

'Peer Aptitude' – An application that offers interactive learning course with built-in test and solutions

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Abstract: Peer Aptitude is an android application which is developed to overcome the difficulties and to improve overall skills which includes logical reasoning, verbal and quantitative skills. The purpose for making this app is to provide study material and test papers for the aspirants of GMAT, CAT, SAT, MAT etc. Variety of questions are been taken from the advice of the experts of the concern fields. In this app, we provide the tips, short cuts and easy methods to solve the problems easily. Overcome your difficulties and improve your learning abilities. Wide ranges of questions are taken from previous year question paper. It is designed for job aspirant who want to crack bank exam as well as in competitive exam. Covers all sections of skills and immediate result are being carried out.

Keywords: Android app, Peer aptitude, Eclipse, MySQLite, Logical reasoning, Verbal reasoning, Quantitative.

1. Introduction

This particular part of the application is for providing the provision for the user to enter the app to perform various test based on quantitative question, logical reasoning questions and verbal reasoning. The test can be given subject wise or a full length Adaptive test. This project is made with the help of eclipse and the operating system used in this project is Android. Database is used to fetch questions for the given set of questions. Application is used for providing the provision for the user to see the solutions of the questions and also get the necessary trick to solve those kinds of problems. Wide ranges of questions are taken from previous year question paper. It is designed for job aspirant who want to crack bank exam as well as competitive exam. Covers all sections of skills and immediate result are being carried out.

2. Software Requirements

Operating System – Windows XP or above: We need an operating system with the help of which we can provide a basic platform to our project.

Data manipulation. SQL is used to insert, update and modify the data transparency for both the provider and consumer of the utilized service.

3. Hardware Requirements

Hard Disk- 512 MB minimum: We require a hard disk for storing our project that should have a space of 512 MB or above.

RAM- 256MB minimum: For the storage purpose of the project we require primary memory (RAM) which should be 256 MB or above.

Processor- Pentium 4: We need a processor for creating our project which should be Pentium 4 and above.

Monitor (For Display): This is the most important part which can never be neglected. We require Emulator for the display of our output.

Android Phone: Any simple android version mobile phone which can access our android application with minimum version of Gingerbread 2.3.3.

- Technology (Language) – Android Studio:** Android is an operating system based on a linux kernel and design primarily for touch screen mobile devices such as smart-phones, tablets and computers.
- Net Beans 8.1:** Net Beans platform allows the application to be developed from a set of multiple modular software components which is called as modules.
- SQL (Structured Query Language):** It is a standard computer language for relational database management.

4. Problem Identification

The aptitude, logical as well as verbal skills are compulsory to be placed in reputed companies. The aptitude test is the first stage of getting short listed by the candidates for appearing in all kinds of recruitment drive.

We developed to overcome the difficulties and to improve aptitude skills as well as Verbal reasoning skills. This app is being designed for the students appearing for GMAT, CAT, SAT, MAT etc. The wide ranges of questions are taken from the advice of the experts of the concern fields. In this app, we provide the tricks and short cuts to solve the problems easily.

5. Existing System

There are many existing applications which does not provide solutions for the set of given questions provided in there application. This application takes a huge amount of time in loading the project. Time management is the most essential part while appearing in a competitive exam and for practicing we need to develop it in the app which is missing in the existing application. Reasoning is not a part of commercial exams before but they include it nowadays in competitive exam which is not there in the existing system. User of the application wants to have a reference for that they require previous year question papers which is not included in the existing systems.

6. Proposed System

In the proposed system we will provide solutions of the set of questions that is asked in the application. Loading of the application will become quick if we use a purchased domain instead of an open source while making it online. That will increase the speed of loading. Timer should be set to overcome the problem of time management issues. Reasoning is also included alongside with verbal & quant. Previous years question papers are provided for reference.

7. Methodology

A variety of such types of frameworks have evolved over the years, each with its own recognized strengths and weaknesses. One software development methodology framework is not necessarily suitable for use by all projects.

Rapid Application Development

According to the project requirements and needs we applied RAD model which is best suited in accordance with our project as our application is divided in different modules like the solution page & list of various tests.

Business Modeling – Planning of what all topic should be included in the application and the subjects provided inside those topic. The hardware and software requirements like Android studio for developing the project & SQL for database to provide questions.

Data Modeling – Sources to get the current set of questions. Solved papers of previous year and solutions include in the app.

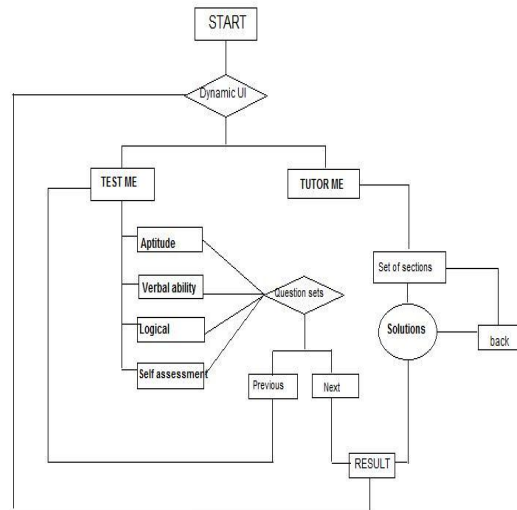
Process Modeling- First we developed user interface in which the main page consist of only 3 buttons and a navigation. Then we provided the set of questions in those tests with the help of database. Setting the timer. After that providing result after completion of the set. We provided solutions after that.

Application generation- Generating the application while providing sources of the data as whole. Connecting the database with the android application. As questions are given in the database for running those we require Android application.

Testing & Turnover- Unit testing is done after creating every module of test and integration testing is done as a whole in last in the Android Emulator provided by SDK.

Module Details

The modules used in this project are as follows:-



□ Main Screen

This is a welcome screen which contains two buttons that is teach me & tutor me.



Figure 1: Welcome screen

Test me

Consist of aptitude, verbal ability, logical reasoning and self assessment.



Figure: 2 Test me

Aptitude Test Page

This page gives the available test papers of averages, progression etc. It shows green line which indicates how much part of the paper is attempted by the user.

Peer Aptitude	
Available test papers	
NUMBER SYSTEM 100% Completed	Total mark 28
PROGRESSION 100% Completed	Total mark 8
AVERAGES 0% Completed	Total mark 8
ALLIGATION 0% Completed	Total mark 8
PERCENTAGE 0% Completed	Total mark 8
PROFIT AND LOSS 0% Completed	Total mark 8
INTEREST 0% Completed	Total mark 8
RATIO AND PROPORTION	Total mark 8

Figure: 3 Aptitude available test papers

Verbal Test Page

This page gives the available test papers of idioms, antonyms, synonyms, and all verbal tests. It shows green line which indicates how much part of the paper is attempted by the user.

Peer Aptitude	
Available test papers	
Idioms 20% Completed	Total mark 20
Change of speech 0% Completed	Total mark 20
Antonyms 0% Completed	Total mark 30
Verbal analogy 0% Completed	Total mark 20
Spotting Errors 0% Completed	Total mark 24
Synonyms 0% Completed	Total mark 30
All verbal tests 0% Completed	Total mark 164

Figure: 4 Verbal ability test papers

Reasoning Test Page

This page gives the available test papers of directions sense, number series, sitting arrangements, statement and conclusion, pattern completion and other collective reasoning subject. It shows green line which indicates how much part of the paper is attempted by the user.

Peer Aptitude	
Available test papers	
Direction Sense 0% Completed	Total mark 20
Number series 0% Completed	Total mark 20
Seating Arrangement 0% Completed	Total mark 14
Statement and Conclusion 0% Completed	Total mark 18
Pattern Completion 0% Completed	Total mark 20
All reasoning 0% Completed	Total mark 92

Figure: 5 Logical reasoning test papers

Self assessment

This page provide the question sets of all the above mentioned sections that is quantitative aptitude, logical reasoning and verbal ability.

□ Tutor me- (solutions)

This page provides all the solution of the given questions asked in all the three sections with tricks and shortcuts.



Figure : 6 Solution page

□ Clicking on test page

The page displays a timer with a question which consist of options you need to answer with a previous and next button.

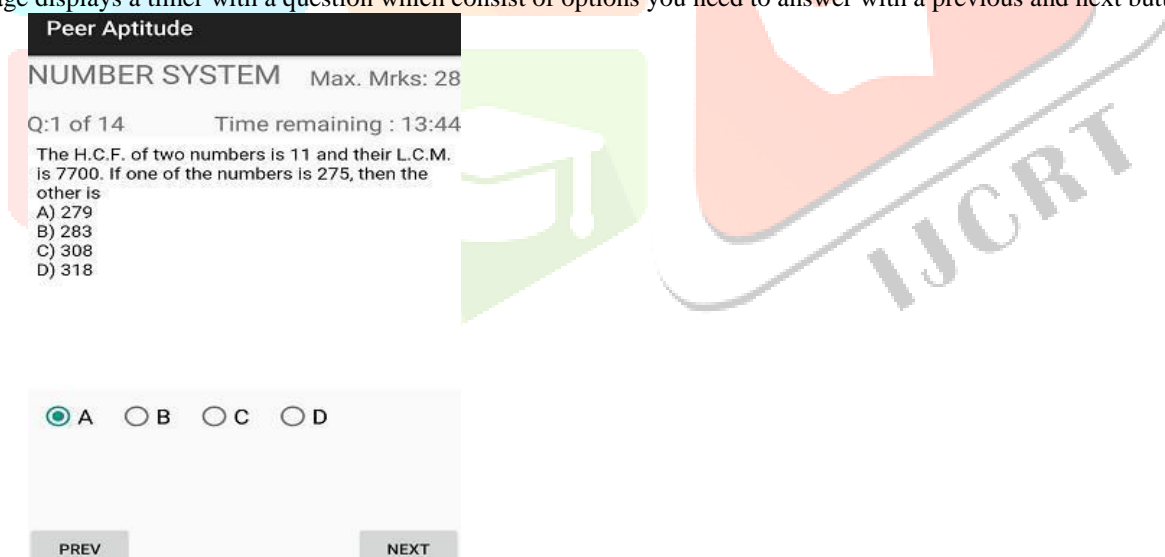


Figure: 7 Test papers

□ Result pop up

Shows a pop up in which the result is being generated about scores which is scored by the user immediately after the test.

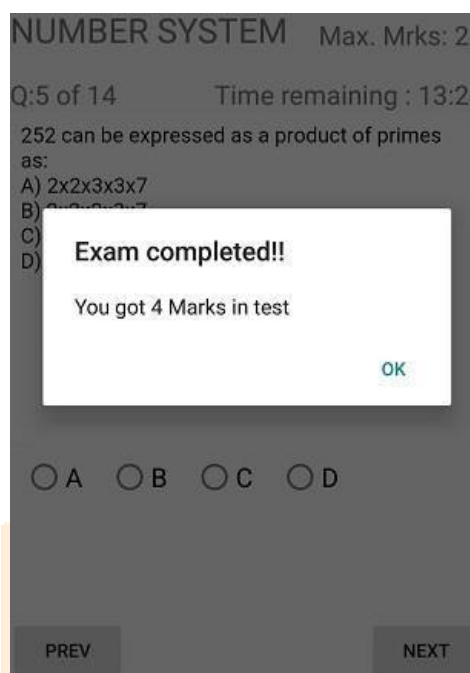


Figure : 8 Marks obtained

8. Overview

Various kinds of testing is been done in this project these tests include unit testing & integration testing. The result of each of these tests are shown below in the table. Testing covers a wide range of areas where any verification & validation of software functionality can occur.

Integration Testing

Each module is combined, tested and run as a whole in the Android Emulator.

Unit testing

The project is divided in different modules and tested individually. Test cases are given below-

Serial No.	TEST CASES	EXPECTING BEHAVIOUR	EXHIBITING BEHAVIOUR	RESULT
01	Main page	Should contain buttons of test me and tutor me.	It does contains working buttons with test me and tutor me.	PASSED
02	Aptitude button	Should contain set of topics	It contains set of topics.	PASSED
03	Verbal button	Should contain set of topics.	It contains set of topics	PASSED
04	Reasoning button	Should contain set of topics.	It contains set of topics	PASSED
05	Tutor me	Should contain solution and solved papers.	It has solution set & solved papers.	PASSED

9. Discussion

This application is made for Android operating system. It is an informative application which saves prospective students time while learning or preparing the quantitative knowledge or verbal reasoning. One can also enhance its skill on the topics with frequent practice. This project is concentrated basically on enhancing the skills of the users.

10. Result

The Application provide solutions of the set of questions that is asked in the application. Loading of the application will become quick if we use a purchased domain instead of an open source while making it online. That will increase the speed of loading. Timer should be set to overcome the problem of time management issues. Reasoning is also included alongside with verbal & quant. Previous years question papers are provided for reference.

- This App will enhance the verbal and quantitative concepts.
- Overcome the difficulties and will improve your logical reasoning skills.
- Wide ranges of questions are taken from previous year question paper which will help a lot to the users.

- Cover all sections of skills.

11. Conclusion

There are many existing applications which does not provide solutions for the set of given questions provided in there application. The application take a huge amount of time in loading the project. In the proposed system we will provide solutions of the set of questions that is asked in the application. Loading of the application will become quick if we use a purchased domain instead of an open source while making it online. It is an informative application which saves prospective students time while learning or preparing the quantitative knowledge or verbal reasoning. One can also enhance its skill on the topics with frequent practice. This project is concentrated basically on enhancing the skills of the users.

12. Scope of Future work

- Graphics could be improved to an extent.
- App can be implemented with more subject coverage.
- It can also be improved to get the learning section for each topic.
- A scoreboard for the user can be displayed showing there highest score by appearing in exam.

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