International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 10 | Oct 2021 www.irjet.net p-ISSN: 2395-0072

Interview Ready: Quiz Application for Aptitude

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Abstract - *"Interview Ready" is an Android Application[1] that tests the user's ability in terms of aptitude, logical reasoning, mathematical reasoning and data structures and algorithms by having multiple quizzes. This helps overall in preparing the user for technical interviews and for roles related to Computer Science and Software Development / Engineering. This application has been made keeping in mind the need of a college to train their students for their interview rounds. It is useful for candidates who are looking to sit for placements and need to practice these aptitude-based subjects on-the-go. Being a mobile application built with android studio, the software has the advantage of being portable and usable anywhere. Users can select the topic they want to attempt a quiz on- DSA/ Logical Reasoning/ Quantitative Aptitude, the screen pops questions and four options. While practicing questions that are given a quiz the user can also keep track of time spent on each question with the help of the timer. It also gives its users the option to look up references for topics and gain study material from where they can make their concepts stronger and solve the questions easily by clicking on the button functionality 'Study' that would redirect the user to the study page of the application. It also provides the users functionality of checking their previous scores through which they can analyse and work on the topics they lack knowledge in. Links for practicing more questions are also provided in the study section itself.*

***Key Words*: Android Application, Database, Activity, Animations, Layouts and Intents, Android Studio, Real time, Aptitude**

1.INTRODUCTION

Technical interviews and aptitude testing are an integral part of all recruitment procedures. They are the first step to ace your job interviews.[2] With the increasing requirements of the industry, companies today are looking for skillful and directly employable candidates. These industry standards push students to not just focus on their academic scores, rather than to groom themselves holistically. Furthermore, having adequate knowledge of aptitude, quantitative, numerical, and logical reasoning abilities is equally important, as good university scores alone will not guarantee you a job in today's scenario. Keeping in mind all these factors this quiz application has been designed that uses a series of interactive models to encourage and motivate its users to push past their limits and conquer these topics. The purpose of this application will be to help and guide its users to practice and perfect all the topics needed to ace their job interviews and land them their dream jobs. This application focuses on three major topics necessary for a computer science engineer or a software developer, Data Structure and Algorithms, Logical reasoning and Quantitative aptitude.[3][4]

1.1 FRONT END:

The user is greeted with a splash screen stating the name of the application 'Interview Ready' as soon as they open the application. The next Activity contains the login / registration page where the users can sign up with new credentials for the first time, or identify and authorize themselves with their credentials.

Once logged in, the Activity houses the buttons for allowing the users to give a quiz, study from the provided material or view their previous quiz performances. After which, the users have to choose which subject they intend to continue their chosen action with.

In the Quiz Activity, we have questions displayed and the options correspondingly. Once all the questions are answered, the total is summed up and displayed on the Result Activity with confetti animation. The user is then directed back to the Main Activity from where they can choose again to give a quiz, study from the provided material or view their previous quiz performances.

1.2 BACK END:

Once the quiz is given and the result is summed up, the result is then sent to the realtime database (here, Firebase), where it is stored in a NoSQL manner. Every user has a unique ID corresponding to their credentials from their time of signing in and accordingly, the data is stored with respect to those credentials and ID.

Upon the request of displaying the previous results, the database returns the quiz results according to their subjects to the front-end where it is appropriately displayed.

Results are stored according to their subjects and are counted anew when a new instance of a quiz is started.

2. PLATFORM / TECHNOLOGY

We have used multiple platforms to build our project and give it an easy to use interface with some animations to make it interactive and enjoyable to use.

Table -1: Platforms:

SR NO	Technology Used	Description
1	Android Studio	To develop android application
2	GitHub	For sharing and committing changes on source file
3	Firebase	To store user data
4	Lottie	To add animations

2.1 ANDROID STUDIO:

Android Studio is Android's official IDE. It is purpose-built for Android to accelerate your development and help you build the highest-quality apps for every Android device. The following features are provided in android studio:

1. Gradle-based build support

2. Android-specific refactoring and quick fixes

3. A rich layout editor that allows users to drag-and-drop UI components, option to preview layouts on multiple screen configurations.

4. Support for building Android Wear apps

5. Built-in support for Google Cloud Platform, enabling integration with Firebase Cloud Messaging (Earlier 'Google Cloud Messaging') and Google App Engine

6. Android Virtual Device (Emulator) to run and debug apps in the Android studio.

2.2 GITHUB:

GitHub, Inc. is a provider of Internet hosting for software development and version control using Git. GitHub provides a Web-based graphical interface. It provides access control and several collaboration features, such as a wikis and basic task management tools for every project.

2.3 FIREBASE:

Firebase is a Backend-as-a-Service — BaaS, that started as a YC11 startup and grew up into a next-generation app-development platform on Google Cloud Platform. Firebase is categorized as a NoSQL database program, which stores data in JSON-like documents. We have used firebase authentication, it supports authentication using passwords, phone numbers, Google, Facebook, Twitter, and more. The Firebase Authentication (SDK) can be used to manually integrate one or more sign-in methods into an app.[5]

2.4 LOTTIE:

Lottie is an open source tool, it is a JSON-based animation file format that can be used on any platform as easily as static assets. It works on any device and can scale up or down without pixelation.

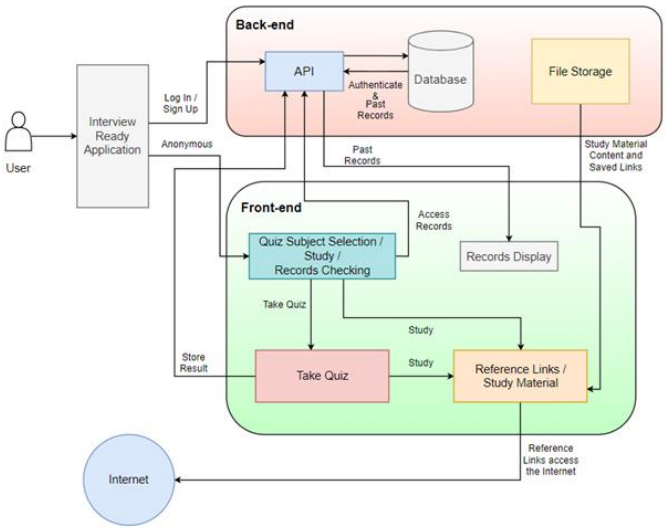

Chart -1: Architecture diagram

Fig -1: Starting Screen

3. CONCLUSIONS

The application is a quiz type of an application which tests the user's knowledge, aptitude and ability and prepares them for technical interviews. As and when required, the user can choose to study specific topics from the study material and reference links provided by the app. This way, practice for interviews can happen on-the-go and be portable and handy at all times. Thus, this project satisfies the problem statement and can be used as an aid during placement activities of college or as per individual use.

This application can further be expanded to assess its users overall behaviour, thinking patterns, their strengths and weaknesses, their reactions, etc in order to provide them a detailed analysis on where they have to work and how. Additionally, the game can monitor their progress and encourage the player to play the levels he/she needs to work on. Furthermore, including better graphics and GUI.

ACKNOWLEDGEMENT

We would like to express our sincere gratitude to our Mini Project guide Prof Mohandas Pawar and Mini Project teacher Prof Nilima Kulkarni for their able guidance and support in completing our project. We would also like to extend our gratitude to the Principle of MIT-School of Engineering Dr. Kishore Ravande and our Dean and Computer Science Department Head Prof Dr. Rajneeshkaur Sachdeo for providing us with all the facilities that were required.

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