Aptiprep: An Android Aptitude Application To Enhance Learning Outcomes

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ABSTRACT

The students appearing for placements and various other exams like GRE, GMAT, GATE prepare themselves by appearing for mock tests and searching for the study material from different websites. For this they require an internet connection, which is not possible to access everywhere. Today, the smart phones have replaced desktop PC's and laptops in many manners. There are offline android applications available for aptitude tests, but they don't include all topics and they don't have random set of questions, timer and timer etc., This app will include all the features that others don't have. This paper provides a comparison of the existing aptitude applications available in Android market along with the idea of developing an application that overcomes the flaws of the existing applications. This application has been developed within the framework of the current study that provides its users with a fast, effective and efficient learning environment, thanks to today's various mobile devices.

Keywords Android, Aptitude, Test, Mobile Operating System

1,Introduction:

Today, it is seen that many people that prepare for their exams are studying in buses, in parks or in a cafe with a test book in their hands. The tests prepared via electronic exam systems, now, have been an alternative for those who prepare for their exams by using their personal computers or mobile devices. Connecting such services requires a computer and an internet access. In other words, it is necessary that students must be in an environment which provides above mentioned conditions in order to access such electronic exam systems. Mobiles are an integral part of daily life. With time, customers are expecting best and very versatile applications in less time. It is big challenge to develop high performance mobile applications in this competitive market that would meet the expectation of customers. The advancement in mobile technology has improved everyone's life. Nowadays various mobile technologies as well as mobile phones compete in the market. The users use various applications in their day-to-day life to reduce the burden of work in some way or the other. One of the uses of mobile devices is "mobile learning", which can be defined as "all kinds of learning that do not take place in certain predetermined fixed places".[1] The student appearing for placements and other

engineering related entrance exams, have to prepare themselves in technical as well as non-technical areas. For this they have to accumulate study material from different sources. Also, there are many mobile applications available that provide mock tests. But there is no application that provides all the sections under one roof.

They also surf around internet for some tests for practice. But due to some reasons like slow network or no network or many a times the website server may not respond due to server overload, users are refrained from appearing the test. One solution to this is to have an application in mobile for practicing test Offline.

With the number of smartphone users are increasing each day, there is an equal increase in the number of application developers for the same. According to the 2013 survey Android occupies 81.3% of the total market share.

Android technology, being available freely for download, along with enhanced data storage (using SQLite framework) occupying less space leading to increasing number of users using android technology. By considering this, Android platform was chosen to develop this application

2. RELATED WORK

The Pocket Aptitude App is rated in the top 5 aptitude applications in android market developed by Sindhu Rajan and designed by Yalini Kumara guru. Pocket Aptitude is a collection of 1000+ quantitative aptitude questions and word problems frequently asked in competitive examinations and placement papers. It is designed as a preparation tool for job aspirants and those waiting to crack CAT, XAT, MAT, GRE, GMAT, SAT, NTSE and various bank exams. People with an inclination towards mathematics can use this app to sharpen their IQ, test their aptitude skills and enrich their knowledge.[5] This application has various fine points and flaws like it provides a good user interface but only quantitative tests are conducted. It provides score calculation for practice test but does not store it for future reference. Another flaw is that the user gets the same set of questions each time they appear for the test.

The Logical Reasoning and Aptitude application developed by Esdandro is also popularly used aptitude test application. Logical Reasoning helps in improving problem-solving skills by focusing on Logical Reasoning Questions. Logical Reasoning will help you in preparation of admissions tests and other different kind of exams,[6] but the user interface is not interactive, the user has to scroll horizontally to view the entire answer. It just has MCQ's without timer for test and without score evaluation.

The Aptitude Interview Questions Application developed by Programmer world and the Aptitude Questions Application developed by Lakeba Mobile Apps are the applications that do not provide a test.[7][8] They just consists of quantitative questions and answers , yet they are in the list of top-rated apps in android market. These apps

can be used for just gaining some information, but not to test one's knowledge. In Aptitude Interview Questions Application, sections are not named properly, this may confuse the user which section has what kind of questions and also it is not compatible with all devices. In Aptitude Questions Application, the questions are not categorized.

The Aptitude App is developed by Pradeep Kumar Rapolu is another most frequently used app. This Offline Application provides the entire stuff for the students and job seekers to crack the Campus recruitment tests. A complete information regarding formulas and FAQs have been provided, for almost all type of topics in Arithmetic and Verbal reasoning.[9] Good navigation flexibility, makes operating the application very simple, but the user interface is not attractive. It does not provide test, just simple questions and answers.

3. PROPOSED SYSTEM

By considering the pros and cons of the existing applications, this application has been developed to cover all the features and overcomes the cons of the already existing applications. By keeping in mind, the users need and the topics that are important for placements and other engineering entrance exams, this app consists of many sections like Quantitative, Verbal and Logical, Computer Fundamentals, Programming Languages, Brain Teasers. These sections are further categorized into sub sections, each section name describing the type of the test decently.

a) **Splash Screen:** It is the splash screen, in which the app logo and app name will be displayed for a few seconds and disappears.

b) **Home:** This is the main page of the app. This contains all the tutorials like Quantitative aptitude, Verbal Ability and Reasoning Ability. This works in the offline mode, so that the user can view them anywhere, anytime. This also includes daily questions, in which we posts daily aptitude questions and answers for those are posted on the next day. Another modules Company based questions, which displays specific company questions.

c) **Quiz :** This is another module in the app in which has an Online Quiz of various topics. It has many sets of questions in which the user can take the test only when they have an internet connection. The user can bookmark any questions, and can view them when they need.

d) **Bookmarks:** In this section, the question which are bookmarked by the user will be displayed here with the answers. The user can also delete the bookmarks done by clicking on the delete icon.

e) **Timer:** A timer in which runs throughout the test, and when the time gets over, it

automatically comes out from the test and displayed the marks which got till that.

f) Score Board: After each test is completed, the score will be calculated. If they get full marks, the user can go to the main page, or else, the user asks to take the test again.

f) Rate Us: This makes to rate the app in the playstore.

g) About Us: This option gives the information about the developers of this application and what is this application about.

h) Share App: The app can be shared with your friends.

h) Help: This option provides the basic ideas of to use this application and how to navigate through different pages.

i) Feedback: The user can give the feedback about the app or any improvements can be done can also be done here.

j) FAQ's : Frequently Asked Questions are displayed here and answers for those questions are also displayed.
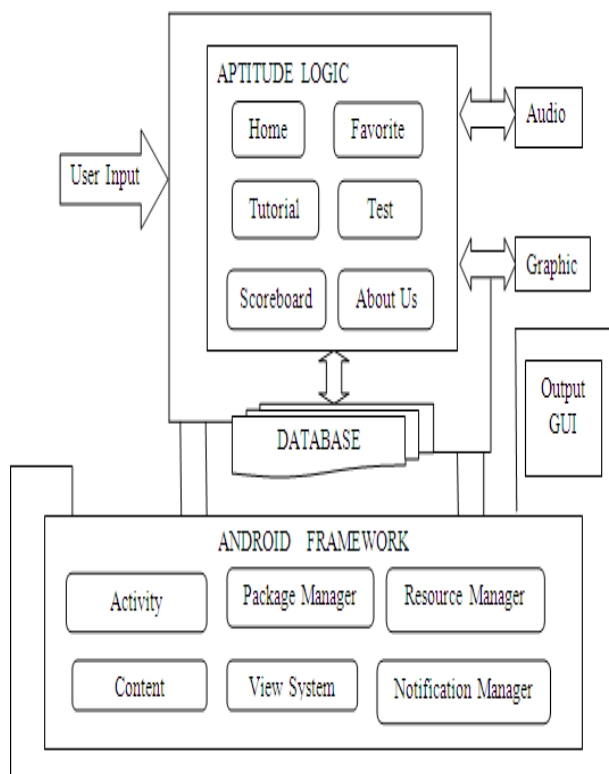
4. ARCHITECTURE DIAGRAM:

Figure 1. System Architecture of Offline Android Aptitude Application

can pause the test, which will freeze the entire test and timer as well, later the user can resume the same test from the same state. After that, a score board will be displayed indicating the correctly attempted, attempt and wrong questions along with the solution of each question.

5.SYSTEM DESIGN

Use Case Diagram

A Use Case diagram is used to represent the actions by the user in a system. It has roles and actions. Each user/role has different privileges and each perform different actions. For the Android Aptitude application, there is only one user and the user can do the below actions:

6. RESULT:

a) User Interface:

      -The pocket aptitude app has a very user-friendly interface that is interactive and provides easy navigation throughout the app.

      -In the Offline Android Aptitude Application, the user can smoothly navigate by using header and a help file. The user interface is made interactive by following principles of Human Computer Interaction (HCI) like simplicity, compatibility, comprehensibility, clarity, consistency, aesthetically pleasing, flexibility, efficiency, familiarity, responsive.[11]
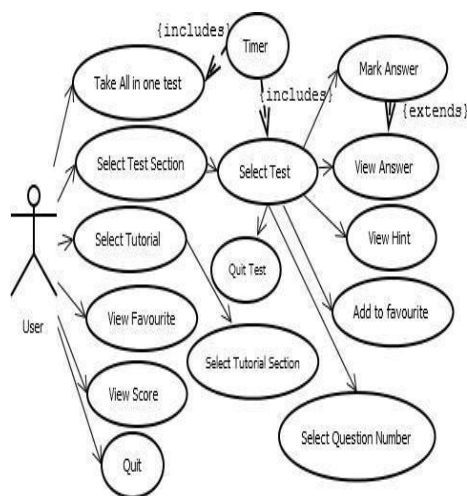
b) Categorization:

-The Pocket Aptitude App provides test facility for only quantitative section.

-The Logical and Reasoning provides test for quantitative and logical sections.

-The AptiPrep app provides those features in offline mode:

      1. Quantitative Aptitude
      2. Verbal and Logical Reasoning.
      3. Company based questions

- Features in Online mode:

      1. Company-based questions
      2. Daily Questions

Tutorial:
The AptiPrep app provides section-wise tutorials in the offline mode.

Timer: The Online quiz provides timer for the practice test.

Bookmarks: The user can bookmark the test and can view them when they need. This can be viewed only in the online mode.

6. IMPLEMENTATION

On starting the offline android aptitude application, the main screen is loaded with the header that provides navigation to the Score Board of the appeared test, questions that are marked as favorite and Tutorials. The dashboard area has 5 sections namely Quantitative, Programming language, Verbal and Logical, Brain teasers, Computer fundamentals and an All-in-Onetest. Selecting any of the sections, a list of sub- sections will be provided. The test with a random set of questions will be started by selecting any of the sub sections. Simultaneously a timer will be started. The user can jump to any other question by using the go to option. The user can mark any question as favorite. The user can finish the test before the time elapses, or once the time is up, theuser will be forced to finish the test. At any point, the user

c)   Score Page:

The score page will displays the mark gainedduring the practice test taken.

8. CONCLUSION:

This research paper discusses about the fine points and flaws of the 5 top most android aptitude applications. By considering the need of the students for placements and other entrance exams, this application has been developed in the most preferred mobile operating system i.e. Android. This application has been developed to overcome the flaws in the existing system like properly categorizing the sections, providing section wise tutorials, random set of questions and timer for each test, maintaining score board along with a user friendly and attractive and easy to use user interface. It is designed as a preparation tool for job aspirants and various aptitude tests.

9.FUTURE SCOPE

The user may require to perform some calculations, so a scratchpad can be provided in future. Also, the score can be displayed graphically for easy and fast evaluation of the users progress report.

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