Quiz App (Android Based Application)



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Information Technology

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STATEMENT OF SUBMISSION

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Throughout the preparation and production of this thesis, many people became involved. To all these people, I am very grateful to my parents for the support they provided to me either moral or financial.

Thank you so much

GHALIA KHIZAR

DECLARATION

I hereby declare that this project, neither whole nor as a part has been copied out from any source. It is further declared that I have developed this project and accompanied report entirely based on my personal efforts. If any part of this project is proved to be copied out from any source or found to be reproduction of some other. I will stand by the consequences. No Portion of the work presented has been submitted of any application for any other degree or qualification of this or any other university or institute of learning.

ABSTRACT

This work deals with development of android-based multiple-choice question examination system, namely: Smart Quiz. This application is developed for educational purpose, allowing the users to prepare the multiple-choice questions for different examinations. The main goal of the application is to enable users to practice for subjective tests conducted for admissions and recruitment, with focus on Computer science field. This quiz application includes three main modules, namely (i) computer science, (ii) verbal, and (iii) analytical. The computer science and verbal modules contains various types of subcategories. This quiz includes three functions: (i) Hint, (ii) Skip, and (iii) Pause, which are collectively named as lifelines that help users to answer questions correctly. These functions can be used only once by a user. It shows progress feedback during quiz play, and at the end, the app also shows the result.

Tools and Modules

- Android Studio
- Java language
- XML
- Firebase Storage
- Android mobile phone

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CHAPTER #1

INTRODUCTION

Student get ready for preparing themselves for different examination directly though my project "Smart Quiz" this is android based application that application helps the students prepare quiz in smart phone and tablets. One of the major goals of my project is to facilitate students in learning, gaining and improving their knowledge skills. Student prepare themselves for interviews, interest and job tests and many other tests for her/his desired and my app is more entertaining app for boys and girls also they can entertained themselves as well as prepare themselves.

get bored or frustrated due to dullness of app. I developed the entertaining app for user to be able to attempt short quiz using smart devices such as smart phones and tables.

1.1 Background Context

The Expert System (ES), namely Interactive Learning Using Expert System Quizzes was proposed by John A. Byers and Alnarp, at Sweden in 1999. I used JavaScript, HTML, and text for database for making interactive quizzes.

In my application user just open it and attempt quizzes the questions are available in front end or interface in the form of multiple choice like:

What is the independence day of Pakistan?

A: 14 Aug 1947 B: 15 Sep 1927 C: 14 Jan 1948

D: 18 Feb 1947

Like this questions we display thousands of questions in front of application user just attempt and at the end of quizzes we display output of quizzes. User able to make their own quiz. The Web based expert system, by is an online learning center. That is advantage for user for getting more knowledge. It is a multiple-choice quiz. After each question, five choices are given. In my application user can select one choice at a time in multiple question type. After attempt the quizzes we display result and graph of result and percentage and total number which is user obtained from quiz that is help that user for attempt quiz again and again for getting 100% accuracy and aware his or her mistakes.

I make smart quiz application in this way that it is able to access user email id that user communicate our application through his or her email id we are not able to access user personal email id or smart phone we are just sent message to user email through smart quiz application and user can sent message to their email id by smart quiz app.

The Quiz Hub is an online Interactive Learning Quiz Games, focused on facts. This quiz has many subcategories. Our application contain multiple type of quizzes like spelling quizzes, history, maths

quizzes, vocabulary quizzes and games quizzes and many other type of quizzes. It is not a multiple-choice quiz; one must select the matching pairs in this quiz.

There are many researches in the field of quiz application development which are conducted to evaluate the growth in knowledge and skills.

1.2 Motivation

As you know android is getting famous rapidly day by day and its user is increases day by day because it is very easy to use and it is very friendly for any kind user and it is more understanding for any person. Therefore, I found this idea interesting, easy and time efficient to facilitate the users in this way without any difficulty. If user want to get knowledge then he/she should contact with my application because my application contain more knowledge and on internet there are more application for quiz but that application just for fun not for knowledge and if user attempt that application that is available on internet then it is more consuming time to reading the whole article and article related knowledge for preparing themselves.

But the most attractive feature of my app is that I take learning and fun side by side. My app provides them the facility to revise their knowledge or to learn something advantageous at one place without wasting their time.

1.3 Objectives

The main purpose of this application is that we create environments that build up interest of user for getting and attempt more quizzes and get knowledge and the features of this android based system is

- Different type of quizzes
- Frame
- MM(Multimedia (picture, snap chat))
- Time frame
- Multiple choice question

Our object is to create such system that user use the app and get knowledge and prepare themselves for necessary purpose and in minimum time minimum effort such as job test, interview test students can prepare themselves for inter test for university and admission test. User directly prepare test from our application on Android phones and smart phones such as tablets etc.

1.4 Problem Statement

It is necessary for student that learns more knowledge and prepares themselves for test form our application in easy way and it is easy to understand and it easy to read for every student and it user friendly and its interface is very interactive. This is what I tried to address in the development of Smart Quiz: Quiz Application Development using Android-Based Platform.

CHAPTER # 2

EXISTING SYSTEM

There are many web-based and android based application which is quizzes based application but there are only few are available on internet that is help in learning and getting knowledge and then user prepare themselves for their quiz, job interview, admission test and many other test. And our application is for prepare quiz as well as for entertain but which application is available on internet that application's aim just for fun and entertainments not for knowledge. Among the many applications, we review some Web based and Android based applications that are quite famous and are successful in terms of number of players and downloads.

2.1 Web-Based Applications

Some Web-based application is:

2.1.1 Computer General Knowledge Quiz

IT (Information Technology) and computer based knowledge that makes user to get more knowledge of computer form our application which is computer quiz based application this quiz contain knowledge about computer. This quiz help user for getting knowledge about computer and prepare their quiz about computer after attempt the quiz user check their points or number or accuracy if accuracy is not 100% user don't worry about their accuracy we display the output of quiz and in this user can attempt once more time and that time user can 100% result or accuracy.

2.1.2 The Knowledge Hub

It contains multiple choice questions and answers with explanations. Computer related subject like OS (Operating System), SE (Software Engineering), DMS (Data Base Management) CN (Computer Networks) there knowledge are also available in the form sub based quiz system in our smart quiz webbased application. These Computer Science MCQs will help users for various Interviews, competitive exams, entrance exams, and others.

2.1.3 Computer Quiz

When user attempt computer quiz student of IT (Information Technology) and computer science then user can prepare for quiz and interview, exams and tests.

Multiple questions are available and at the end of each question .a button named "Answer" is given. On

clicking that button the correct answer is highlighted at the mean time.

2.2 Android Based System

Following is the detail of different android-based systems.

2.2.1 Quiz app-1

This quiz application is very simple and interactive. In this there are two modes General and Aptitude, after selecting one of them it will be redirect to the Quiz interface which will contain question with multiple options and there are three buttons:

- Show answer
- Submit
- Next

2.2.2 Quiz app-2

It is also a simple and interactive application. It contains three modes:

- Easy
- Normal
- Hard

It give two option T(True) and F(False) when we true false question

It is lifeline for each question user can use lifeline for getting hint for question and user lifeline more than one time then it will show answer of that question but the drawback is that user cannot get knowledge by using lifeline one time or more then one times so it is useless because user can't learn anything from it because user use lifeline one time or more than one tome.

There are many wed-based application that are available on internet but that application are limited knowledge and just for fun or entertainments our application is for more knowledge and also fun and entertainment.

Another unique feature of Quiz that is lacking in other apps is the lifelines, which it provides to user. Users can view the hints for the right answer, can skip a question and pause the quiz app for thirty seconds.

Other features regarding Quiz and other apps seemed to be quite similar.

Our application is responsive and easy to understand and easy to read and as possible as we give want to give answer to user of multiple choice question

2.3 Conclusion

From the given research, I found that there are many Quiz web based, and Android based application are available. Among all these researches, I choose Android based Quiz Application which is more informative and easy to use anywhere because you just required to download this app and easy to use anywhere.

CHAPTER #3

System Analysis and Design

3.1 Introduction

System development is systematic process deal with understanding and specifying in detail What system should do and now the components of the system works together. It includes planning, analysis, design, deployment, and maintenance. Here, I will primarily focus on.

- Analysis
- Design

3.1.2 Analysis

We want better understanding of project we can analysis is it means we break the project into smaller part and then analysis it or understand the smaller parts of that projects and from the analysis of project we decide that what the system should do.

It is conducted to study a system or its parts in order to identify its objectives. It is a problem solving technique which is used to improve the system and ensures that all the components of the system work efficiently to accomplish their purpose.

3.1.3 Design

The process of design is plan/specification for the construction of system in form of prototype. It is used to create a new business system or replacing an existing system by defining its components or modules to satisfy the specific requirements.

3.2 Component Overview

It is an online site for user where they can easily encrypt and decrypt their text message by using different algorithms. The main functionality of the system is described in following UML diagrams.

3.3 UML Diagram

A UML diagram is a diagram based on the UML (Unified Modelling Language) with the purpose of visually representing a system along with its main actors, roles, actions, artefacts.

We write document for maintain information about system. There are different type diagrams of UML.

- One Diagram of Behavioral Diagrams
- Second Diagram of Structural Diagrams
- Use Case

3.3.1 Behavioral Diagrams

It shows how the system behaves and interacts with itself and other entities (users, other systems). They show how data moves through the system and how objects communicate with each other.

3.3.2 Use Case Diagram

The diagram of use case is a set of functions, services, and actions use case A "system" is something being developed or operated, and "actors" are people or entities diagram using actor for the functionality of system.

System

It is a rectangular shape system boundary contains use cases in it and actors are place outside the system.

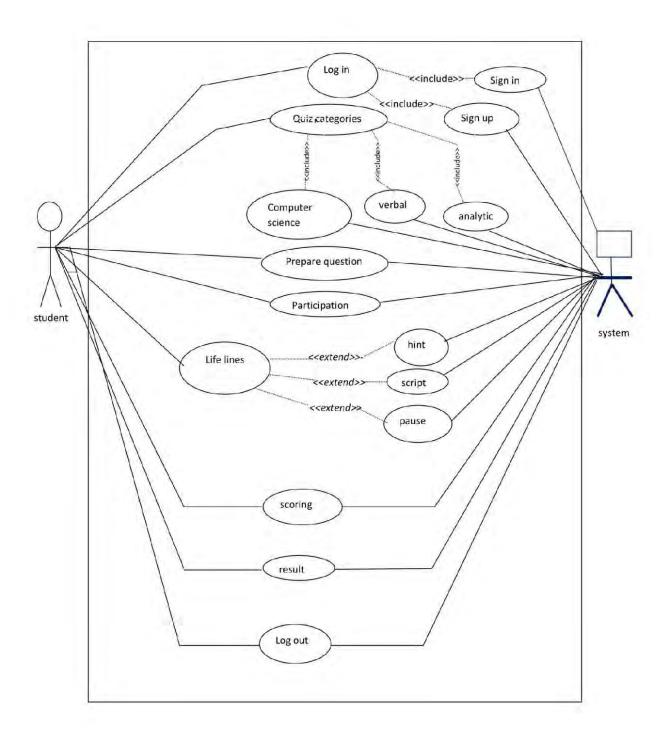
Use Case:

It is an oval shape which represents the functions of the system.

Actor:

Actors are the users of a system. They are represented with the actor stereotype.

3.3.3 Use Case Diagram



3.4 Class Diagram

Class diagrams are a type of structure diagrams that describe the structure of a system by showing the system's cases, their attributes, operations or method, and the relationships among objects.

• Class Diagram Notation:

A class notation consists of three parts:

Class Name

Class name in the first partition.

• Class Attributes

Attributes are shown in the second partition.

• Class Operations (Methods)

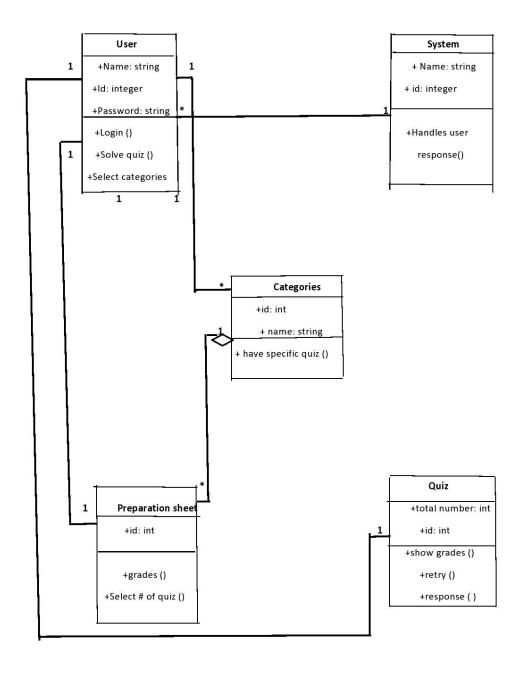
Operations are shown in the third partition. They are servicing the class provides.

3.4.1 Class Relationships

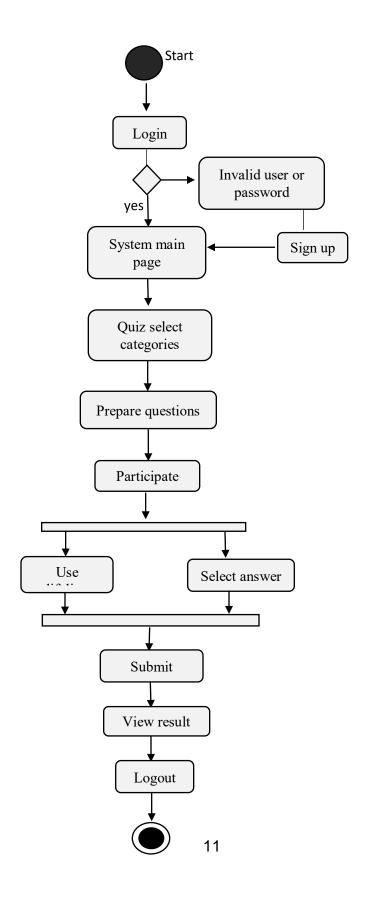
- Inheritance or Generalization
- Aggregation
- Simple Association
- Composition
- Dependency

3.4.2 Class Diagram

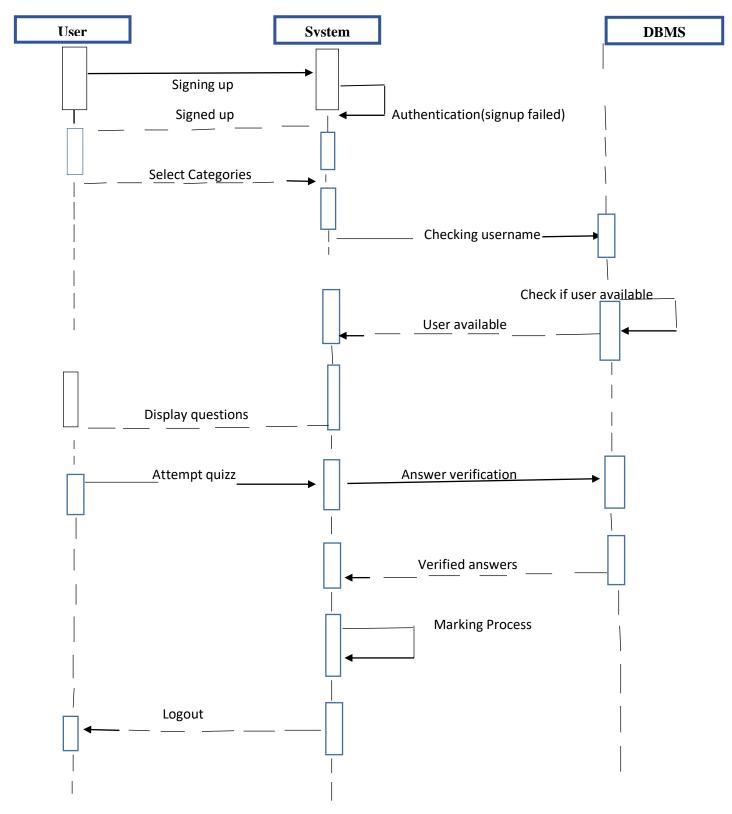
Class Diagram



3.5 Activity Diagram



3.6 Sequence Diagram



3.7 Conclusion of Chapter

In this chapter I discuss all the Analysis and Design of the Project. Defining the Architecture, Component, modules, interface and data for a proposed system to satisfy the specified requirements.

Chapter #4

Implementation Phase

4.1 Introduction

This chapter covers the Implementation phase of the project. The tools and technology used in the Project.

4.1.1 Tool Used

This application will be developed by using the Windows 10 (Android Studio 1.0V) environment. The project has been made by the help with YouTube android-based technologies channels. Based on the knowledge of the development member and the requirements of the Developing application, following technologies and tools will be used in the application development. Android Studio, XML, JDK, SDK.

4.1.2 Android Studio

There was first announced of android studio at Google conference in 2013 after 2014 various beta versions it is released as a general public.

With android studio life become changes and but it is smooth experience and we will try our best to include a little information about android working for beginners. Android is intelegent code editor which is officially development environments we can write easy code, best code and with intelligent code editor we can produce more product.

4.2 XML

Extensible

XML is extensible.XML allow user to define their own tags and t is also allow developments to extent notion of documents is:

- May be it is a file that lives on a file server
- May be it is a transient piece of data that flows between two computer systems (as in the case of Web Services)

The XML feature is its tags, computer language XML allow developer to define own set of tags. XML tags like:

```
<Start tags>
</end tags>
<Element-name>
</Element-name>
```

In computer languages the HTML language and XML are very easy like in both language important feature is using tags and developer can define own tags. XML is not just a language it is Meta language because from this language we can create or define other languages. Like RSS and maths and also tools XSLT

4.2.1 JDK

The Java Development Kit (JDK) is a software development environment used for developing Java applications and applets. It includes the Java Runtime Environment (JRE), an interpreter/loader (java), a compiler (java), an archive (jar), a documentation generator (Avado) and other tools needed in Java development.

4.2.2 SDK

Android software development is the process by which new applications are created for the Android operating system.

We can use android (SDK) software development kit for create application use java programming language.

4.3 Functions

- 1. Installing the Android studio Android studio is successfully installed
- 2. Creating the Application named Smart Quiz
- 3. Establishing a connection

Android phone is connected to the system using USB cable.

4. Installation

Application is installed in the android phone.

5. Run

User is asked to select the subject topic.

4.4 Firebase Database

I use Firebase Database in my project it is real-time database and is a cloud-hosted and NoSQL database you can store data as well as sync data

4.4.1 Add Project in Firebase

Through your Google Account make id in Firebase and Add your Project in the Firebase

4.4.2 Authentication

For Authentication of your project you must follow the signed in method and Enable the provider status and add ID of user. In my project I add the Email and Password of user for Authentication.

4.5 Login and Registration

The User install my App in his/her Android Mobile for access of this App they must Login through user interface and authenticate. If user is new, they must register first by using register interface and id is built in firebase Authentication. Now he/she send message and key and select the Algorithm through which they want to encrypt the message and after processing they get cipher text or encrypted message .Receiver can also decrypt the message by using same key in this way the data is more securely share.

4.6 Conclusion

In this chapter, I explained the implementation phase of the project. Programming language explains which language has been used to develop this application. Framework has described which platform is used to design this application. System requirements show on which devices this application can be run upon. I have discussed all the above parameters in the detai

Chapter #5

Testing Phase

5.1 Introduction to system Testing

The purpose of testing is to discover errors.

Testing is most importing process for efficient project we test project again and again for efficient running we test the project again and again because we there will not appear bugs in project in future so testing should be done in every project. And by testing again and again we check that the functionality of project exact workable or not and check assemblies, Sub-assemblies and functionality of components we ensure the project meet its requirements or not and we check that project work user expectations or not and there are different types of projects.

5.1.1 Test Environment

A test environment is a set of software and hard on which our testing team is going to perform the testing of the newly build software product. The software is tested with the required hardware and software requirements. The Testing Environments are of two types. One of them is manual testing environment and the other one is automated testing environment.

5.1.2 Manual Testing Process

Understand app functionality Build Android app test environment Run test cases Verify and record test case result Document test cases results Escalate results for bug fixes

5.1.3 Automation Testing Process

Define scope of automation Planning design and development Test execution Record test cases as report escalation for App bug fixes

5.1.4 Testing Procedure

Test procedure is the way that needs to be followed to execute the test cases

Test process is a way that we find different errors and there are different steps that we have to perform for complete testing and time and effort are required for best testing

The following strategies are used for testing travel agency management system.

5.1.5 Unit Testing

The goal of unit testing is to divide each part of the coding and divide it among the team. Each team is given task to test each part of the code and remove any errors that are found in each part. Unit testing provides a strict written contract that each part of code will work accordingly as intended. The main consideration in this test in verification of all modules of the software system.

5.1.6 Integration testing

Integration tests are designed to test integrated software components to determine if they run as one program. Testing is event driven and is more concerned with the basic run as one program.

The process of testing is most important and it is more concern with basic outcomes. There are different type of testing integration testing, component testing, individual components testing whole project testing when we trying to combine the components and at the time of combination then there are different type of error arise some time we ignore that errors for some reason and than we integration test so that we can resolve the problems.

5.1.7 System testing

System testing of software or hardware is testing conducted on a complete; integrate system to evaluate the systems compliance with its specified requirements.

Security testing is protection testing that test security methods in the system to avoid invalid intrusion. The system stores secret and sensitive information that is susceptible to invalid instructions. Our system attempts to verify that protection mechanism build into a system will protect it from unauthorized penetration; it requires a logon admin username and password to initiate. For allowing only authenticated users to logon the system, each user is assigned username and password.

5.2 Test strategy and approach

And there are two type of testing field testing and functional testing the field testing if performed manually, and functional testing performed in written details.

5.2.1 Test objectives

There are field entries must work properly and the pages activated from the link which is identified link. Entries of format should be correct and pages of links should be correct.

5.3 Conclusion

We have discussed about testing. The test cases show the functionality of Application. Each test is assigned a Test Name & Test Number. Test description shows what the aims of this test procedure are. What are the points need to be considered while testing is discussed in Item to be tested? Specifications describe what input is given to the phone, what may be happening in output is described in expected out. What should be the output is described in Actual output. At the end steps to perform the test are described in Procedure Step to show how an actual test has been performed.

CHAPTER #6

Conclusion And Future Enhancement

6.1 Introduction

This chapter covers the conclusion and the future enhancement of the project.

6.1.1 ACHIEVEMENT

It's a sense of achievement having developed my final project successfully. I made a project named Quiz app and decryption using AES and DES) in which I build an Android Application using Android studio and Firebase Real-time Database. The User Register for Authentication and after that he/she will be able to access the App and register for Future use. I thank ALLAH Almighty for this grant. Before going through this project, I had a good knowledge of Information Technology, but now I am independent. I had a very good interaction with our respected supervisor's **Mam Robina** who helped me develop the system in time. During the development of the project, I learnt a lot. My learning's are summarized below.

6.1.2 TIME & PROJECT MANAGEMENT

It had to be competed in 4 months timeframe. This goal was achieved through proper planning of my project. In starting a careful analysis was prepared to enlist all the goals and milestones for my project. After enlisting the goals, I crafted a plan for time management. Split the goals into small deliverables. Each deliverable was divided into many smaller markers.

6.1.3 INTERACT WITH THE USER

Since Application is developed for everyone so I had a huge sea of potential users. So, I made use of a few of them. This helped us improve my understanding to manage a complete project

6.1.4 SYSTEM DESIGNING AND MODELING

A compete architecture design of the software is created during the system analysis and design. This design explains the static and dynamic behaviour of the software and code as well. The design of the software helped me in creating and implements the code successfully.

6.1.7 LATEST TOOLS AND TECHNOLOGIES

Android is the most frequently updated and most used technology, whose market in the software industry is very vast. My project which is an android application helped us in learning this new technology. For the development of my project I learnt and used many different tools and technologies. This has greatly increased my learning experience.

6.1.8 TESTING STRATEGIES

I needed well known testing strategies for Application to minimize the risks involve ensuring quality standards.

6.2 Conclusion

Our main purpose is that we develop such web-based application that provide a wonder full plate form in which every kind of user like student, business men, and then men that searching for jobs they can easily attempt quizzes for their purpose and in this way they can learn more knowledge form quizzes.

Our them is that we want to provide a plate form to user which is user uses that plate form for practice for subjective tests and user prepare themselves for objective quizzes as well as subjective quizzes and we offer user can select quizzes for their interest like computer quiz, math's quiz, general knowledge quiz, and many other type of quiz.

Three modules of smart web-based application are following:

- Computer science
- Verbal
- Analytical

The various sub categories of computer science verbal modules is that This quiz includes three functions:

- Hint
- Skip
- Pause

These functions can be used only once by a user.

When user tap/click on "Hint", it will show hints by disabling two extra options from four options, then user can easily select an option from the two.

If user want to use skip function then user can select skip function button. And if user want to pause the quiz for the timing then user can press the pause button and pause the quiz for the timing and after some time user can press the button of play if user want to play the quiz user choice option user can quit the quiz at any time if user want to quit the quiz simply user press the quit button. And user can select the time for their quiz if he/she want to select the time than he/she simply goes set time option in this way

user can set the time for quiz and user can quit the quiz before end of time. If user set time 30 sec for quiz than after 30 sec quiz automatically quit if he/she cannot pause the quiz or quit the quiz.

Firstly we learned user behavior and then we have to learned web-based application our smart quiz application and then we learned that development process is hard for develop anything without developing teams.

6.3 Future Scope

Our future planning is that we add some more functionality that functionality are user desired and keep project improving and we keep feedback of user and changing user application for user desired.

- For the passage of time and user requirement we will add more functionality and categories
- With day by day our best try to make best user friendly frond end
- And will try to make reliable and efficient quality

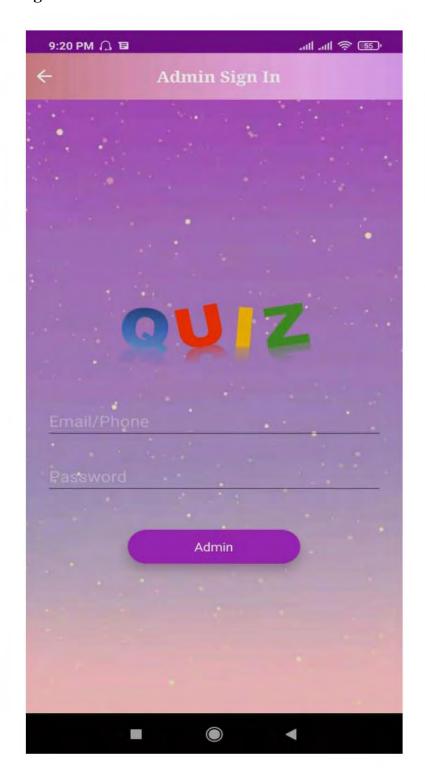
Chapter # 7

USER GUIDE

7.1 Start



7.2 Admin login

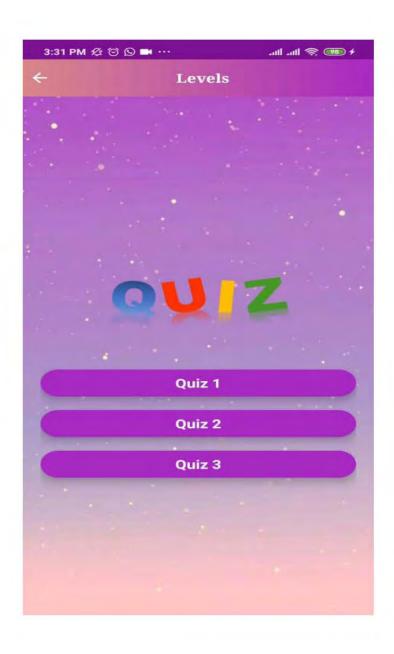


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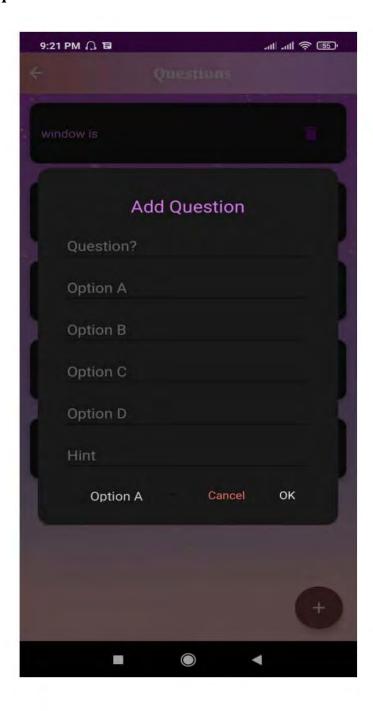
7.3 Subjects of Quiz



7.4 Number of Quizzes



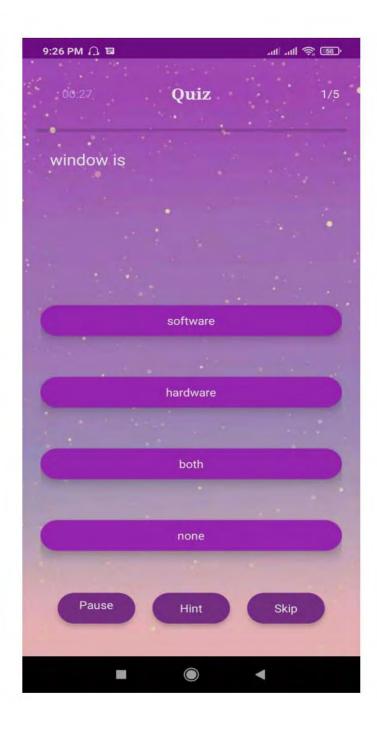
7.5 Add Quiz questions



7.6 Students/User registration



7.7 Quiz



7.8 Result of Quiz

