

**KNOWLEDGE TEST-ANDROID APP FOR ONLINE QUIZ**

**BY**

**MD. MUSFIQUR RAHMAN**

**ID: 162-15-8035**

**RIKTA PARVIN**

**ID: 162-15-8054**

**AND**

**AHMED KABIR REDOY**

**ID: 162-15-8055**

This Report Presented in Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science in Computer Science and Engineering

Supervised By

**Shaon Bhatta Shuvo**

Senior Lecturer

Department of CSE

Daffodil International University

Co-Supervised By

**Md. Juel Mia**

Lecturer

Department of CSE

Daffodil International University



**DAFFODIL INTERNATIONAL UNIVERSITY**

**DHAKA, BANGLADESH**

**MAY 2019**

## **APPROVAL**

This Project titled “**Knowledge Test Android App**”, submitted by Md. Musfiqur Rahman, ID No: 162-15-8035, Rikta Parvin, ID No: 162-15-8054, Ahmed Kabir Redoy, ID No: 162-15-8055 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 3<sup>rd</sup> May 2019.

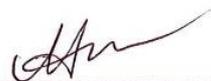
### **BOARD OF EXAMINERS**



**Dr. Syed Akhter Hossain**  
**Professor and Head**

Department of Computer Science and Engineering  
Faculty of Science & Information Technology  
Daffodil International University

**Chairman**



**Nazmun Nessa Moon**  
**Assistant Professor**

Department of Computer Science and Engineering  
Faculty of Science & Information Technology  
Daffodil International University

**Internal Examiner**



**Abdus Sattar**  
**Assistant Professor**

Department of Computer Science and Engineering  
Faculty of Science & Information Technology  
Daffodil International University

**Internal Examiner**



**Dr. Mohammad Shorif Uddin**  
**Professor**

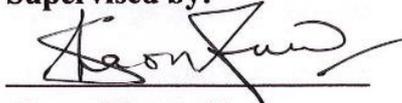
Department of Computer Science and Engineering  
Jahangirnagar University

**External Examiner**

## DECLARATION

We hereby, with all responsibility declare that, this project has been done by us under the supervision of **Shaon Bhatta Shuvo**, Senior Lecturer, Department of CSE, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

**Supervised by:**



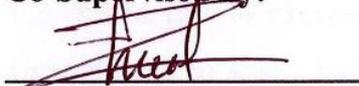
**Shaon Bhatta Shuvo**

Senior Lecturer

Department of Computer Science and Engineering

Daffodil International University

**Co-Supervised By:**



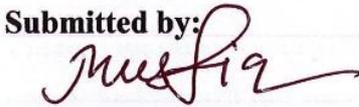
**Md. Juel Mia**

Lecturer

Department of Computer Science and Engineering

Daffodil International University

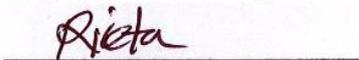
**Submitted by:**



**(Md. Musfiqur Rahman)**

ID: 162-15-8035

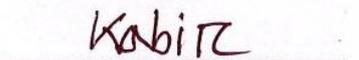
Department of Computer Science and Engineering



**(Rikta Parvin)**

ID: 161-15-8054

Department of Computer Science and Engineering



**(Ahmed Kabir Redoy)**

ID: 162-15-8055

Department of Computer Science and Engineering

## ACKNOWLEDGEMENT

Firstly, we express our heartiest thanks and gratefulness to almighty Allah for His divine blessing makes us possible to complete the final year project successfully.

We really grateful and wish our intensive indebtedness to **Shaon Bhatta Shuvo, Senior Lecturer, Department of CSE, Daffodil International University**, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “*Android Apps Development*” inspired us carrying out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Dr. Syed Akhter Hossain, Head, Department of CSE, Daffodil International University**, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like thanks our course mate of Daffodil International University, who took part in this discuss and share plan while we completing the work

Finally, we must acknowledge with due respect the constant support and patience, inspiration, prayer and love of our parents.

## **ABSTRACT**

Nowadays android is popular platform. Android user increase blinks of eye. There are some device which Allows user to flexibly complete task those device are personal computer, laptop. We try to replace those devices in case of some task by android mobile. So we think we develop a platform for soothe administrative work as well as fulfill user requirement. Then people can complete task by smart phone. So we develop online quiz application which is totally android base application. The prime objective of this app, anyone can take quiz for any individual through internet. In this quiz there are multiple choice questions from different topics for interviewee. And give a time limit for each quiz. And all question and answer also time set by administrator, and the apps generate the exam mark automatically

## TABLE OF CONTENTS

<b>CONTENT</b>	<b>PAGE NO</b>
Acknowledgements	ii
Abstract	iii
List of figure	vi
List of table	vii
<b>CHAPTER</b>	<b>PAGE NO</b>
<b>CHAPTER 1: INTRODUCTION</b>	<b>1-3</b>
1.1 Introduction	1
1.2 Motivation	1
1.3 Objectives	1
1.4 Expected Outcome	2
1.5 Report Layout	2
<b>CHAPTER 2: BACKGROUND</b>	<b>4-5</b>
2.1 Introduction	4
2.2 Related Works	4
2.3 Comparative Studies	4
2.4 Scope of the Problem	4
2.5 Challenges	5
<b>CHAPTER 3: REQUIREMENT SPECIFICATION</b>	<b>6-10</b>
3.1 Business Process Modeling	6
3.2 Requirement Collection and Analysis	6
3.3 Use Case Modeling and Description	7
3.4 Logical Data Model	9
3.4 Design Requirements	10

<b>CHAPTER 4: DESIGN SPECIFICATION</b>	<b>11-20</b>
4.1 Front-end Design	11
4.2 Back-end Design	19
4.3 Interaction Design and UX	19
4.4 Implementation Requirements	20
<b>CHAPTER 5: IMPLEMENTATION AND TESTING</b>	<b>21-27</b>
5.1 Implementation of Database	21
5.2 Implementation of Front-end Design	21
5.3 Implementation of Interactions	26
5.4 Testing Implementation	26
5.5 Test Results and Reports	27
<b>CHAPTER 6: CONCLUSION AND FUTURE SCOPE</b>	<b>29</b>
6.1 Discussion and Conclusion	29
6.2 Scope for Further Developments	29
<b>REFERENCE</b>	<b>30</b>
<b>APPENDIX</b>	<b>31</b>

# LIST OF FIGURES

<b>FIGURES</b>	<b>PAGE NO</b>
Figure 3.1.1: Business Process Model	6
Figure 3.3.1: Use Case Diagram	7
Figure 3.4.1: Context Diagram	9
Figure 3.4.2: Entity Relationship Diagram	10
Figure 4.1.1: Sign In Screen	11
Figure 4.1.2: Sign Up Screen	12
Figure 4.1.3: Category Screen	13
Figure 4.1.4: Start Test Screen	14
Figure 4.1.5: Answering Question Screen	15
Figure 4.1.6: Try Again Button	16
Figure 4.1.7: Ranking Screen	17
Figure 4.1.8: Individual Score Board	18
Figure 4.3.1: The 7 Factors that Influence User Experience	19
Figure 5.1.1: Implementation of Firebase Database	21
Figure 5.2.1: Implementation of Sign Up	22
Figure 5.2.2: Implementation of Sign In	23
Figure 5.2.3: Implementation of Answering Questions	24
Figure 5.2.4: Implementation of Auto Score Generator	25

## LIST OF TABLE

<b>TABLE</b>	<b>PAGE NO</b>
Table 5.5.1: System Testing Table	27
Table 5.5.2: User Acceptance Table	28

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Nowadays Smartphone is a part of our life. Most of them are android operating system. Because Android based Os are popular because it's free for everyone. A survey had done by light castle partner and said that in Dhaka Android user is 57%, windows phone user is 7%, ios user is 16%, and feature phone 19%, firefox phone user is 1% [1]. That's why project application is developed by android os.

Our application name is **Knowledge Test**. Administrator can take exam in an effective way and there no loss of time for checks the exam paper. It has automated system for checking the exam paper. Administrator can add, delete or edit the question paper. And interviewee can attend the exam via android based smart phone. This application is also user friendly.

### 1.2 Motivation

Behind attempting this project so many things motivated us. Firstly, each three member of our group were uniformly huge interested in Android Development. thus we wanted to do something based on Android. Then we sat together and planned this idea of making an online quiz app. There are so many quiz apps are available in playstore. Most of them are for fun purposes. We asked ourselves what if we can have the facility by Online Quiz App? We found it would be more efficient, time-saving alongside simple.

Cause most of the organization recruitment and varsity class test are paper based. It's a time consuming and costly process. After exam administrator or teacher must check the exam paper for marking. It's also time consuming. Thus, we stepped forward and made this platform via android os for avoid those circumstances.

### 1.3 Objectives

Currently most organization exam is paper based. We proposed a system avoid some circumstances. The objective of proposed system is given below:

- Anyone can take exam from anywhere
- User friendly environment and reduces manual effort

- No need to print question paper. Administrator can upload the question on database. Administrator can add, delete or edit the question
- Automated mark generates system.
- And generate a report based on score

#### **1.4 Expected Outcome**

KNOWLEDGE TEST is an online quiz app, an online platform that provides facility to take exam through internet.

Until all organization recruitment and varsity exam are paper based. This process is costly and time consuming. Valuable time wasted in printing question and checks the exam paper.

But, now these things will be changed. In online quiz system administrator add question on the apps and also add the answer. After submitting the answer paper the system matched the answer paper with given answer by administrator. And auto generates the number. This process saves time.

This system has following features:

- Interviewee can attend exam easily via smart phone which has android base operating system.
- No need to check answer paper. its automatically check by system
- No need of printing question paper
- Interviewee can see the question answer after submitting the answer paper

#### **1.5 Report Layout**

The report is partitioned into five chapters. Each chapter deals with the different perspectives of

Each chapter has various parts explaining in detail.

##### **Chapter 1: Introduction**

In This chapter discussion about the important theoretical concepts behind our project. Those are project motivation, objectives and expected outcomes.

## **Chapter 2: Background**

In This chapter give information about our project related works, comparative studies, and the scope of the problem, challenges.

## **Chapter 3: Requirement Specification**

This chapter discusses our project Business Process Modeling, requirement collection and analysis, use case modeling and description, logical data model and design requirements.

## **Chapter 4: Design Specification**

This chapter discusses our project front-end design, back-end design, interaction design and UX and implementation requirements.

## **Chapter 5: Implementation and Testing**

This chapter discusses about the front-end design, interactions, testing. Also discuss about test results and reports.

## **Chapter 6: Conclusion and Future Scope**

This chapter discusses about the conclusion and future scope of our project.

## **CHAPTER 2**

### **BACKGROUND**

#### **2.1 Introduction**

KNOWLEDGE TEST is a android base application for online quiz. This chapter is having details work present, comparative analysis with our work. Details about Scope of the application are explained and challenges that we faced are pointed here.

#### **2.2 Related Works**

There are many applications like KNOWLEDGE TEST but none of them are used for organization purposes. All of are use for gaming and fun purposes. But our application is used for some necessary purposes. Which is helpful for users.

#### **2.3 Comparative Studies**

Currently there are many application is available for online quiz system. Trivia crack, Quizup, Quizoid, 94% those are the popular quiz apps in android based smart phone.[2]. Those apps are use for gaming purposes or fun purposes. People used those apps when they are bored. Passes their time playing on those apps. KNOWLEDGE TEST this application completely used for necessary purposes. This application efficiently used in organization recruitment and varsity class test .Our application completely focused on saving time and reducing manual effort in organization recruitment or varsity class test and work as like a question bank. This application work as a question for a organization.

#### **2.4 Scope of the Problem**

We worked on our project following the application development process. We went through each part after completion of the previous one. It's difficult for us make something different in online quiz system. Which is helpful for user of this application. Which is not use for fun purposes. It took about long time in deciding the theme of the project and collecting requirements and gathered information extensively.

## **2.5 Challenges**

The most challenging parts were deciding the purpose of our application. Cause we want to made something which is helpful for users. There are some quite similar apps so we had to come up with new ideas, that's was challenging for us. We are beginner in android development but we have the basic knowledge in java programming. That's why firstly we face some problem in android studio environment. Here also we use firebase database in our application. Which is new for us.

## CHAPTER 3

### REQUIREMENT SPECIFICATION

#### 3.1 Business Process Modeling

Business process modeling in business process management and systems engineering is the activity of representing processes of an enterprise, so that the current process may be analyzed, improved, and automated [3].

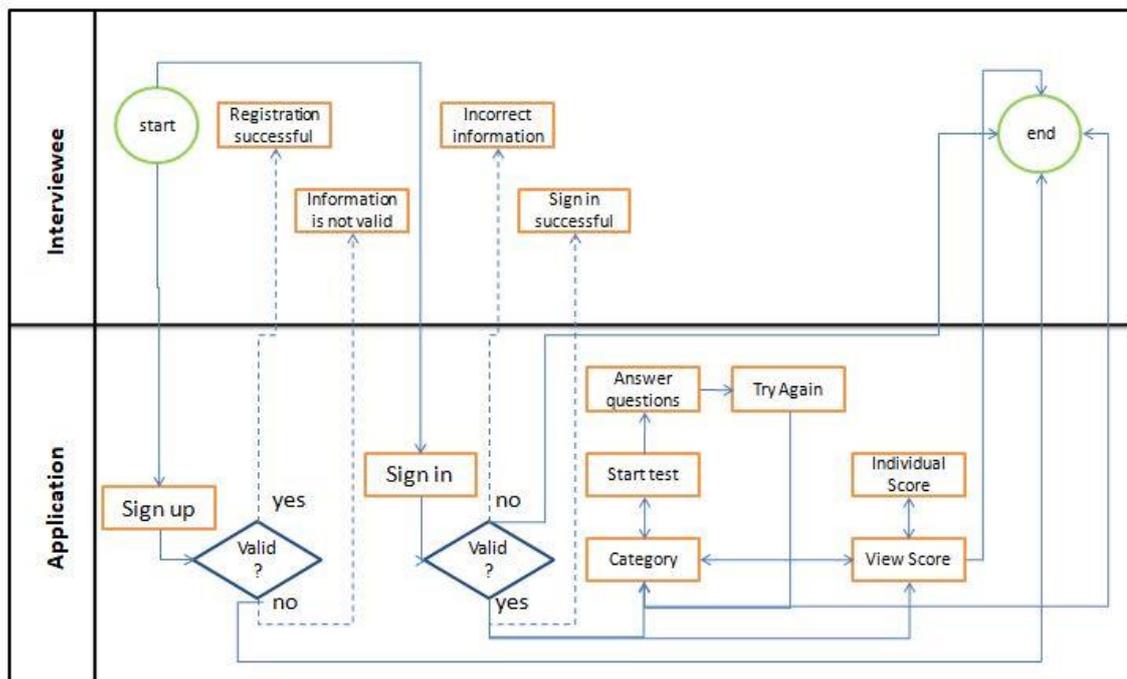


Figure 3.1.1. Business Process Model

#### 3.2 Requirement Collection and Analysis

Requirement collection is the first stage in software or application development process. In a development project highly benefits depends on properly requirement collection for this project. Such as requirement knowledge, collection of requirements for this application and management also software management. There are many types of requirement collection technique such as interviewing, facilitated workshop, survey, questionnaires, document analysis, group discussion etc [4].

### 3.2.1 Requirement for Application

To develop this application we need to collection some requirement for complete this application. In case of this collection and analysis we used different types of technique of requirement collection and analysis. Survey other apps, read documentation of other apps, interviewing some people who are related to some organization and group discussion. In those way we collect requirement of our application. Design it such a way which is helpful for user and solve some problem in efficient way.

### 3.3 Use Case Modeling and Description

Use case diagram is most important for new project which is underdeveloped. It's a primary stage for a underdeveloped project. Use Case Diagram is a graphical representation of interaction between user and system.

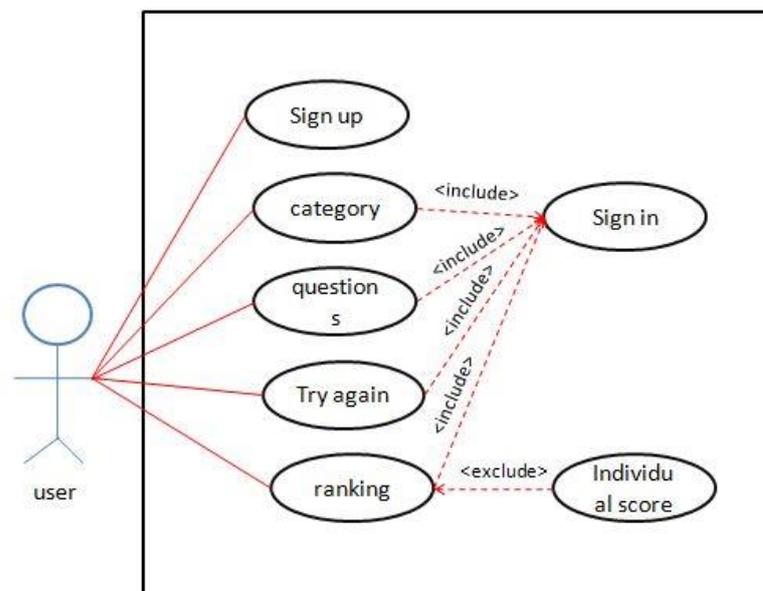


Figure 3.3.1. Use Case Diagram

Here the details about our use case model:

#### i. Sign up

Brief Description: user can register in the system

Actor: user

Flow of steps

- a) 'Sign up' this use case starts when user want to use the application..

## **ii. Sign in**

Brief Description: user can sign into the account with the valid information.

Actor: User

Flow of steps

- a) This use case start when a user completes the sign up process.
- b) After sign in the process user can use all function in application.

## **iii. Category**

Brief Description: User can select categories from application.

Actor: User

Flow of steps

- a) This use case start when a user sign into the application.
- b) User sees the all categories which are available in application.

## **iv. Questions**

Brief Description: user viewed the uploaded question on database.

Actor: User

Flow of steps

- a) This use case start when a user sign in to the system.
- b) After sign in to the application user must be select a category.

## **v. Try again**

Brief Description: When user want to answer question from another category then he/she use try again.

Actor: User

Flow of steps

- a) This use case start when a user sign in to the system.
- b) After sign in user select the category.
- c) Answering all the question from one category user use Try Again.

## **vi. Ranking**

Brief Description: User can see the result which he obtained from answering the question.

Actor: User

Flow of steps

- a) This use case start when a user sign in to the system.

b) User can view his rank after completing the exam.

### vii. Individual Score

Brief Description: User can view the individual score of different category.

Actor: User

Flow of steps

- a) This use case start when a user sign in to the system.
- b) After completing the exam user can view the total result.
- c) User also view the individual result from different category.

## 3.4 Logical Data Model

### 3.4.1 Context Diagram:

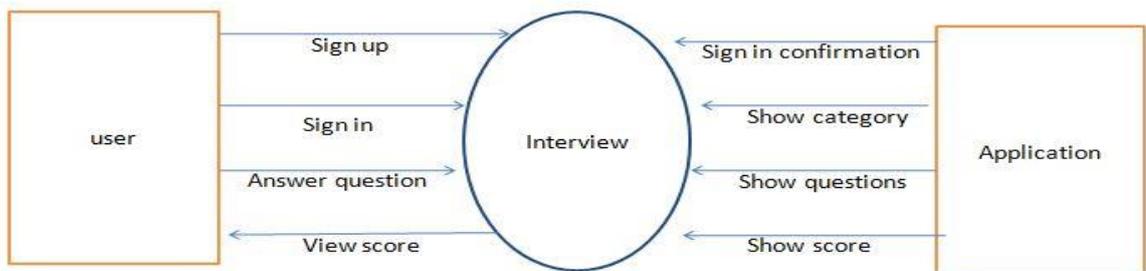


Figure 3.4.1. Context Diagram

### 3.4.2 Entity Relationship Model:

Here the ER diagram of our application:

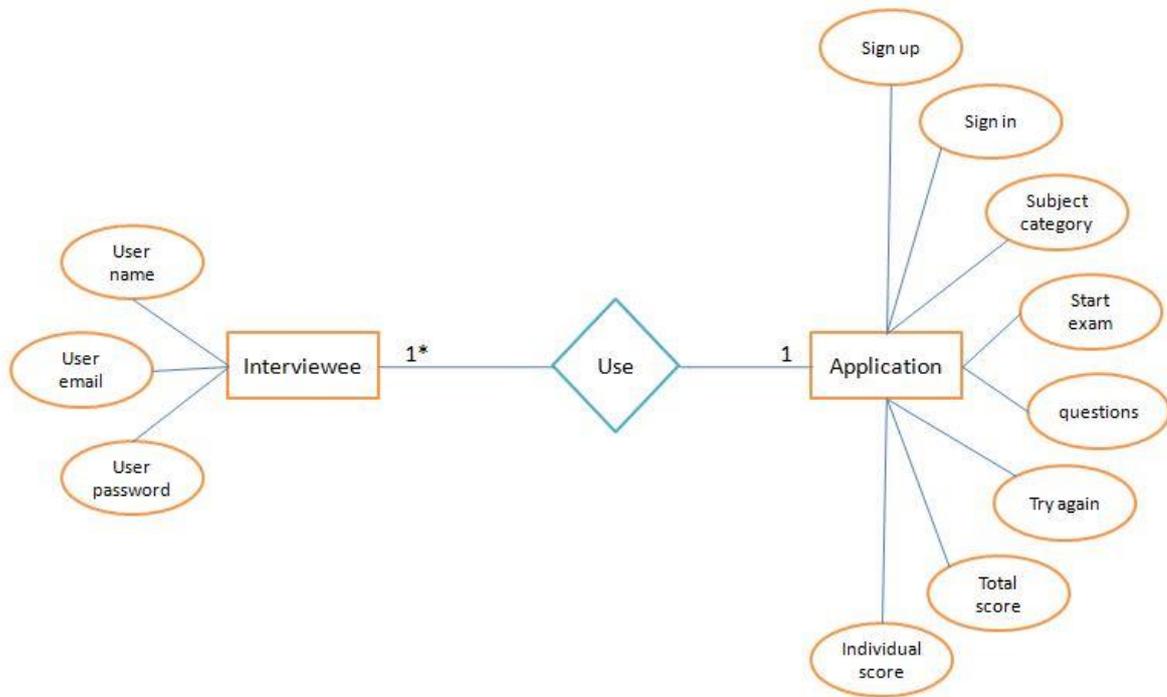


Figure 3.4.2. Entity Relationship Diagram

### 3.5 Design Requirements

When designing systems or software, following issues must be considered that reproduce the overall design of the goals that the system expected to achieve. The following goals were kept in mind while designing the system:

**Make system simple:** The system users are capable to have a large extent of control over their purpose in attaining objectives.

**Make flexible for users:** The system design such a way that user can use it easily. The system must be user friendly.

**Make the system compatible:** It must be suitable in the total system, future maintenance and expansion must less.

**Efficiency:** It's the most important part of a system. System design in such a way that system work in minimum hardware specification with a good response.

## CHAPTER 4

### DESIGN SPECIFICATION

#### 4.1 Front-end Design

Basically front-end design is optical part of the application. By which the user interact with the application.

We believe that simplicity is beauty and the best. Thus, we kept it simple, eye soothing, and most importantly user-friendly. Our Application has following screen for sign in:

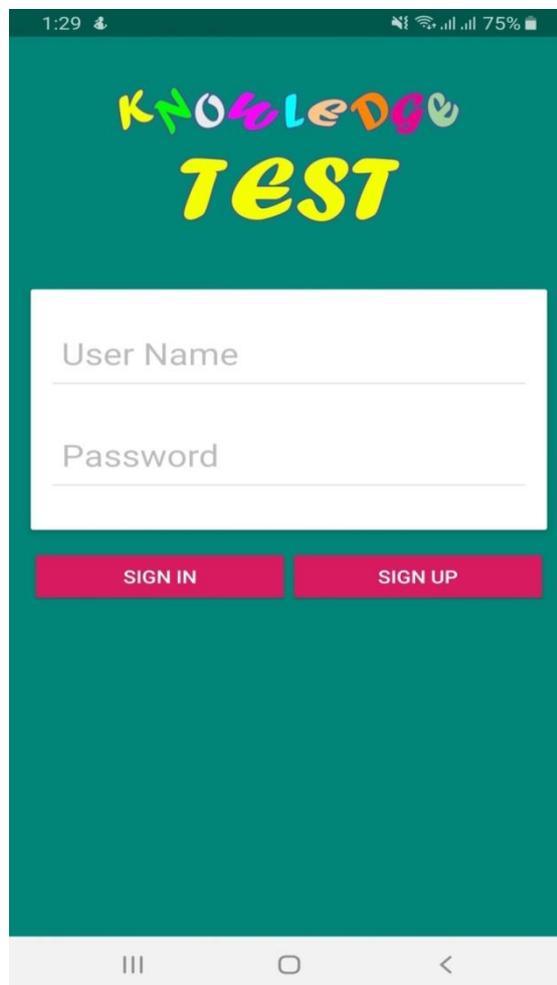


Figure 4.1.1. Sign In Screen

Here is the sign up screen. Which is comes up when the user need to create any account. Sign up screen shown in figure:

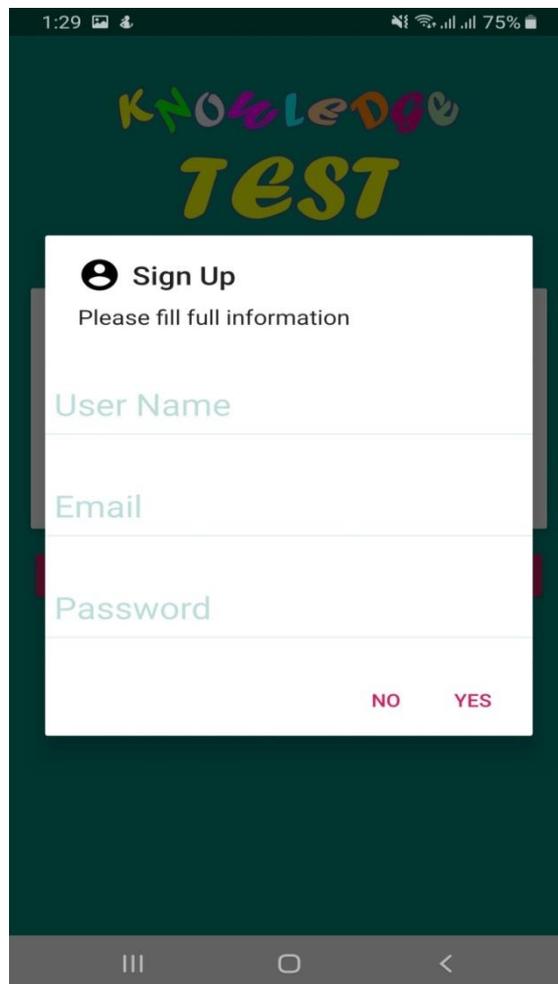


Figure 4.1.2. Sign Up Screen

Here the screen for select category in our application:

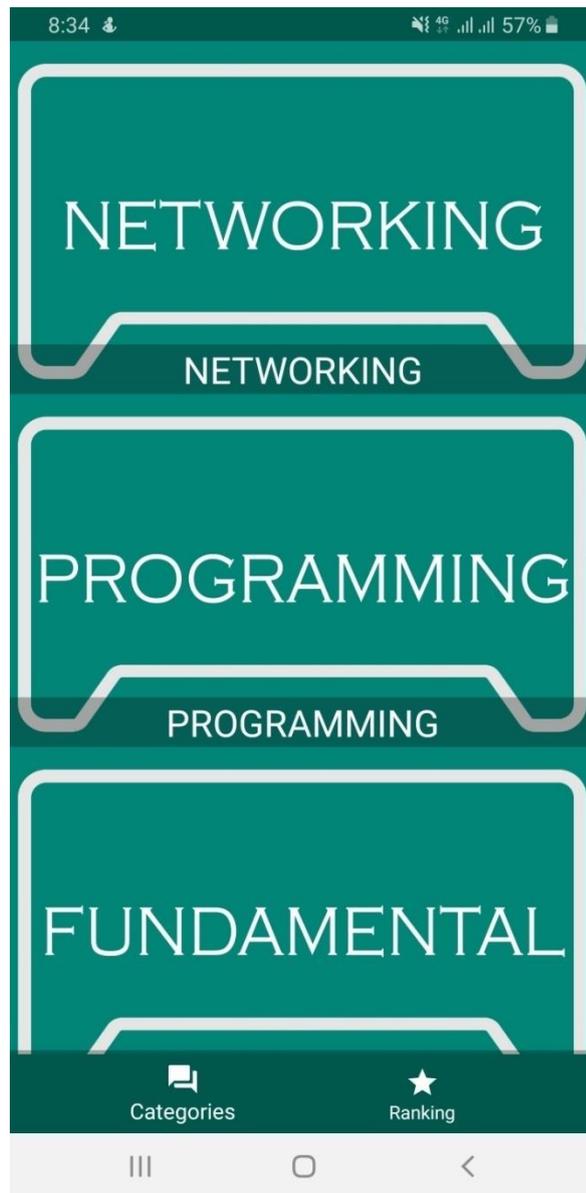


Figure 4.1.3. Category Screen

Here is the starting of answering questions of the application:

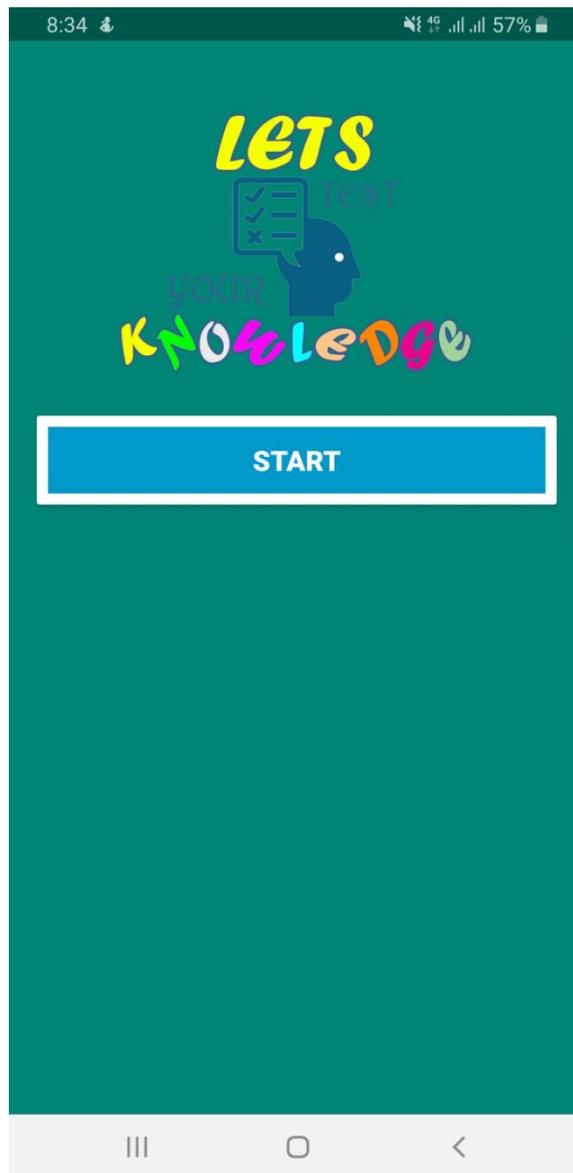


Figure 4.1.4. Start Test Screen

Here is question part with multiple choices consist with time interval:

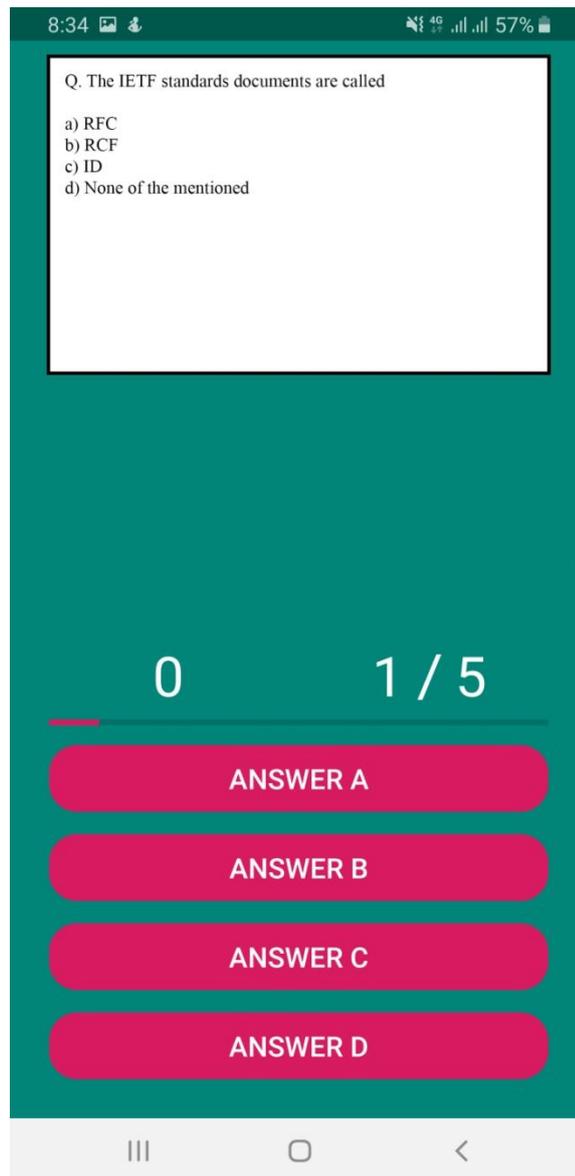


Figure 4.1.5. Answering Question Screen

Its Try again button. When user want to answer another questions from another category then user use this button.

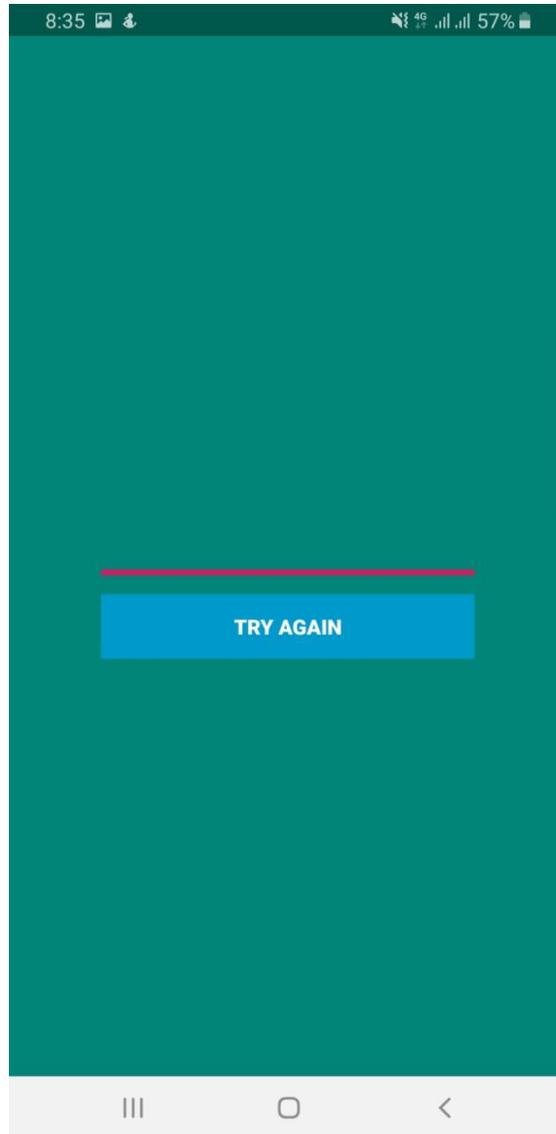


Figure 4.1.6. Try Again Button

This is the Ranking screen. Where the application auto-generate the mark of interviewee.

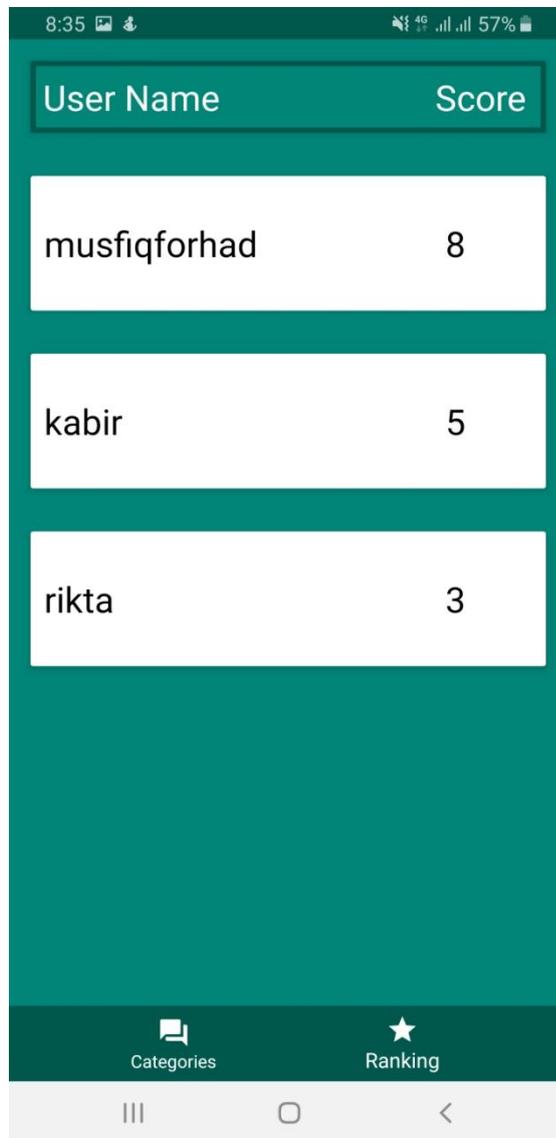
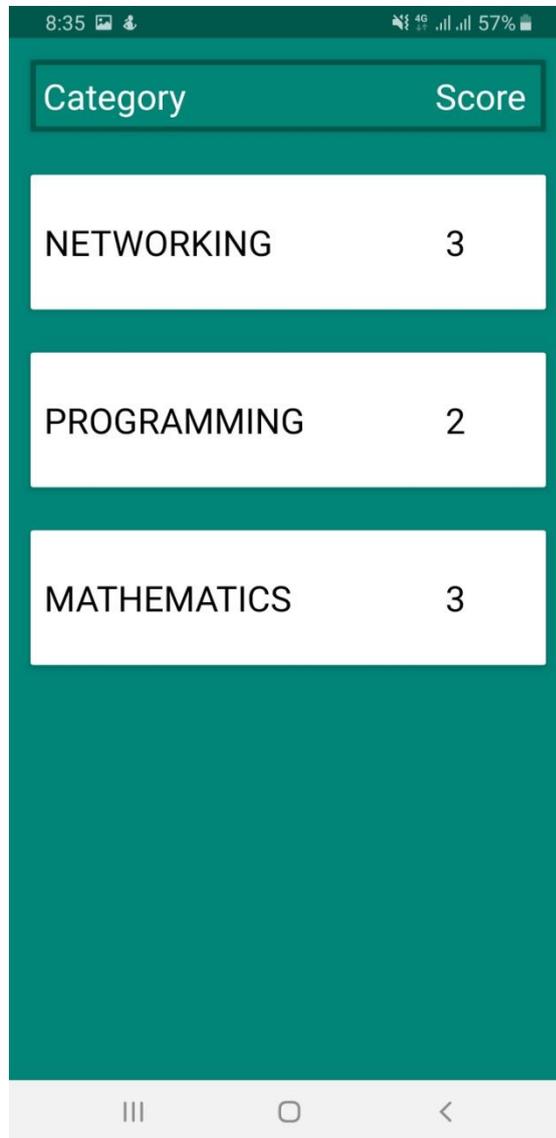


Figure 4.1.7. Ranking Screen

Here is the individual score board. Where application show the individual score of different category of the interviewee.



The image shows a mobile application interface for an individual score board. The interface has a dark teal header with two columns: 'Category' and 'Score'. Below the header, there are three white rectangular boxes, each containing a category name and its corresponding score. The categories and scores are: NETWORKING (3), PROGRAMMING (2), and MATHEMATICS (3). The application is running on a mobile device, as indicated by the status bar at the top showing the time 8:35, signal strength, and 57% battery. The bottom of the screen shows the standard Android navigation bar with three icons: a square, a circle, and a triangle.

Category	Score
NETWORKING	3
PROGRAMMING	2
MATHEMATICS	3

Figure 4.1.8. Individual Score Board

## 4.2 Back-end Design

Back-end design is the most crucial part in building a application. User can't interact with the back-end design. User only interact with front-end design and the back-end part active the front-end part for user and service the user. We can't do anything without back-end part. It's totally behind the scene.

In our project its took long time for back-end design. We use android studio and use java for back-end coding. Also use the firebase database system. It's real time database produce of Google.

## 4.3 Interaction Design and UX

User Experience (UX) is the pillar to the success or failure of a product in the market. And Interaction Design is one of the most important part of User Experience (UX)design. Success of any application depends on User satisfaction. How an application is more attractive to the user is depends on interaction and Design part. In our application, we used the useful model of interactive design in order to make our product attractive as well as simple.

The following figure 4.9 [5] shows There are 7 factors that describe user experience, according to Peter Morville.

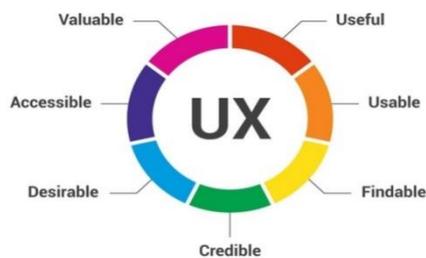


Figure 4.3.1. The 7 Factors that Influence User Experience [5].

## 4.4 Implementation Requirements

In this project we complete front-end design, back-end design. For completing total project we need some tools. Our application is android app.

Here we talk about the implementation tool that we need to complete this application

**Android studio:** Now a day's android studio is popular development environment for developing android base os. We use android studio for this application. [6]

**Firestore:** Firestore is a real time database. Admin don't need to maintain a server. Data can store in the firestore and sync data between users in real time. We use firestore as a database for our application. [7]

**Emulator:** Need to test and debug the application before launching. We can test the application on different version. We use an emulator which is created through android studio for testing purpose of our application. [6]

### 4.4.1 System Requirements, for running the application:

- Android mobile/tab
- Os version: Android 4.0 to higher.
- Ram: minimum 512 MB
- Network: Wi-Fi or Cellular Network.

### 4.4.2 Hardware Requirements

To develop this application, we need the following Hardware Requirements:

- Processor: Intel Core i5
- RAM: minimum 8 GB
- Space on disk: minimum 4 GB
- SSD(optional)

## CHAPTER 5

### IMPLEMENTATION AND TESTING

#### 5.1 Implementation of Database:

Our application is android based os. We use firebase as a database for our application. In where data sync in real time. In this application we made one main database. Where every registered user information is stored. Admin can update question, delete question, and update rules and regulation. If admin want he/she can delete any registered user account or add any user from console.

Here the demo of implementation data in firebase:

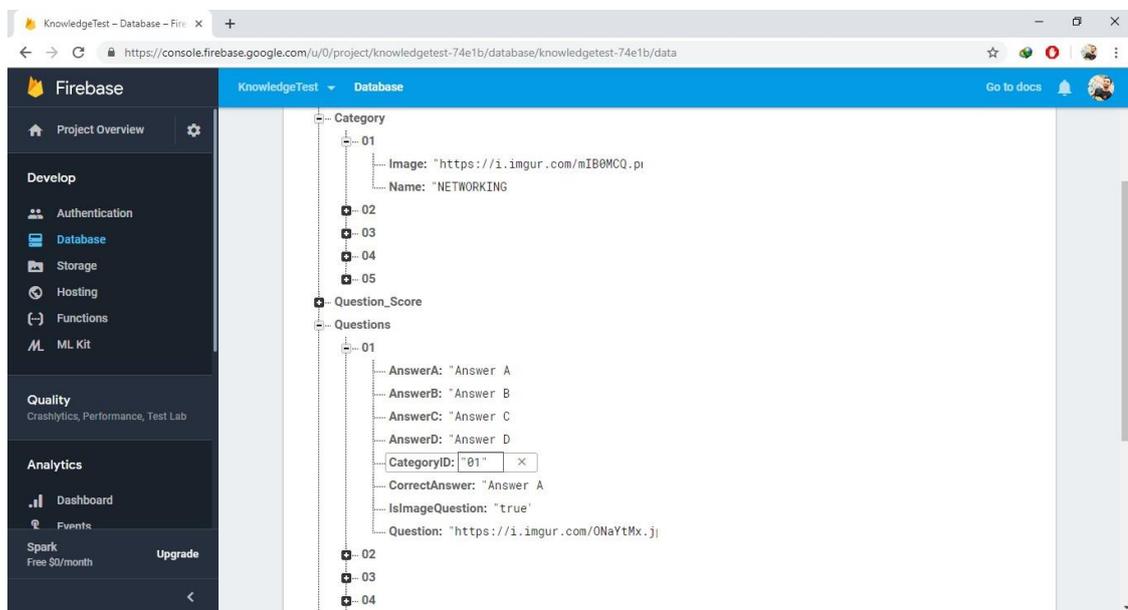


Figure 5.1.1. Implementation of Firebase Database

#### 5.2 Implementation of Front-end Design

Success of a project depends on how convenient is it, is it user friendly? Can User find all function easily in application? All depends on the front-end design of the application.

So here we will discuss about the implementation of front-end design

### 5.2.1 Sign up

Here we successfully implemented the sign up page for our application.

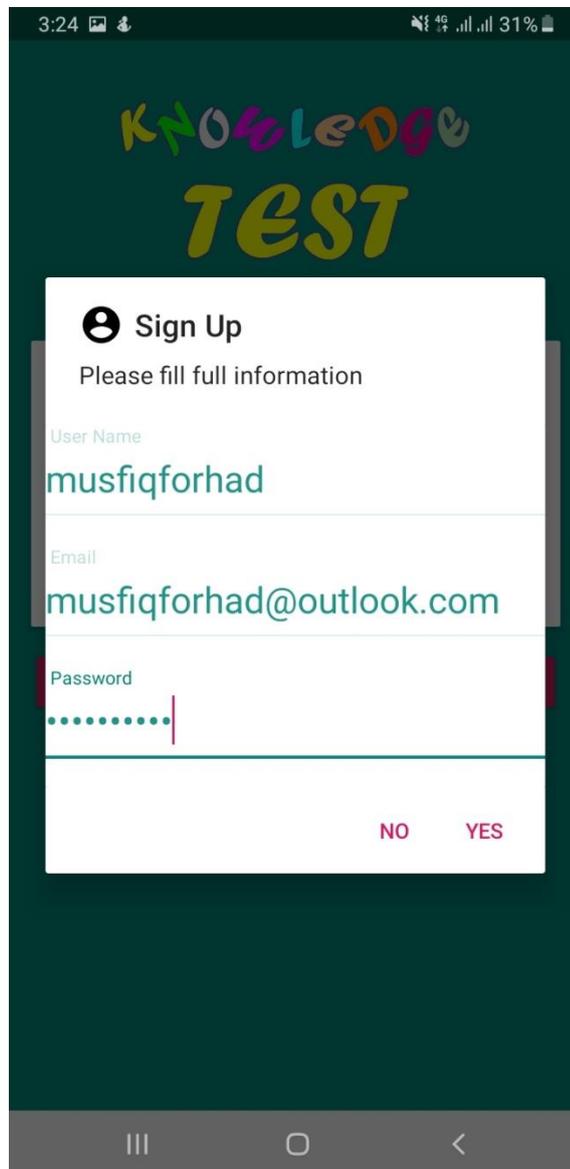


Figure 5.2.1. Implementation of Sign Up

## 5.2.2 Sign in

Here we successfully implemented sign in function of our application:

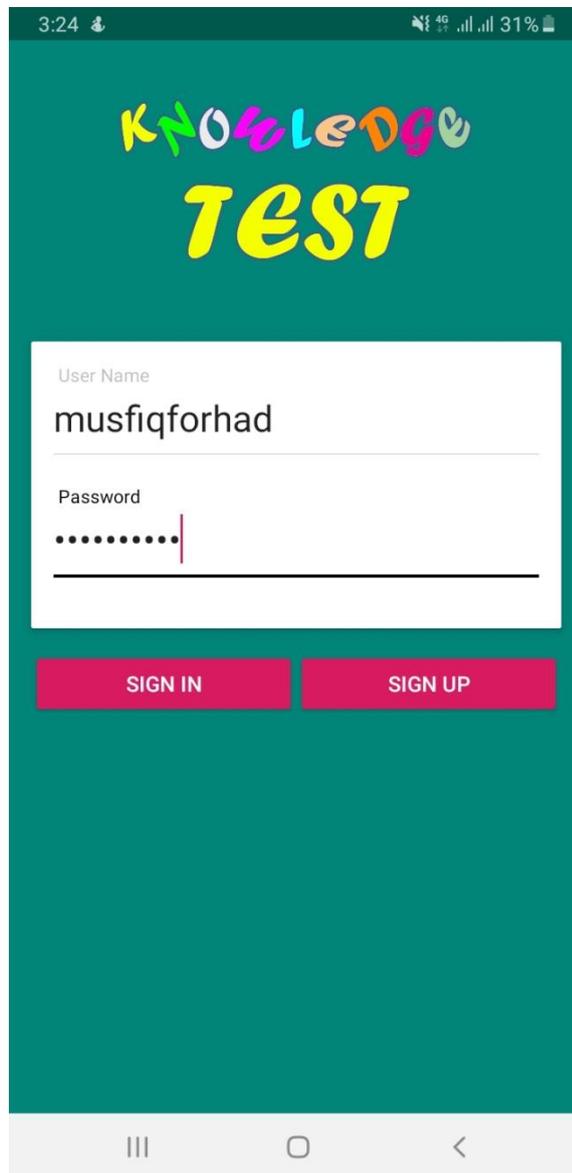


Figure 5.2.2. Implementation of Sign In

### 5.2.3 Answering question

Answering questions function properly worked between given time interval:

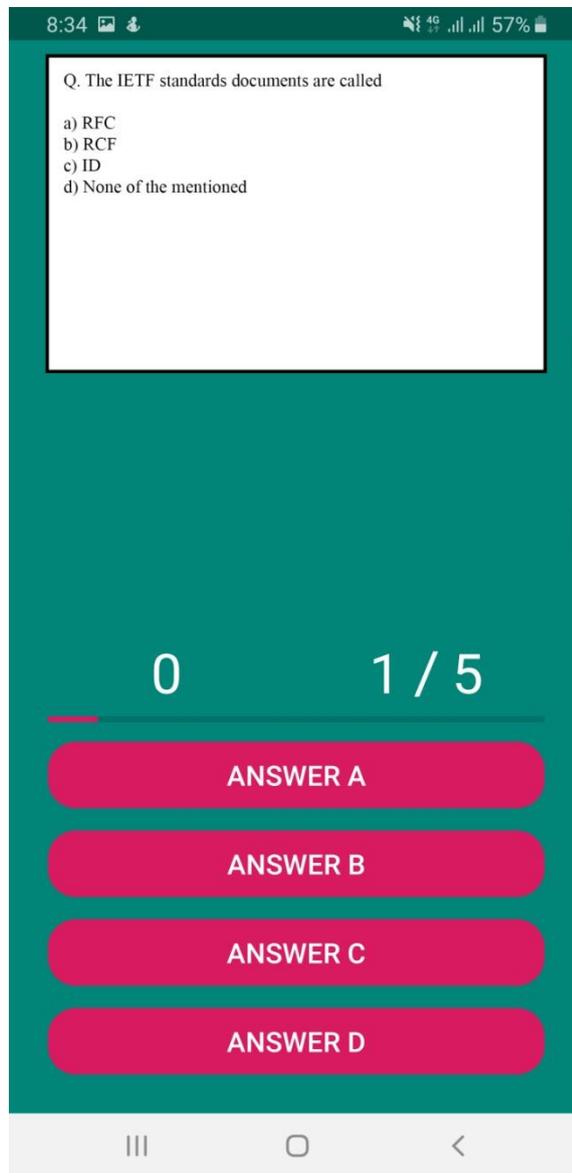
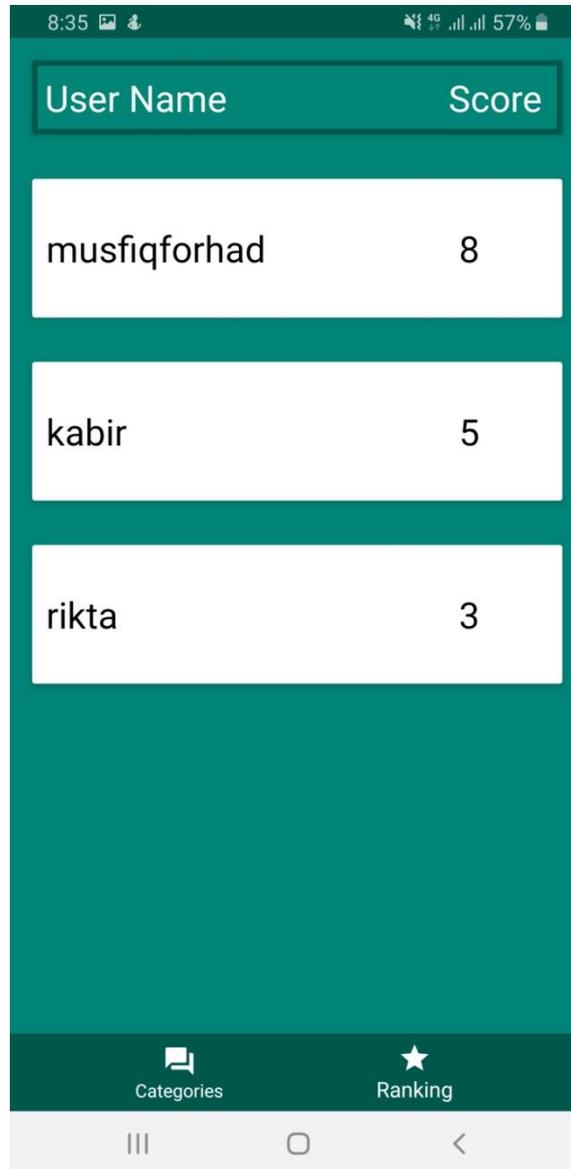


Figure 5.2.3. Implementation of Answering Questions

### 5.2.4 Auto Score generate function

Auto score generator function worked correctly and sorting the score of interviewee based on score:



User Name	Score
musfiqforhad	8
kabir	5
rikta	3

Figure 5.2.4. Implementation of Auto Score Generator

### **5.3 Implementation of Interactions**

Implementation of interaction is most important part of a system. Interaction means when we are in a specific function and go to another function that we want those time. We separate the function for a variant of the user and designed very carefully that can attract users. An application is successful if the user is satisfied using the application. When the application is interactive the more it is used. Our application is user friendly and interactive. We design a good looking GUI and use different type of font, icon and design. The application response time will satisfied the users.

### **5.4 Testing Implementation**

When a system is implemented and test some specific function is called test implementation [8]. We have tested our application several times. We have tested the following factors:

1. Database connection with the application.
2. Sign in function (with valid information).
3. Sign up function (with valid information).
4. All categories are work properly?
5. Questions are render from database correctly?
6. Time limitation work properly?
7. Automated mark generator system.
8. We tested the whole system by maintaining SDLC method.

## 5.5 Test Results and Reports

We have tested our application many times and check is it work properly? We tried to test every step for making a successful application. We test it from different android phone for check is it work fluently? Yes its work.

System Testing Table show below abridge the result of system testing:

Table 5.5.1. System Testing Table

Test Case Id	Date Tested	Tester	Pass/Fail	Test Data	Expected Result	Actual Result	Comment
1	25.03.2019	Musfiq	Pass	Database connection	Properly connected with application	As Expected	
2	25.03.2019	Musfiq	Pass	Sign up	Sign up successful with valid info	As Expected	
3	25.03.2019	Musfiq	Pass	Sign in	Sign in successful with valid info	As Expected	
4	25.03.2019	Hridoy	Pass	Selection of category	Yes User can select category	As Expected	
5	25.03.2019	Hridoy	Pass	Time limitation function	Yes question locked after given time	As Expected	
6	25.03.2019	Hridoy	Pass	Question answer	Successfully select answer	As Expected	
7	25.03.2019	Musfiq	Pass	Automated mark generator	Properly generate the mark (based on answer paper)	As Expected	

### 5.5.1 User Acceptance Testing

The table below abridge the test cases for user acceptance testing and the test result obtained each other.

Table 5.5.2. User Acceptance Testing

Test Case Id	Date Tested	Tester	Pass or Fail	Test Data	Expected Result	Actual Result	Comment
1	26.03.2019	Rikta	Pass	Sign up	Sign up successful	As Expected	
2	26.03.2019	Rikta	Pass	Sign in	Sign in successful	As Expected	
3	26.03.2019	Rikta	Pass	Select category	Successfully selected	As Expected	
4	26.03.2019	Rikta	Pass	Answering question	Successfully answer all question and submit	As Expected	
5	26.03.2019	Rikta	Pass	View ranking	The ranking is properly viewed	As Expected	

## CHAPTER 6

### CONCLUSION AND FUTURE SCOPE

#### 6.1 Discussion and Conclusion

By the grace of **Almighty ALLAH**, we have successfully completed our project and documentation. After the long-term of thinking, Discussion, implementation we are in the last session and so much happy of completion. This application is efficiently used in organizational recruitment and it reduces the manual effort.

Until now exam like quiz are paper based in all educational system and organization. This system are time consuming and costly

But, now these things have changed. KNOWLEDGE TEST has turned the process. By using this platform any organization and varsity can easily take quiz. This process saves users time and save money. They can handle all quiz procedure by this application. This system can store all previous question of quiz.

This application is very useful and trusted, specifically for those organization who takes a short written exam like quiz before viva. In some organization they take quiz exam of their employee. For ensure their employee serve the right service to their customer. With the help of this apps now they can take exam easily of their employee. Most valuable time of users is saved by using this application. We tried our best to make this project fruitful.

#### 6.2 Scope for Further Developments

We have a future plan for the application. They are:

1. Develop the application for ios.
2. Now it's only for MCQ in future we also add theoretical part in this exam.
3. We also develop our security system when we add theoretical part.
4. Graphical enhancement also a part of future development
5. We will develop it as a trusted online quiz system for varsity with some extra feature

## References

- [1] Demand of Smartphone based on operating system?  
Available at <<<https://www.lightcastlebd.com/insights/2015/01/07/market-insight-market-smartphones-bangladesh>>> last access 9<sup>th</sup> march 2019 at 9:00 pm.
- [2] Information of some popular online quiz apps.  
Available at <<<https://www.androidapps.com/best-quiz-apps-for-android/>>> last access 9<sup>th</sup> march 2019 at 10:00 pm.
- [3] What is BPM?  
Available at << [https://en.wikipedia.org/wiki/Business\\_process\\_modeling](https://en.wikipedia.org/wiki/Business_process_modeling) >> last access 19<sup>th</sup> march 2019 at 12:00 am.
- [4] About requirement analysis,  
Available at <<<https://www.brighthubpm.com/project-planning/60264-techniques-used-in-business-requirements-gathering/>>> last access 19<sup>th</sup> march 2019 at 12:00 am.
- [5] About UX design,  
Available at << <https://www.flowless.eu/the-7-factors-of-ux-by-peter-morville/>>> last access 19<sup>th</sup> march 2019 at 2:00 am.
- [6] About android studio,  
Available at<< <http://androiddeveloper.galileo.edu/2017/03/29/android-studio-and-android-sdk-tools/>>> last access 19<sup>th</sup> march 2019 at 2:00 am.
- [7] What is firebase,  
Available at<<<https://firebase.google.com/docs/database/>>> last access 19<sup>th</sup> march 2019 at 3:00 am.
- [8] What is System testing  
Available at << [https://en.wikipedia.org/wiki/System\\_testing](https://en.wikipedia.org/wiki/System_testing)>> last access 19<sup>th</sup> march 2019 at 3:00 am.

## **APPENDIX**

### **Appendix A: Project Reflection**

There is a proverb says” A team work leads to dream work”. In according to us a well maintained group can accomplish their object point no matter how difficult it is. We were synchronized, completely we are in agreement and we knew our job well. This mentality of our group member helped a lot in doing this project.

When we first start our work, we were so cocksure and full of spirit but after some days we felt undone as we were struggling about from where to start. And when we find our purposes and got our starting point we were never looked back and keep moving forward. Whenever a fateful point came we solved it together by group discussion.

Admittedly, the formation of a team is the most important. You need to enrol the right members who have interest in this field and a hard worker and then made a high-performance team. It was our privilege and good luck that we were to be put in the same group.

Finally, after so many difficulty and mass sleepless night, we did this project successfully.