Study on Challenges in Android Application Development

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Abstract: Smart phone is taken into account a vital innovation that has modified the human life in many aspects. Android has emerged because the most generally used OS in good Phones. Android OS is opening supply and freely accessible to everybody. On android OS, several applications (apps) are out there for fun and diversion. With cut-throat competition for varied examinations, students have enraptured from standard means of learning to M-learning for preparation. This paper discusses the look and development of an automaton primarily based app named as iquiz which will facilitate students in preparation of competitive exams like UGC-NET, GATE etc. whereas they're on move. This paper additionally highlights numerous challenges sweet-faced by developers in android App Development.

Keywords: Android SDK, ADT Plugin, Eclipse Juno, JDK SE 7, Android Apps Development

1. Introduction

Nowadays, technology is progressively utilized by person in each field. As folks move from one place to a different, several wireless technologies area unit accessible to stay in touch with others, while not regard of the location. The increasing quality of good Phones has drawn the attention of virtually everyone. in conjunction with creating and receiving calls, users will send and receive messages, access the web, digital media, incorporate audio/video recording etc. good Phones additionally contain inbuilt keyboard, high resolution camera, front facet camera for video conferencing, bit screen etc. To different good phones have different operational systems. A mobile app, short for mobile application or simply app is an application that runs on good phones, pill or mobile phones. Apps are pre put in or downloadable items of code that may do virtually everything. Apps build mobile additional like transportable computers having multi core processors, gigabytes of memory and a real software. Originally mobile apps are created accessible for informational functions that embrace Gmail, calendar, weather data etc. With increase in technology and user demands, developers began to build apps for alternative functions like games, banking, video chats etc. an app will show the information during a similar approach as an internet site, in conjunction with alternative advantages to transfer the content that may be used offline, just in case the web is not accessible. There are several apps accessible in market these days for various operational Systems i.e. Android, Blackberry and Apple etc., within which android has the most market share recently.

2. Connected Work

Encouraged by launch of cheaper good phones, students have started exploitation Apps for academic functions. Several Apps are accessible that provides course material, assignments for practice, text books Etc. for reading. Several Apps give facility for discussion by chatting rather than about to category for determination their issues. Additionally students will value more highly to show data in line with their alternative. completely different
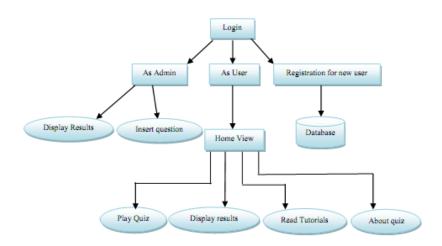
celebrated apps for education embrace Chemistry Helper, English Helper, youngsters numbers, Math Lite, Mathway, high school Physics and Vocabla etc. several Apps area unit accessible to assist the scholars to arrange for competitive Exams. most ordinarily used Apps embrace UGC internet, within which there are modules for curriculum of UGC-NET test, Sample of Objective sort queries, Reference books and downloading of previous year question papers etc. an analogous App named Indian History is obtainable in that chapter wise tutorials area unit available for college kids to learn. They will play the quiz and regarding 25 queries are asked with four choices for every question and student has got to choose one possibility and variety of correct answers are going to be shown at the tip. An extra App named Gate 2015 is obtainable having modules for curriculum, apply queries, gesture papers, references of subjects, tips Etc. The Limitation is that there is ought to embrace all the topics during a stratified manner. An analogous App named internet Prep+, is obtainable having modules i.e. timed test, Random take a look at, Chapter Wise take a look at. Limitation is that the amounts of queries are not enough for preparation. Keeping visible the need of scholars and non-convenience of appropriate App, it is extremely needed to develop an App that helps the scholar to arrange for competitive exams like UGC internet gate. Existing system accessible for preparation is to review by sitting at one place and there's no facility accessible for preparation whereas they're on move. The most important drawback is that the majority of the Apps offer solely details regarding the way to prepare, instead of serving to the scholars to arrange. Numbers of queries accessible also are restricted. There is no provision to store the results of scholars, in case, the Apps provides facility of tests. Additionally the interface of the present Apps is not attention-grabbing. The limitation of the present apps is that they are not according to the need of scholars. The thought is to form a general app having queries for all the topics in a stratified manner and to incorporate tutorials for all those subjects to assist them learn so they'll take a look at themselves by giving the tests. Therefore an App iquiz is intended and developed.

3. Design of Proposed System

The projected App aims to be User centrically. When registration, user will log in and might begin the take a look at upon choosing the topic. Every question is given one minute. User should answer the take a look at among the time and when submission, correct answers are shown. If the user doesn't provide the solution among such that time then next question can seem. Conjointly user will read his/her previous results however administrator will read the results of all the users. Actual Users are the scholars, by work in they will play quiz. Admin task is to feature a lot of queries and to stay track of previous moreover as current results of quiz.

Technically, once a user starts the App he/she will login as AN administrator or a user, just in case user is already registered or he/she will register. When registration, a username and parole are allotted to user. If the user login as AN administrator, user will read the results of all the opposite users or will insert the queries into the information by choosing a specific space and so by choosing the topic related to that space. If the user has login as straightforward user, then home read of the App are visible. Within the home read, are 5 icons for various functions? By clicking the Quiz icon, he/she will play the quiz, scan the tutorials and show the results etc. for every time period of 1 minute are given. User should answer the question among that point. If the user answers the question, correct answers are shown. User will scan the tutorial for learning. User will read his/her own previous results however administrator will read the results of all the users.

4.   Implementation

We need to the Platform used is android and language utilized is Java and XML. SQLite is used at the backend. For setting surroundings of android, there is a minimum demand of JDK i.e. java should be put in on the system. JDK SE development kit seven is employed for this purpose. Code is written by using a editor i.e. Eclipse that could be a open source editor offered. When Eclipse (Juno, the default version) is put in, there is a desire to attach android SDK with Eclipse, this is done by victimisation ADT Plugin. By victimisation ADT Plugin link, plugin developer tools will be downloaded and put in. SQLite is automatically embedded into the humanoid device. Victimisation SQLite in android doesn't need any setup to be followed. Developers solely got to outline SQL statements for making and change information in SQLite. If the App creates and uses information then the default location of information is DATA/data/APP_NAME/databases/FILENAME. Numerous modules of the app are as follows:

- User login module: during this module, user needs to initial register. Users are stirred to register activity when clicking register button on Login screen. User needs to fill details like Username, Email-id, Mobile variety, password and make sure password Etc. solely registered user will play quiz by work in.
- Admin module: If the user log in as an Admin then user will add new queries by choosing a specific space and a topic related to that space or create any changes to information. Admin will show results of all users date wise or name wise because the case is also.
- Registration for brand new User: If the user needs to play quiz, initial user should register by filling details like User name, Email-id,Password, Confirm Arcanum etc. when prosperous Registration, user will login. When login, user will play the quiz.
- Home view: This module shows icons for enjoying quiz, About, Results, Exit. Once user clicks on Quiz icon, the choices are displayed, representing completely different fields. Once user chooses some specific subject then random queries are asked. Every Question is going to be given one minute. User needs to answer the question at intervals that point. At last, results are displayed.
- Results view: This module is used to show previous still as current various users. By viewing the results, user will live performance compared to last make an attempt.

5. Findings

The main objective of this project was to check the information of user in numerous fields and additionally on the premise of score, students will decide, wherever they're lacking. It provides facilitate in each field enclosed in iquiz application. It provides tutorials to students in order that they will learn at the side of giving the tests.

Based upon personal expertise in developing iquiz and offered literature, the subsequent square measure the challenges faced by the humanoid App developers:

- **Multiple Devices:** The foremost common challenge is to line the properties of app for various devices with different screen sizes, resolution etc. There are several versions of every android device and whereas emotional the app, version specific details ought to be checked this makes the task terribly vital. Because it needs to be run in numerous devices, so it additionally affects the price and budget implications. for every version of android, developer needs to write code once more as a result of their square measure migration drawback offered to migrate the prevailing code to new platform. Sometimes, behavior is additionally completely different across new platform.

- **Testing of android Application:** Presently, the event surroundings don't have enough tools for testing. There is a desire of testing techniques for the android Platform. Additionally debugging options should be created offered.

- **Restricted Capabilities of various Devices:** Generally different devices have different capabilities in terms of software system support like some browsers has poor support for HTML5.

- **Emulators/Simulators Problem:** Emulators are the device that gives us hardware surroundings of humanoid Devices whereas Simulators provide USA the software system surroundings. Apps square measure tested on the emulators that don't seem to be enough for testing. Emulators square measure terribly slow and take loads of your time to start out and run.

- **Information Intensive Apps:** Since Mobile Devices have terribly restricted memory, therefore it is terribly troublesome to store Brobdingnagian quantity of information in it. Offline caching doesn't work well and synchronizing with another information supply could be a difficult task.

- **Lack of Software/Hardware Integration:** One Button on humanoid device works otherwise on another device. Therefore it is troublesome to make an app that depends on a specific hardware to try to to an issue.

- **Security Issue:** Since android is an open supply package therefore there will be malware Apps that users will install by mistake or by the other reason that may cause loss of information.

6. Conclusion

Smart Phones has modified the lifetime of everybody. Beside different options, an App in sensible Phones permits to do virtually everything, from enjoying games to try and do business. The event of app delineate in gift paper has given a powerful understanding of varied challenges related to style and development of apps. The expertise has been quite difficult, motivating additionally as satisfying. iquiz App is utilized by students handily whereas getting ready for examination. a lot of queries could also be added   from time to time in order that App will come up with necessities of users. many different modules like on demand MCQ's for a specific subject, Job Notification, Downloading of Tutorials, Downloading of Reference books etc. is added in future for improvement of options.

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