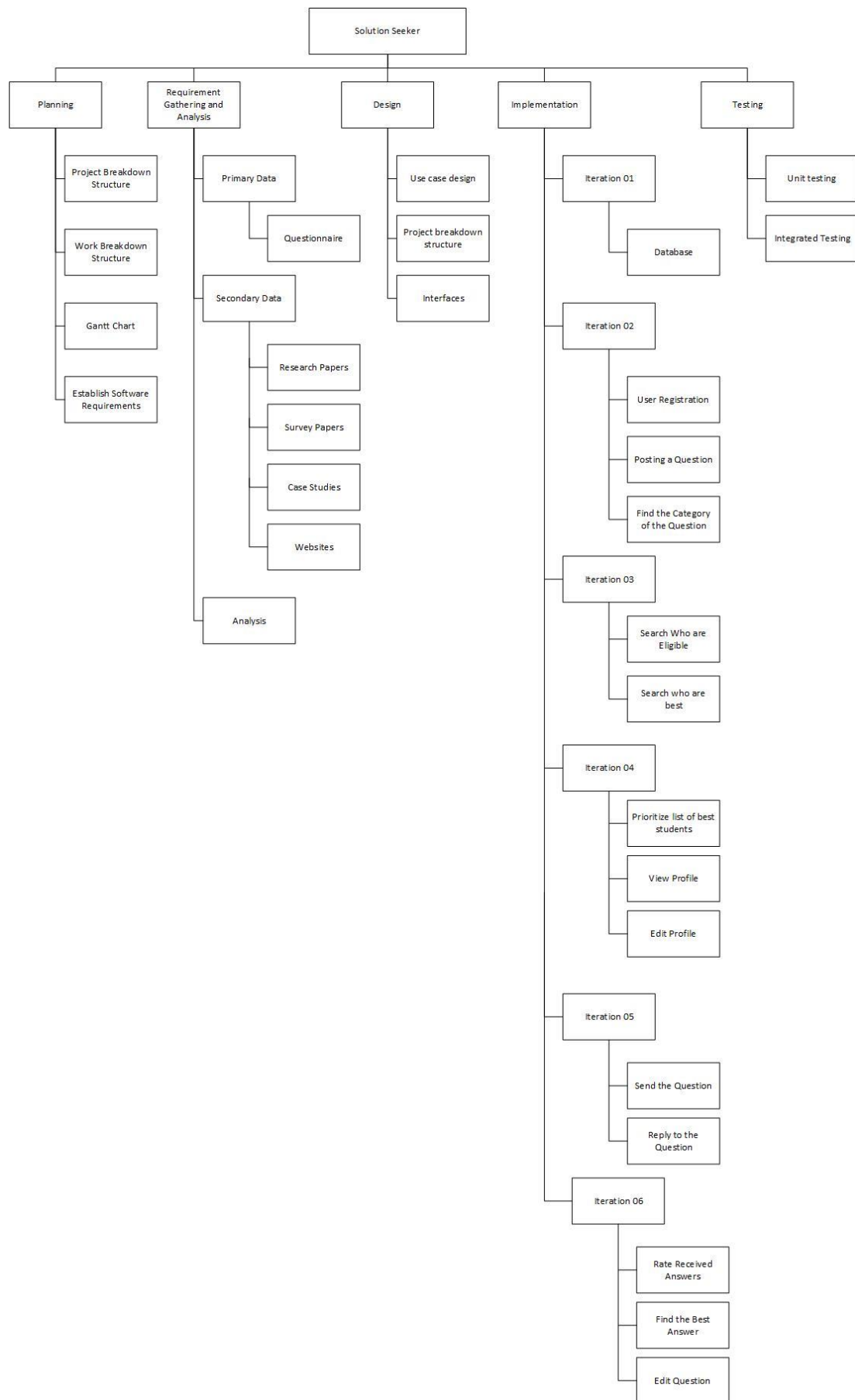


FIGURE 17: WORK BREAKDOWN STRUCTURE



## 4. Methodology

### 4.1 Chosen methodology

According to the iterative model methodology, the proposed system will be developed. Initially the database will be implemented and tested. And then functions by functions will be implemented and tested.

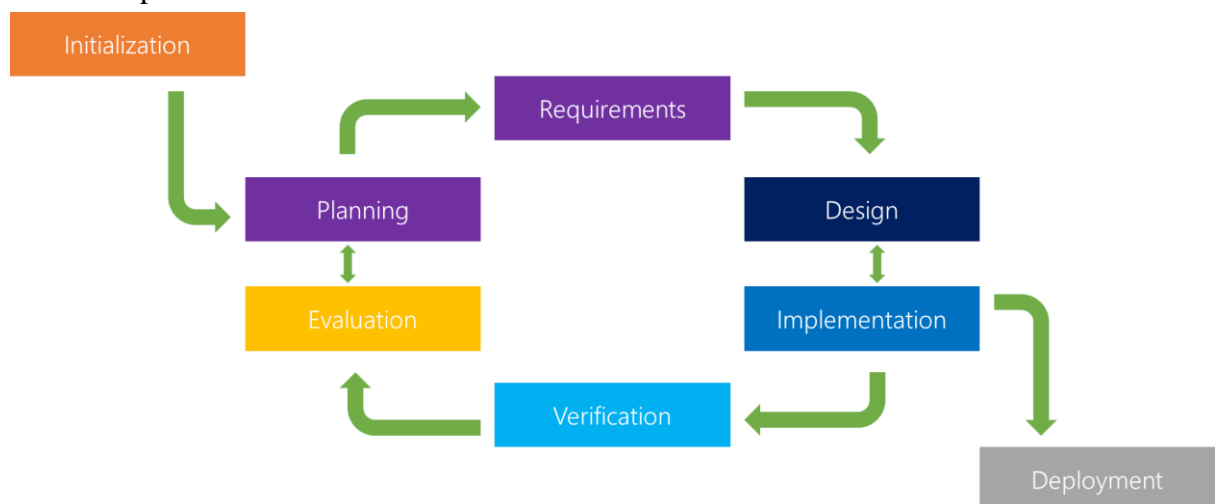


FIGURE 18: ITERATIVE MODEL (POWELL-MORSE, 2016)

As above Figure 18 (Powell-Morse, 2016) shows going through iteration by iteration helps to improve functions when it get repeatedly overlook and used in each implementation. It gets adapt to any changes ever need. If found an error while testing, no need to travel all the way up to requirement gathering and analysis as in waterfall method. Errors can be corrected where ever in need to be corrected whether it is a designing error or an implementation error.

### 4.2 Planning of the System

To do the planning of the proposed system following structures are designed.

- Project breakdown structure
- Work breakdown structure

To do the time planning Gantt chart is designed.

To plan what are the functions that proposed system is going to develop, project breakdown will give the clear idea for that. It has been breakdown into 4 main components.

- User registration
- Question
- Answer
- Search

These 4 components will be breakdown further more into 12 sub components. To plan what functions going to be developed in what manner, the work breakdown structure will show how the work will be done. But not only functions, requirement gathering and analysis, design, and testing will be done according work breakdown structure.

To do those works time has to be planned efficiently. The Gantt chart will guide, through the whole project to be done efficiently. Gantt chart will be follow the iterative model. All the tasks will be maintained and arranged according to iterative model.

### 4.3 Requirement Gathering and Analysis

Requirements are gathered as primary data and secondary data. A questionnaire has made and shared among social groups to collect primary data. The questionnaire is based on subjects that students have studied in 1<sup>st</sup> year and 2<sup>nd</sup> year. It includes questions such as the difficulties faced when searching for an answer, what are the hardest subjects, what are the methods that used to seek answers. Below will be the results of the questionnaire.

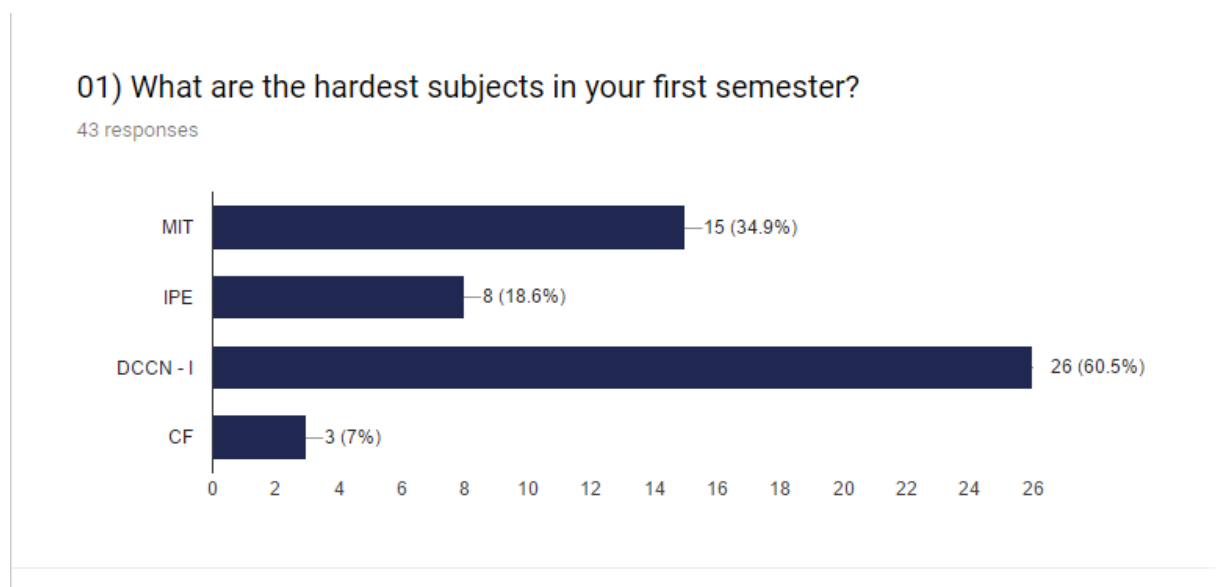


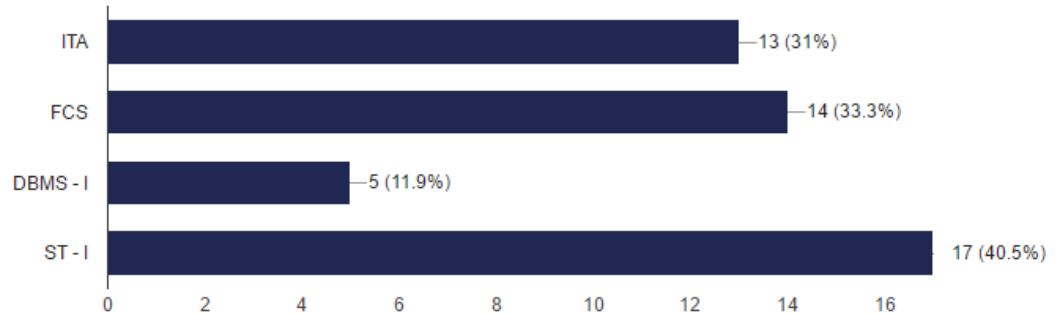
FIGURE 19: QUESTIONNAIRE RESULT 01

Above Figure 19 will give an idea about 1<sup>st</sup> year 1<sup>st</sup> semester subjects' hardness. According to above statistics Data Communication and Computer Networking - I is hard for students. Computer Fundamentals is the easiest subject as shown in above figure 19.

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### 02) What are the hardest subjects in your 2nd semester?

42 responses



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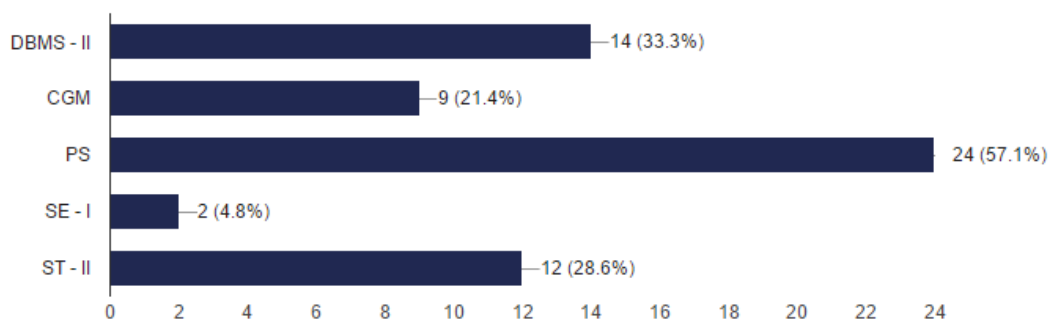
FIGURE 20: QUESTIONNAIRE RESULT 02

Above Figure 20 is about 1<sup>st</sup> year 2<sup>nd</sup> semester subject hardness. Apparently Software Technology – I is the hardest subject for lot of students (40.5% of the sample population) and Database and Management System – I is hard for less people amount.

---

### 03) What are the hardest subjects in your 3rd semester?

42 responses



---

FIGURE 21: QUESTIONNAIRE RESULT 03

Above Figure 21 will give the idea about 2<sup>nd</sup> year 1<sup>st</sup> semester (3<sup>rd</sup> semester) subjects hardness. Above statistics shows Probability and Statistics is the hardest subject for lot of students (57.1% of sample population). Software Engineering – I is hard for less students, so it is the easiest subject among other subjects.

#### 04) What are the hardest subjects in your 4th semester?

35 responses

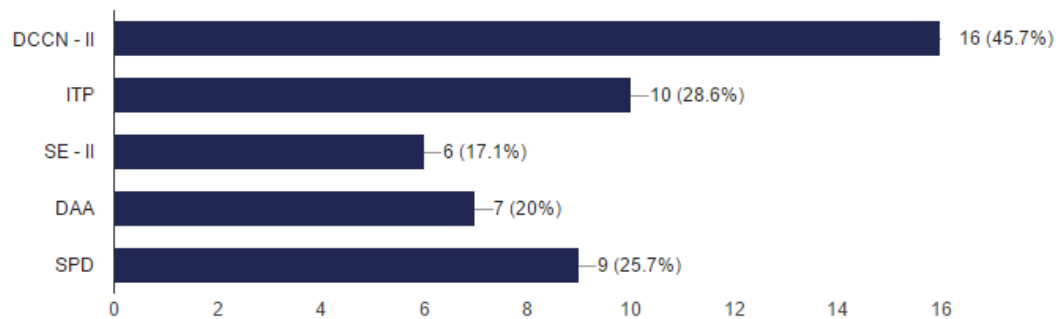


FIGURE 22: QUESTIONNAIRE RESULT 04

Above figure shows 2<sup>nd</sup> year 2<sup>nd</sup> semester (4<sup>th</sup> semester) subject hardness to the students. Same as 1<sup>st</sup> year 1<sup>st</sup> semester Data Communication and Computer Networking subject is hard for almost half of the batch (45.7% of the sample population). But not like same as 2<sup>nd</sup> year 1<sup>st</sup> semester in 2<sup>nd</sup> year 2<sup>nd</sup> semester Software Engineering subject is the easiest subject for students.

#### 05) Rate these subjects according to your 1st semester performance.

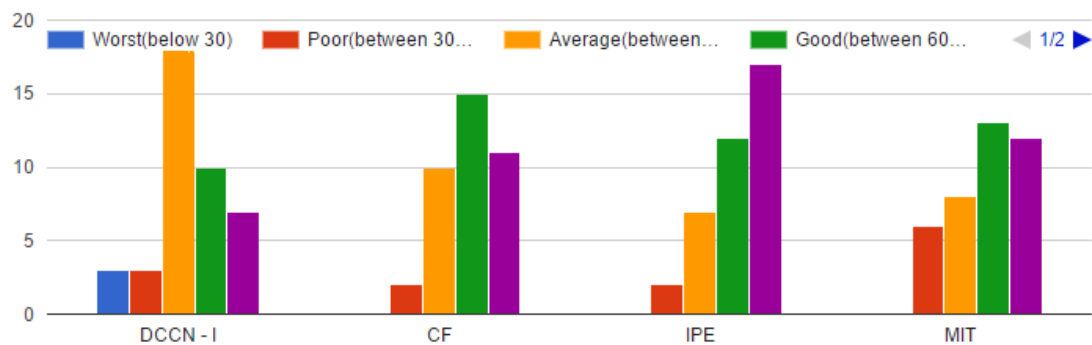


FIGURE 23: QUESTIONNAIRE RESULT 05

06) Rate these subjects according to your 2nd semester performance.

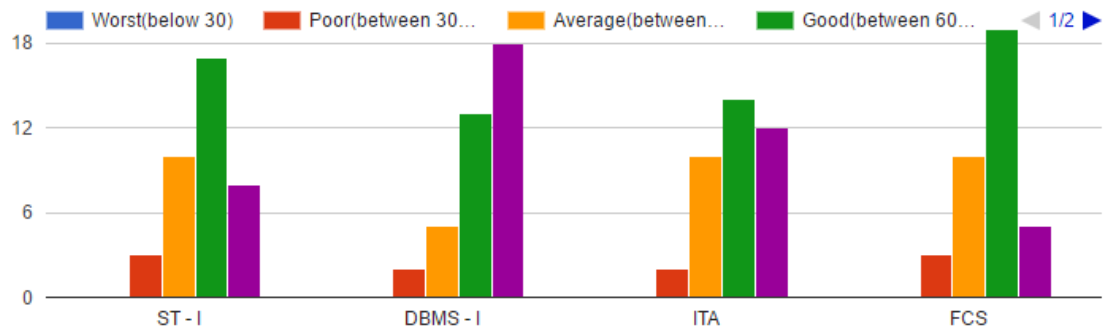


FIGURE 24: QUESTIONNAIRE RESULT 06

Above Figure 24 shows 1<sup>st</sup> year 2<sup>nd</sup> semester performance of students. Students have shown very interested in Foundations of Computer Science (FCS) subject. Lot of students have passes with good marks. DBMS – I subject has shown the best interested subject among other subjects. Students have passes with best marks in DBMS – I subject. Lowest mark rate has also shown in DBMS – I subject.

07) Rate these subjects according to your 3rd semester performance.

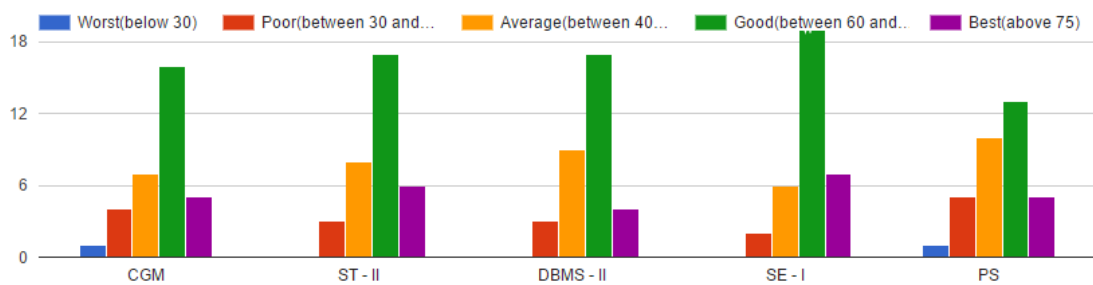


FIGURE 25: QUESTIONNAIRE RESULT 07

Above Figure 25 will show 2<sup>nd</sup> year 1<sup>st</sup> semester performance of students. At once see the above statistic, all the subjects except Probability and Statistics (PS) has shown a good passing rate. Computer Graphics and Multimedia (CGM) and Probability and Statistics (PS) has worst marking rate.

08) Rate these subjects according to your 4th semester performance.

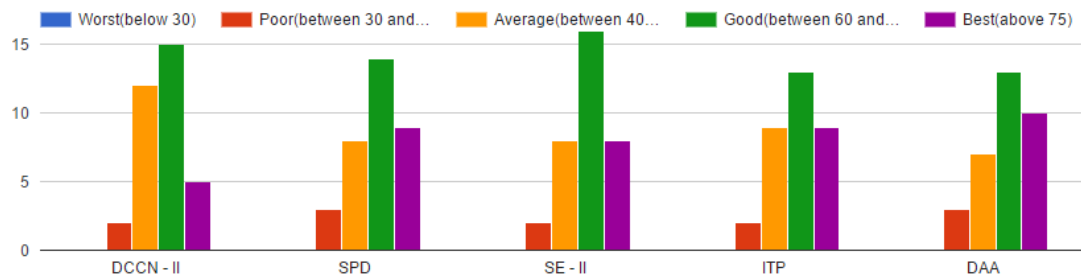


FIGURE 26: QUESTIONNAIRE RESULT 08

Above figure 26 will give statistics about 2<sup>nd</sup> year 2<sup>nd</sup> semester performance of students. Apparently all 5 subjects has good passing rate. All those 5 subjects have an average passing rate which proves students have been good in all 5 subjects.

09) In case of difficulty, how you seek for solutions?

43 responses

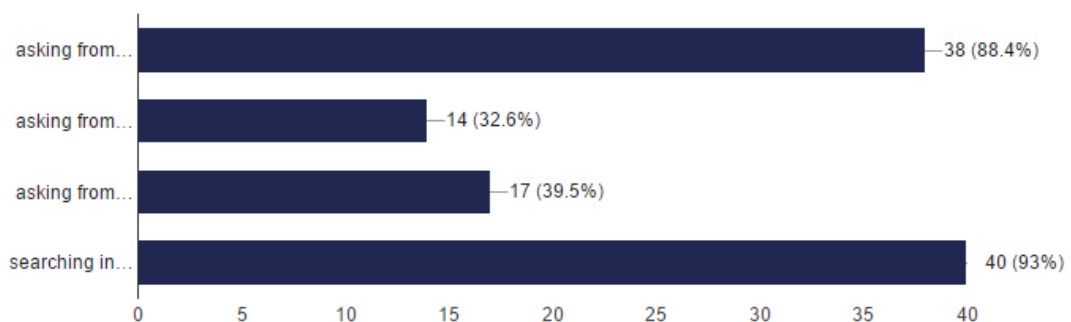


FIGURE 27: QUESTIONNAIRE RESULT 09

Above Figure 27 will show, how students seek answers for questions. 4 options that given in the questionnaire are asking from a colleague, asking from a senior student, asking from a lecturer, and searching in the internet. Most of students tend to search in internet (93% of sample population) and ask from a colleague (88.4 of sample population). Less leads in to asking from a senior student.

### 10) What do you think about m-learning?

42 responses

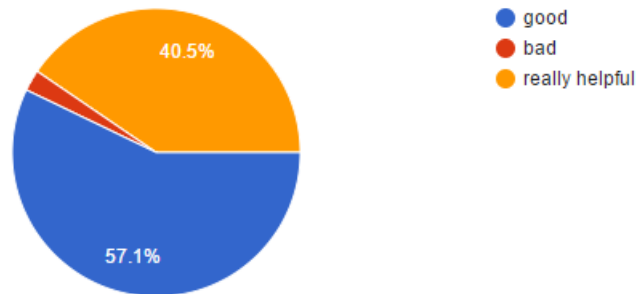


FIGURE 28: QUESTIONNAIRE RESULT 10

Above Figure 28 will give as a percentage how students think about m-learning. Is it good or bad?

### 11) What kind of difficulties that you faced when you searching for an answer?

27 responses

Some times there have many answers.can't identify correct answer
Some times there have many answers.can't identify correct answer
Getting the exact answer for the questions
have to find alot to get particular answers
not being sure if the answer is the right one
Hard to get what i really want to the point
sometimes the answer from the internet is way more complicated to understand perhaps we'll have to wait till the next day to clear the doubt which came up in the studying time.
Not sure whether sources are reliable.
searched for answers but needed more explanation
Multi answers
We don't know how the answers will be marked and we don't get exact answer according to the expectation of the marking.

FIGURE 29: QUESTIONNAIRE RESULT 11

Above Figure 29 shows what are the difficulties that faced when searching for an answer. Most of students have replied “not reliable source”. So students are unsure when they seek answer whether they find 100% accurate answers or completely other sided of it.

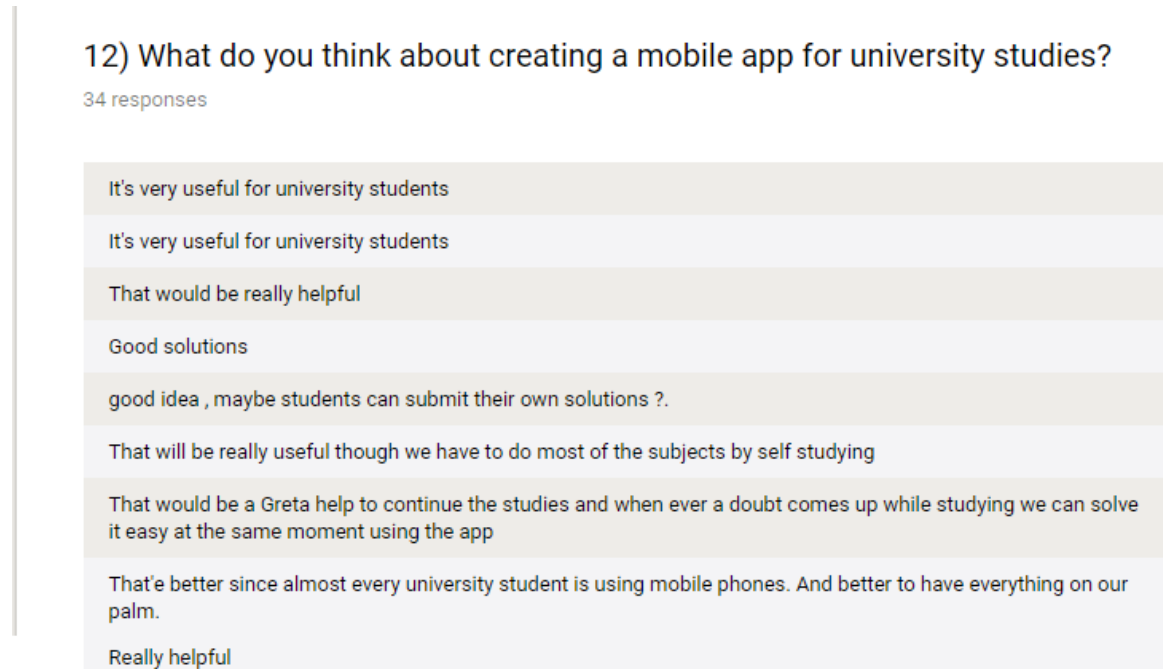


FIGURE 30: QUESTIONNAIRE RESULT 12

Above Figure 30 gives responses to the question asked “What do you think about creating mobile app for university studies?”. Lot of positive results have received.

To collect secondary data, research papers, survey papers, case studies, and some websites are read and reviewed. They are searched on “M-learning”, “Mobile application to university students”, and “Mobile Social Networking”.



## 4.4 Design

The analyzed requirements will be separated into further more to plan the timeline and the resources. To plan the timeline of the proposed system, a Gantt chart and to plan the interior of the system, a use case diagram will be designed. To implement the database an ER diagram will be designed. And all the interfaces of the system will be designed by android studio.

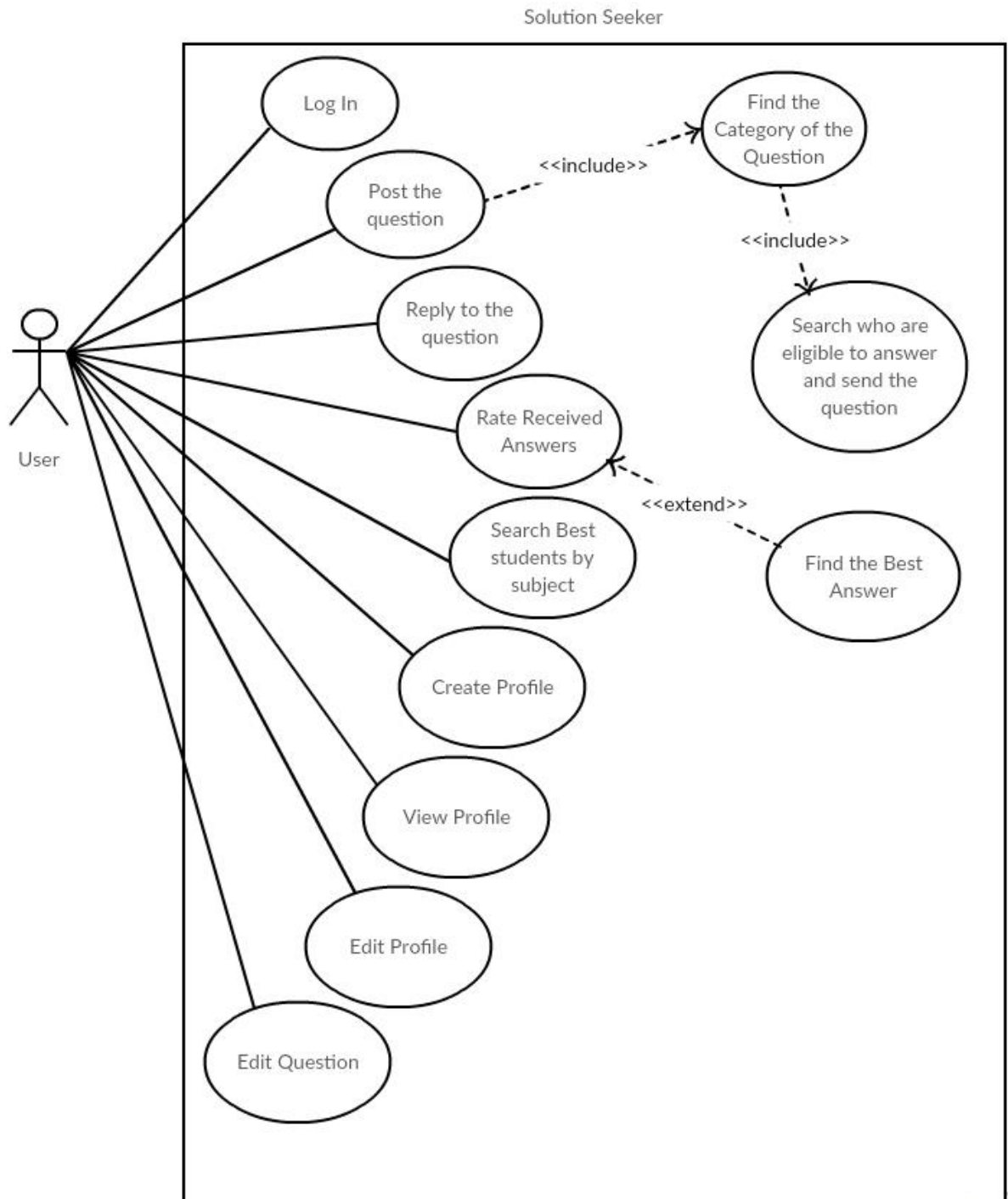


FIGURE 31: USE CASE DESIGN

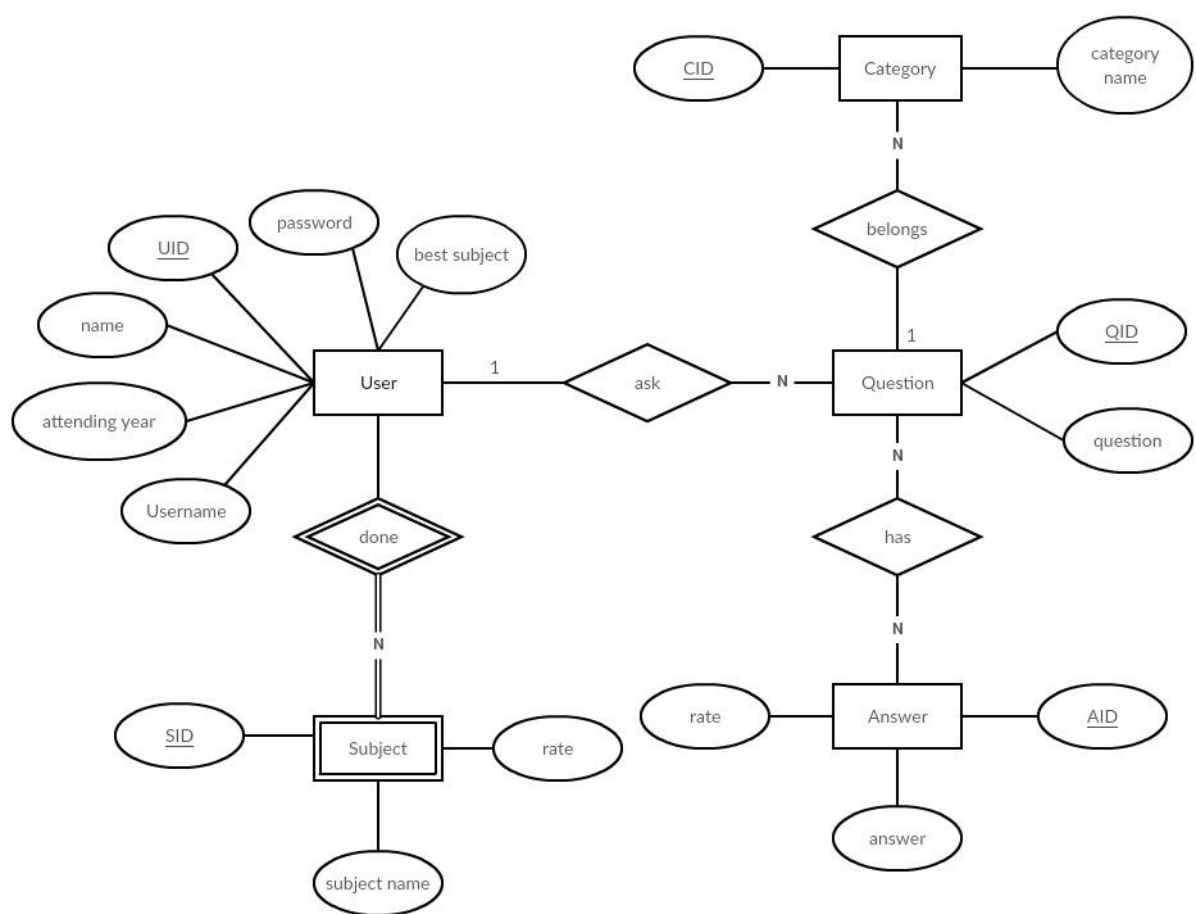


FIGURE 32: ER DIAGRAM

## 4.5 Implementation

The proposed system will be fully implemented by android studio. All functions will be implement according to the iterative model.

1. Iteration 01
  - Database
2. Iteration 02
  - User registration
  - Posting a question
  - Find the category of the question
3. Iteration 03
  - Search who are eligible to answer
  - Search who are best
4. Iteration 04
  - Prioritize list of best students
5. Iteration 05
  - Send the question
  - Reply to the question
6. Iteration 06
  - Rate received answers
  - Find the best answer

There will be algorithms for below functions.

- Find the category of the question
- Find who are eligible to answer
- Find the best answer
- Prioritize list

## 4.6 Testing

To monitor through all processes, after every process finished unit testing will be done to check the quality of the process. At the end of the implementation phase integrated testing will be done to check all the functions are working accurately.

## 4.7 Evaluation

After the proposed system developed, the developed android application will be given to a proper audience to check the android application is working properly. It is a part of beta testing that I have planned to do.

As the audience campus students will be chosen and the proposed system (the android application) will be given to them to test. After the giving the android application to them to check, feedbacks will be taken to improve further more. So it will be properly evaluated.

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## Appendices

This appendix is about Questionnaire that did to collect primary data for requirement gathering.

**1. 01) What are the hardest subjects in your first semester?**

*Check all that apply.*

- ☐ MIT
- ☐ IPE
- ☐ DCCN - I
- ☐ CF

**2. 03) What are the hardest subjects in your 2nd semester?**

*Check all that apply.*

- ☐ ITA
- ☐ FCS
- ☐ DBMS - I
- ☐ ST - I

**3. 03) What are the hardest subjects in your 3rd semester?**

*Check all that apply.*

- ☐ DBMS - II
- ☐ CGM
- ☐ PS
- ☐ SE - I
- ☐ ST - II

**4. 04) What are the hardest subjects in your 4th semester?**

*Check all that apply.*

- ☐ DCCN - II
- ☐ ITP
- ☐ SE - II
- ☐ DAA
- ☐ SPD



5. 05) Rate these subjects according to your 1st semester performance.

Mark only one oval per row.

	Worst(below 30)	Poor(between 30 and 40)	Average(between 40 and 60)	Good(between 60 and 75)	Best(above 75)
DCCN - I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IPE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MIT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. 06) Rate these subjects according to your 2nd semester performance.

Mark only one oval per row.

	Worst(below 30)	Poor(between 30 and 40)	Average(between 40 and 60)	Good(between 60 and 75)	Best(above 75)
ST - I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DBMS - I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ITA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FCS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. 07) Rate these subjects according to your 3rd semester performance.

Mark only one oval per row.

	Worst(below 30)	Poor(between 30 and 40)	Average(between 40 and 60)	Good(between 60 and 75)	Best(above 75)
CGM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ST - II	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DBMS - II	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SE - I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. 08) Rate these subjects according to your 4th semester performance.

Mark only one oval per row.

	Worst(below 30)	Poor(between 30 and 40)	Average(between 40 and 60)	Good(between 60 and 75)	Best(above 75)
DCCN - II	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SPD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SE - II	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ITP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DAA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. 09) In case of difficulty, how you seek for solutions?

Check all that apply.

- ☐ asking from a fellow colleague
- ☐ asking from a senior student
- ☐ asking from a lecturer
- ☐ searching in internet

10. 10) What do you think about m-learning?

Mark only one oval.

- ☐ good
- ☐ bad
- ☐ really helpful

11. 11) What kind of difficulties that you faced when you searching for an answer?

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12. 12) What do you think about creating a mobile app for university studies?

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