

Case Study: To Develop an Android App

Dr. Poonam R. Shityalkar

I/c, Principal, Gurukul College of Computer Science and Information Technology, Chiplun

Email-poonam.shityalkar@gmail.com

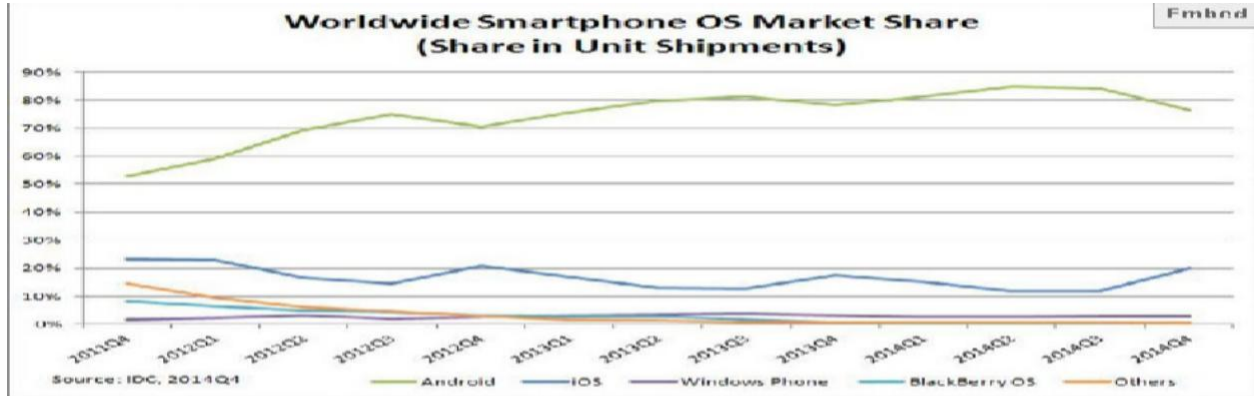
Abstract

Smart telecellsmartphone is taken into consideration an essential innovation that has modified the human existence in numerous aspects. Android has emerged because the maximum broadly used running gadget in Smartphones. Android running gadget is open supply and freely on hand to everyone. When running Android gadgets, you must have plenty of applications (apps) to have fun and entertainment. With cut-throat opposition for numerous examinations, college students have moved from traditional manner of mastering to M- mastering for coaching. The gift paper discusses the layout and improvement of an Android primarily based totally app named as quiz that could assist college students in coaching of aggressive checks like UGC-NET, GATE etc. whilst they're on move. This paper additionally highlights numerous demanding situations confronted with the aid of using builders in Android App Development.

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

1. Introduction

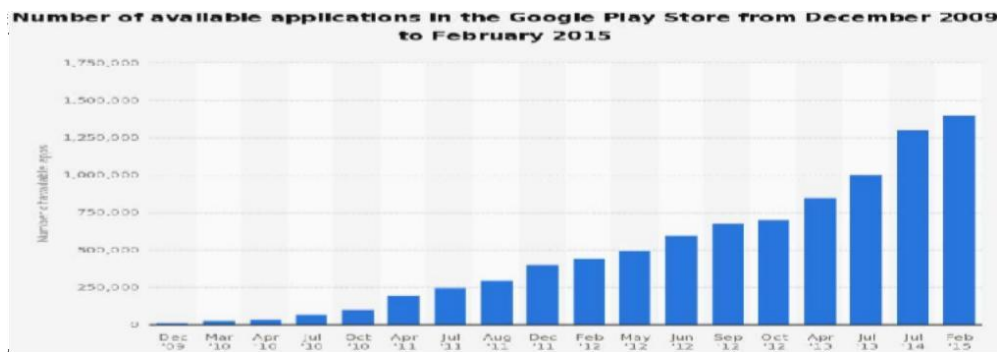
Nowadays, generation is more and more utilized by individual in each field. As humans flow from one area to another, many Wi-Fi technology are to be hard to stay in touch with others, without regard of the location. The growing reputation of Smartphones has drawn the eye of virtually everybody. Along with making and receiving calls, customers can ship and acquire messages, get entry to the Internet, virtual media, include audio/video recording etc. Smartphones additionally incorporate integrated keyboard, excessive decision digital digicam, the front aspect digital digicam for video conferencing, contact display etc. Different clever telephones have special running structures. A cellular app, brief for cellular software or simply app, is a software which runs on clever telephones, pill or cellular telephones. Apps are pre-set up or downloadable portions of software program which can do nearly everything. Apps make cellular greater like transportable computer systems having multi center processors, gigabytes of reminiscence and an actual running system. Originally cellular apps are made to be had for informational functions that consist of Gmail, calendar, climate data etc. With growth in generation and consumer demands, builders began out to make apps for different functions like games, banking, video chats etc. An app can display the facts comparably as a website, in conjunction with different advantages to download the content material that may be used offline, in case the Internet isn't to be had. There are many apps to be had in marketplace nowadays for special Operating Systems i.e. Android, Blackberry and Apple etc., wherein Android is having the most marketplace percentage those days. Fig. 1 depicts marketplace percentage of various running structures from 2011 to 2014[1].

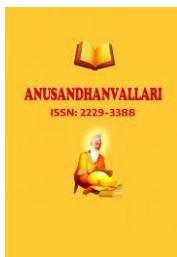


Period	Android	iOS	Windows Phone	BlackBerry OS	Others
Q4 2014	76.6%	19.7%	2.0%	0.4%	0.5%
Q4 2013	78.2%	17.6%	3.0%	0.6%	0.8%
Q4 2012	70.4%	20.6%	2.8%	3.2%	2.0%
Q4 2011	52.8%	23.0%	1.5%	8.1%	14.6%

Fig. 1

There are 3 kinds of Mobile Apps: Native, Web-primarily based totally and hybrid. Native Apps stay at the tool. These apps are to be had through a software save and are advanced for a specific platform and completely make use of the functions of that tool. These Apps paintings in offline mode and might paintings on contemporary API's of that platform. Some distinctive kinds of Native Apps consist of calendar, calculator Etc. While Web-primarily based totally Apps aren't actual applications, rather those are websites which are designed to have appearance and experience as Native App. These require a browser in addition to Data Connection to run. Users first get entry to them through Web page and in that Web page they've the choice of putting in them on their tool. Hybrid Apps are partially Native App and partially Web App. These Apps stay on App save and take gain of tool functions. Many customers are interested in the use of Native Mobile Apps, as they may be used even if there's no Internet connectivity. First Android Mobile become T-Mobile G1, released in United States which incorporates pull down notification window proper from day one, having domestic display screen widgets containing Gmail, Google marketplace widget etc. According to a website, the variety of apps to be had on Google play save (For Android Platform) proper from Dec 2009(16000 apps) to February 2015(1,400, 000 apps) is depicted in following Fig. [2]. Various domain names of Android Applications consist of Entertainment, academic purposes, retail, financial, social, travel, education, healthcare etc.





2. Related Work

Encouraged via way of means of release of inexpensive Smartphones, college students have commenced the use of Apps for instructional purposes. Many Apps are to be had which presents direction material, assignments for practice; textual content books Etc. for reading. Many Apps offer facility for dialogue via way of means of chatting rather than going to magnificence for fixing their problems. Also, college students can pick to show data in line with their choice. Different well-known apps for training encompass Chemistry Helper, English Helper, Kids numbers, Math Lite, Pathway, High School Physics and Vocable[3] etc. Many Apps are to be hard to assist the scholars to put together for aggressive Exams. Most Commonly used Apps encompass UGC NET [1], wherein there are modules for Syllabus of UGC-NET exam, Sample of Objective kind questions, reference books and downloading of preceding 12 months query papers etc.

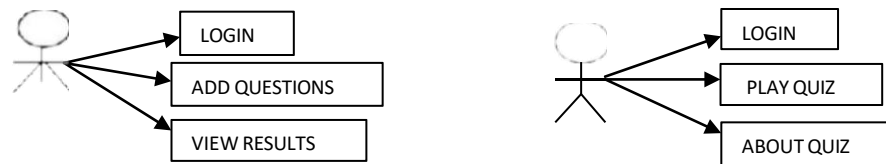
A comparable App named Indian History [5] is to be had wherein bankruptcy sensible tutorials are to be had for college kids to research. They can play the quiz and approximately 20 questions are requested with 4 alternatives for every query and scholar has to pick one alternative and quantity of accurate solutions may be proven on the end. One extra App named Gate 2015 [6], is to be had having modules for Syllabus, practice questions, preceding query papers, references of topics, suggestions Etc. The limitation is that there may be a desire to enclose all subjects in a hierarchical fashion. A comparable App named Net Prep+ [7], is to be had having modules i.e. timed take a look at, Random Test, Chapter Wise Test. Limitation is that the quantity of questions aren't sufficient for instruction.

Keeping in view the requirement of college students and non-availability of appropriate App, it's far exceedingly required to increase an App that facilitates the scholar to put together for aggressive assessments like UGC Net and GATE. Existing device to be had for instruction is to study via way of means of sitting at one location and there may be no facility to be had for instruction at the same time as they're on the move. The essential hassle is that maximum of the Apps deliver the handiest information about a way to put together, instead of supporting the scholars to put together. Numbers of Questions to be had also been limited. There isn't any provision to keep the outcomes of college students, in case, the Apps presents facility of tests. Also, the interface of the Existing Apps isn't interesting.

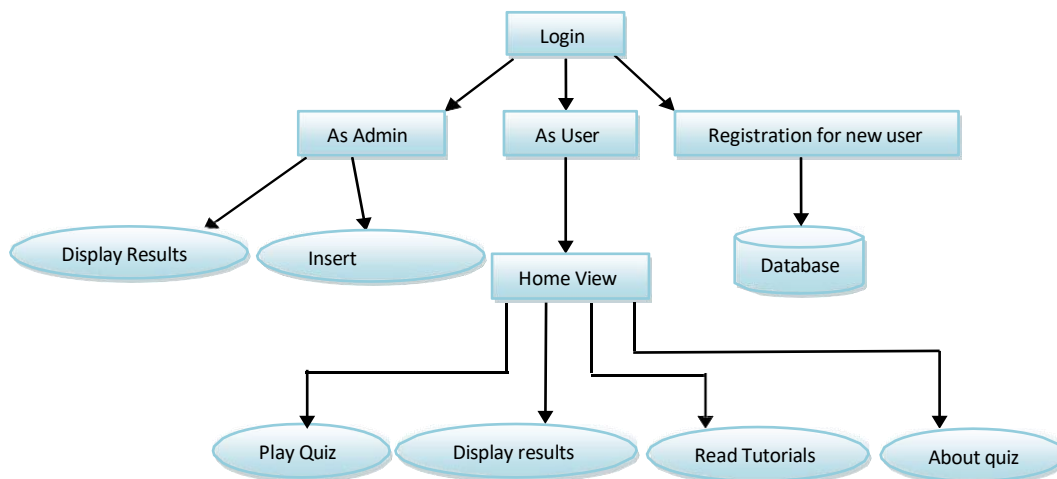
The issue of the prevailing apps is that they're now no longer in line with the requirement of college students. The concept is to make a popular app having questions for all the topics in a hierarchical way and to encompass tutorials for all the ones topics to assist them research, after which they are able to take a look at themselves via way of means of giving the tests. So an App, quiz is designed and developed.

3. Design Of Proposed System

The Proposed App goals to be User centric. After registration, a person can log in and might begin to take a look at upon choosing the subject. Each query may be given one minute. User has to reply to take a look at in the time and after submission, accurate solutions may be shown. If the person doesn't supply the solution inside particular time, then subsequent query will appear. Also, person can view his/her preceding effects, however administrator can view the effects of all the customers. Actual Users are the students, via way of means of logging in they are able to play quiz. The administration's job is to ask additional questions and keep the previous song in addition to the modern quiz effects. Figure below shows the use case diagrams for Admin and customers of the app.



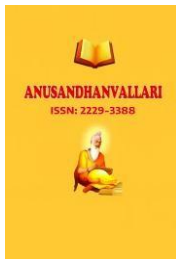
A diagrammatic View of the App:



Technically, when a consumer starts developing the app, they can log in as administrator or a consumer, in case a consumer is already registered or he/she will be able to register. After registration, a username and password may be assigned to the consumer. If the consumer login as an administrator, the consumer can view the effects of all the different customers or can insert the questions into the database via way of means of deciding on a selected vicinity, after which via way of means of deciding on the concern associated with that If the consumer has login as easy consumer, then domestic view of the App may be visible. In the house view, there are 5 icons for specific purposes. By clicking the Quiz icon, he/she will be able to play the quiz, study the tutorials and show the effects etc. For every query, time of 1 minute may be given. User has to reply the query inside that time. If the consumer solutions the query, an accurate solution may be proven. User can study the academic for learning. User can view his/her very own preceding effects, however administrator can view the effects of all the customers.

4. Implementation Details

For implementation of the App quiz, the platform used is Android 4.2 and language used is Java and XML. SQLite is used on the backend. For putting surroundings of Android, there's a minimal requirement of JDK i.e. java need to be mounted at the system. JDK [8] SE improvement package 7 is used for this purpose. Code is written with the aid of using the use of an editor i.e. Eclipse that's an open source editor available [9]. After Eclipse (Juno, the default version) [9] is mounted, there's a want to attach Android SDK with Eclipse, which is obtained using the use of the ADT plugin [10]. By the use of ADT Plugin link, plugin developer equipment may be downloaded and mounted. SQLite is mechanically embedded into the Android device. Using SQLite on Android does not require any configuration to follow. Developer's best ought to outline SQL statements for



growing and updating database in SQLite. If the App creates and makes use of a database, then the default vicinity of database is DATA/data/APP_NAME/databases/FILENAME. Various modules of the app are as follows: **A. User login module:** In this module, a person has to first check in. User can be moved to register the hobby after clicking the register button on the login screen. User has to fill info like Username, Email-id, Mobile number, Password and Confirm Password Etc. Only registered person can play quiz with the aid of using logging in.

B. Administration module: if the person logs in as administrator, they can download new questions with the aid of using choosing a selected region and a topic associated with that region or make any adjustments to database. Admin can show end result of all users, date wise or call smart because the case might also additionally be.

C. Registration for brand spanking new User: If the person desires to play quiz, first person need to check in with the aid of using filling info like User call, Email-id, Password, Confirm Password etc. After a hit Registration, a person can log in. After login, a person can play the quiz.

D. Home view: This module suggests icons for gambling quiz, About, Results, Exit. When the person clicks on the Quiz icon, the alternatives can be displayed, representing exceptional fields. When a person decide a few unique concerns then random questions can be asked. Each Question can be given one minute. User has to reply the query inside that time. At remaining, end result can be displayed.

E. Results view: This module is used to show preceding in addition to present day rankings of users. By viewing the results, a person can degree overall performance in comparison to remaining attempts. The essential goal of this task become to check the expertise of person in numerous fields and additionally on the idea of score, college students can judge, wherein they may be lacking. It presents assist in each discipline protected in quiz application. It presents tutorials to college students in an effort to study at the side of giving the tests.

5. Results

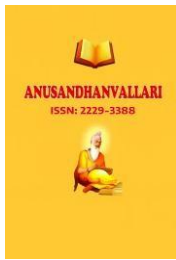
Based on the non-public enjoyment of the growing quiz and available literature, the subsequent are the demanding situations confronted through the Android App developers:

A. Multiple Devices: The maximum not unusual place task is to set the homes of app for special gadgets with special display screen sizes, decision etc. There are many variations of every android tool and even as liberating the app, model particular information want to be checked, this makes the mission very critical. As it wants to be run in special gadgets, consequently it additionally impacts the price and finances implications. For every model of Android, developer has to put in writing code once more due to the fact there are migration trouble to be had emigrated the present code to new platform. Sometimes, conduct is likewise special throughout new platform.

B. Testing the Android application: Currently, the development environment does not have enough hardware to test. There is a want of trying out strategies for the Android Platform. Also, debugging capabilities ought to be made to be had.

C. Limited Capabilities of Different Devices: Sometimes special gadgets have special abilities in phrases of software program guide, like a few browsers has bad guide for HTML5.

D. Emulators/Simulators Problem: Emulators are the gadgets which presents us hardware surroundings of Android Devices, even as Simulators offer us the software program surroundings. Apps are examined at the emulators, which aren't sufficient for trying out. Emulators are very sluggish and take a variety of time to begin



and run.

E. Data Intensive Apps: Since Mobile Devices have very restrained memory, so it's far very hard to shop large quantity of information in it. Offline caching doesn't paintings properly, and synchronizing with every other information supply is a difficult mission.

F. Lack of software / hardware integration: a button on the Android tool works differently on all other tools. So it's far hard to construct an app that is based on a selected hardware to do a thing.

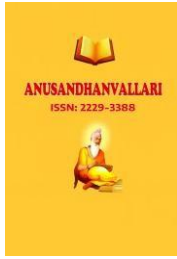
G. Security Issue: Since Android is an open Source running device, so there may be malware Apps which customers can set up through mistake or through every other purpose that could cause lack of information.

6. Conclusion And Future Scope

Smartphones has changed the life of everyone. Along with extraordinary features, an App in Smartphones lets in do almost everything, from playing video games to do business. The development of app described in present paper has given robust records of various traumatic conditions associated with format and development of apps. To revel in has been quite challenging, motivating further to satisfying. Quiz App can be used by university college students successfully on the equal time as getting geared up for examination. More questions may be introduced every so often simply so App can cope up with requirements of users. Several modules like on name for MCQ's for a selected subject, Job Notification, Downloading of Tutorials, Downloading of Reference books etc. can be introduced in future for enhancement of features.

REFERENCES

- [1] Smartphone OS Market Share, Q4 2014, available at <http://www.idc.com/prodserv/smartphone-os-market-share.jsp>
- [2] Number of available applications in the Google Play Store from December 2009 to February 2015, <http://www.statista.com/statistics/266210/number-of-available-applications-in-the-google-play-store/>
- [3] 15 Best Android Apps for Education and Learning Purpose, <http://beebom.com/2014/06/15-best-android-apps-for-education-and-learning-purpose>
- [4] UGC-NET App, available at <https://play.google.com/store/apps/details?id=com.boredbees.ugcnet&hl=en>
- [5] Indian History App, available at <https://play.google.com/store/apps/details?id=com.hrithriddhi.indquiz&hl=e>
- [6] Deshmukh, Jaya & Gandhar, Shivcharan & Jabade, Mangesh & Bhambal, Ankita. (2023). ASSESSMENT THE KNOWLEDGE & PRACTICES REGARDING DENGUE FEVER & ITS PRACTICES AMONG ADULTS RESIDING IN SELECTED RURAL AREAS IN THE PUNE DISTRICT. European Chemical Bulletin. 12. 2870-2876. N. R. Nair, "2-D Airborne Vehicle Tracking Using Kalman Filter," Proceedings of IEEE International Conference on Circuit, Power and Computing Technologies, ICCPCT2016.
- [7] Gandhar, Shivcharan & Deshmukh, Jaya & Pawar, Shruti & Shep, Neha & Chavhan, Nikhil & Kolekar, Rahul. (2024). A study to assess effectiveness of video assisted teaching programme on knowledge



regarding good touch and bad touch among school going children in selected schools of Pune city. International Journal of Research in Paediatric Nursing. 6. 186-190. 10.33545/26641291.2024.v6.i2c.188. Dr.Yogesh Kumar Sharma et.al :International Journal of Research in Advent Technology, Vol.7, No.4S, April 2019 E-ISSN: 2321-9637

[8] Chavan, Mrs & Gandhar, Shivcharan & Mahan, Mamta & Deshmukh, Jaya. (2024). "A STUDY ASSESS THE KNOWLEDGE AND PRACTICE REGARDING EXCLUSIVE BREASTFEEDING AMONG PRIMIPARA MOTHERS AT SELECTED HOSPITAL OF PUNE CITY."