TechKnow – Development of An Android Based Mobile Application

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ABSTRACT

The role of mobile phone is increasing tremendously in the past 2 decades, by making the lifestyle simple and more efficient. The very first mobile phone that was introduced was by Motorola in 1973[1].Android plays a major role in making this process more successful because of its easy availability and open source Operating System. Every organization has their own mobile applications to enhance their business and make their users to get the information more easily and instantaneously. The major aim of this project is to make an application for a college that will display all the basic details needed like displaying notifications of news, events, make a discussion forum for the students well as teachers, display a calendar of the college that will help to find the events happening in the college. The m-learning module will help the students to get trained for their campus placement like practicing with quiz learning different topics etc. The contact us will lead to the social websites with the help of it users can contact the administration using various forms. Other details like the cafeteria menu, details about each department, gallery for every department will be provided here. Even though we do have a college website it is a necessary to have a mobile application so that the students and the staff members can get the details very soon and use in anywhere to gain their knowledge regarding the College.

Keywords : Android, Application, m-learning, Website, Forum

I. INTRODUCTION

In this fast developing digitized world, it is important to bring everything to user's hand in microseconds. The mobile phone plays an important role in making this possible. The operating system is responsible for determining the functions and features available on the devices. According to the IDC Quarterly Mobile Phone Tracker, phone companies shipped a total of 344.3 million smart phones worldwide in the first quarter of 2017 (1Q17). Worldwide Smartphone shipments grew 3.4% in 1Q17 year over year, which was slightly lower than IDC's previous forecast of 3.6% growth. [2].Popular mobile Operating Systems are Android, BlackBerry, iOS, Bada, WindowsnMeeGo, Palm, Symbian, webOS.

Android provides various applications that can satisfy most of our daily needs. An application for college is also playing a very important role in displaying and delivering the news to students, teachers, and also to normal users. It is hard to imagine a life without a mobile phone, because it makes our life so easy starting from wakeup alarm, reminders, calling, chatting, sharing, shopping and so on, Android is making almost everything possible.

This application includes various options to learn and to know about the college and its events also to clear doubts using a discussion forum.

1.1 Android

Android is an open source Linux based system developed by Google [3], and primarily aimed at mobile handsets and other portable devices like smart television, tablets, wears like watches, glasses, and jackets etc. Android provides a java based development platform for applications.

The foundation of Android Platform is Linux Kernel that handles the functionalities such as threading and low-level memory management. The hardware abstraction layer (HAL) provides standard interfaces that expose device hardware capabilities to the higher-level Java API framework. For devices running Android version 5.0 (API level 21) or higher, each app runs in its own process and with its own instance of the Android Runtime (ART). The Application Programming Interface (APIs) form the building blocks you need to create Android apps by simplifying the reuse of core, modular system components and services [4].

The first hand-held mobile phone was demonstrated by John F. Mitchell and Dr. Martin Cooper of Motorola in 1973, using a handset weighing around 4.4 pounds (2 kg).The first Cellular Phone reach the public was in Japan on 3 December 1979 that weighed 7 KGs [5].Starting from there the development of mobile phones and its technology grew massively like the weightless technologies, slim technologies.

The game snake, introduced in 1998 as a standard pre-loaded game on Nokia phones, this became a global sensation. But it was in 2007 that saw the real birth of today's more recognisable mobile apps when the launch of the first iPhone appeared. The Apple App store adds about 20,000 apps every month [6]. There is billions of mobile application in the Google play store. In September 2011, many companies which produced Smartphone powered by MeeGo, Bada, WebOS and Windows also produce Smartphone powered by Android. There is also possibility that some BlackBerry Smartphone will use Android.

1.2 Android Studio

Google announced in 2014 that Android Studio would be the officially supported Integrated Development Environment for Android [7]. The most important feature of Android is that, anybody can develop applications for android devices through the Android Studio which is an open-source.

The prerequisite to work with Android Studio is Java with minimum version 8, the environment variable JAVA_HOME should have path to JDK [8]. Android also provides training tutorial that makes the development easier by providing code samples that can

be reused in the projects. Various online courses are also available [9].

1.3 Mobile Learning (m-learning)

Mobile learning, also known as m-learning, is an educational system with the help of mobile devices, a continuous access to the learning process. It makes learning possible whenever and wherever the user wishes to. Education and training is the process by which the wisdom, knowledge and skills of one generation are passed on to the next.
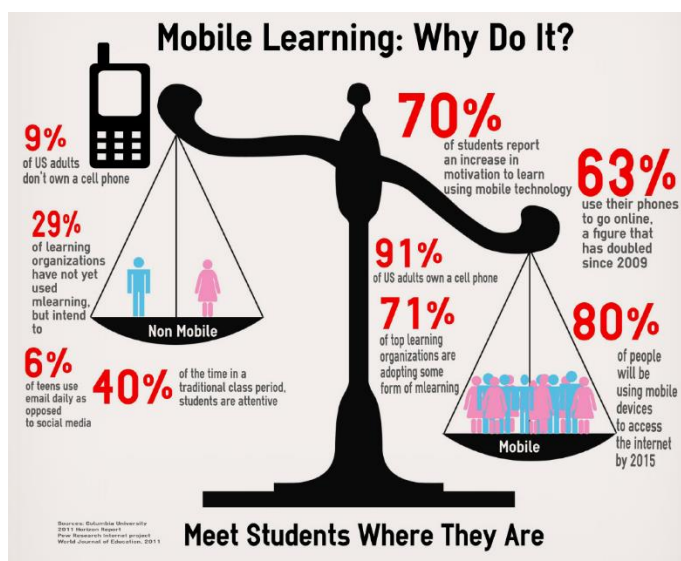

Figure 1. Average comparison of mobile learning

Two forms of education and training: conventional education and distance education. "M-Learning" [10] offers modern ways to support learning process through mobile devices, such as handheld and tablet computers, MP3 players, smart phones and mobile phones.

II. RELATED WORKS

1. Vignir Gudmundsson, Mikael Lindvall, Luca Aceto **"Model-based testing of mobile systems – an empirical Study on QuizUp Android App"**

Testing the application is a complex task due to its data-driven design, complexity and the configuration options it provides. Apps are often tested manually, typically they rely on the manual creation and execution of test cases that mimic realistic usage of the app. It is tedious, and exhausting, especially when a

large number of combinations of usage scenarios for various configurations.

We can also use model-based testing (MBT) to test systems because it addresses the problem of manually creating test cases. While MBT is a promising technology that has been shown to work well for non-mobile systems, it is still unclear if it works well also for mobile apps. This leads to the research question we address in this paper: Can MBT be used, in an effective and efficient way, to test mobile systems using the same approach that has been used to test non-mobile systems? To answer this question, they examined the mobile system QuizUp[12]

QuizUp is a mobile trivia game that allows users to challenge each other on several hundred topics (e.g. arts, science, sports) using almost a quarter million questions at the time of this study. Users participate in a social experience by communicating and competing against friends or strangers in a real-time trivia quiz. y. The application communicates with the QuizUp servers, through web services, to fetch data (e.g. HTTP GET query) from the QuizUp databases, as well as posting new or updated data to the databases (e.g. HTTP POST query).

The complexity of the app is largely due to the game-play scenes of the game. A user can compete against other users in any of QuizUp's topics.
After the user has requested to play a game on a particular topic, the system searches, in real-time for opponent who has requested to play the same topic.

2. Hitesh Keserwani **"App Abuses: A Study of Increasing Risk in User's Adoption of Free Third-Party Mobile Apps in India"**

Technological risks are those that emerge from new technologies and processes. Mobile malware is a risk, though it is relatively low, but with the emergence of free app, the diversity in data, technology and collaboration has also increased the threat of malicious apps (malware) and App vulnerabilities in the embedded processes of mobile phones.

The organization's, professionals, users should be aware of these new risks and develop plans to mitigate them or be fully informed before accepting the consequences of them. App permissions should be

enabled, the user is informed and must explicitly opt to continue installation of an app if it requires access to personal data, such as their address book or location [13].

User prefers to block disclosure of their personal details. Accordingly, their privacy setting for this information category is "Only me", which means their details cannot be seen by other users.

III. EXISTING SYSTEM

The official website of Anna University Trichy (Bharathidasan Institute of Technology) is (www.aubit.edu.in) [11]. It provides lot of information about the college, updates information about the news and events, details about placement etc. Every news and events about the college is updated immediately and it can be viewed by anyone who accesses it. Some disadvantages with the existing system is that the users has to knowledgably open the website in order to get the information need and to get notified for the news and events, due to this some important updates can be delayed or missed to overcome this the mobile application will provide the notification immediately to the users.
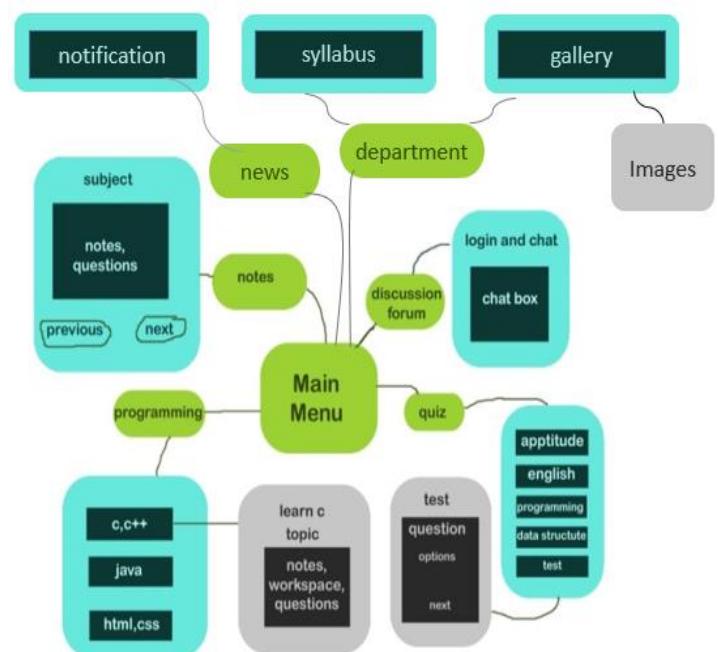
IV. ARCHITECTURE

Figure 2. Architecture of the Application

The architecture describes about the layers of the application for each menu, green indicates main menu, blue are the submenu of main menu and it will move to the next layer indicated by grey colour. Some of the menu will have multiple submenu like the quiz test menu.

V. PROPOSED SYSTEM

Viewing the website in the mobile phone is not as continent as viewing the application. This application provides a wide range of useful information that is split into several functionalities. These include: academics, news, events, facilities, and all the college details. In particular it is specially designed for Anna University – Bharathidasan Institute of technology that covers: Syllabus for every department, m-learning platform to get trained in programming languages, try aptitude quiz.

In the previous system, all the information has to be viewed in a hard file, or in website. Having a pc everywhere is not practically possible. Hence, in order to overcome this problem a smart phone based application can be used.

About us page will display the basic details of the College like the College's history present dean and his contact details. News gives list of events and important updates in the campus and it will be delivered as notification to the users as soon as it is updated. Calendar will display the calendar that will show the important dates.

The Cafeteria icon will take to the page that lists the menu from nearby hotels. Notifications about news, events will be delivered in the notification bar, menu in the cafeteria will be updated daily. A Discussion Forum to express our doubts and views. Syllabus for every department is detailed.

Details of every department is specified individually with the details of respective Head of the Departments and the faculty members with their contact details. Gallery to give some collection of pictures related to campus and its events. Quiz will give certain questions and detailed description about it to prepare for the placements.

Placement details about number of students selected each year with respective company details. Website will link the page to the official website of Anna University Trichy (www.annauniv.edu.in). Locate us will open the google maps to point the location of out College that will help the user to be guided to the right path. Social media links for Facebook, Twitter will be provided and an option to share the application.

This application is specially designed for Anna University Trichy, to provide the students with more knowledge in academic wise and training for placements.

The system is proposed to provide

- To make available for every users
- M-learning
- Career guide lines
- Immediate News notifications
- Department wise details and syllabus
- Photograph collections of college
- Link to social media
- Quiz to prepare for the placement

VI. SYSTEM IMPLEMENTATION

It is an android based application and free of cost. Several IDEs can be used to develop an android application in many languages, most of them are open source and easily available. The IDE used for this application is Android Studio. The application is based on java, it helps to add several classes and to get the expected result easily.
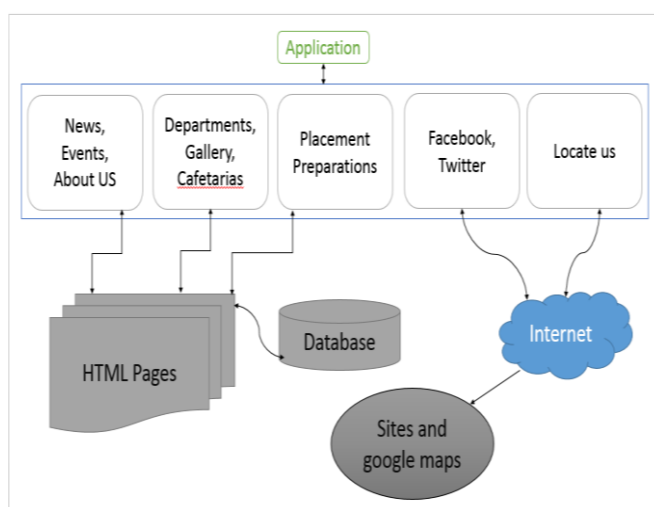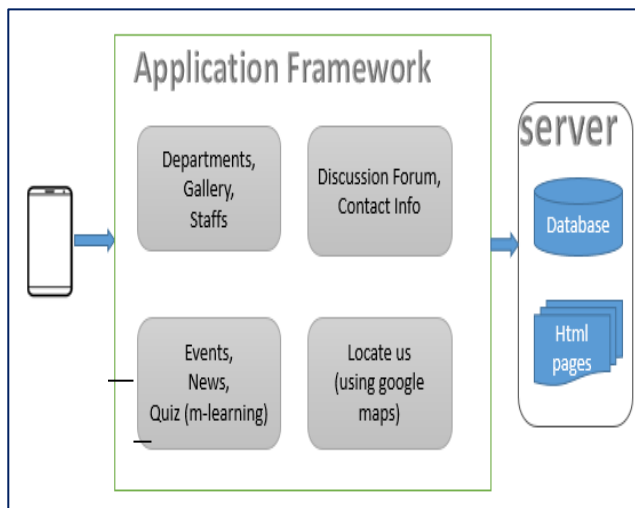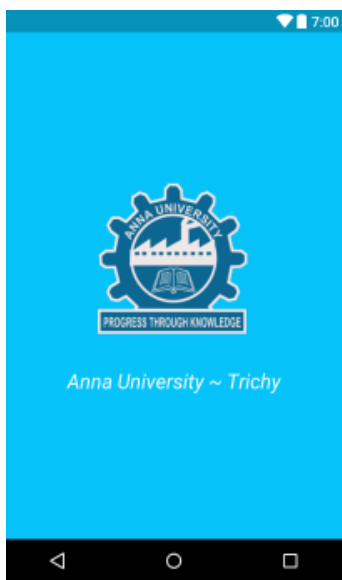
VII. BLOCK DIAGRAM

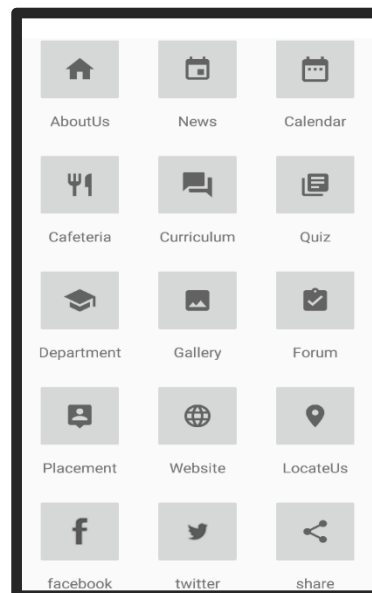**Figure 3.** Work Flow of the Application

Figure 4. Block Diagram of the Application

VIII. RESULT

Fi*gure* **5.** Splash Screen

Will be displayed when the application is opened the image will be opened with a transition effect and will stay for five seconds and navigate to the main menu of the application.

Fi*gure* **6.** MainMenu

Description:

In the fig (1.1) Comparison of Mobile Learning
In the fig (4.1) Architecture of the application
In the fig (4.2) Work flow of the application
In the fig (4.3) Block Diagram of the application
In the fig (5.1) Splash screen of the application
In the fig (5.2) Main menu of the application

IX. CONCLUSION

This application is a very useful application that helps the students to get more information about the college and the department. In future in can be enhanced to have tutorials with the working platform and get frequent notifications about jobs and updated technology information.

X. ACKNOWLEDGEMENTS

I would like to express my special thanks of gratitude to my teacher who helped to do this project AUBIT-MCA, and finalizing this project within the limited period, which helped me in doing a lot of Research and to know about so many new things.

XI. REFERENCES

[1]. A. Gow, Richard K. Smith Mobile and Wireless Communications"http://www.brophy.net/PivotX/?p=john-francis-mitchell-biography#CELLPHONEINVENTOR"

[2]. Smart phones market "https://www.idc.com/promo/smartphone-market-share/os"

[3]. History of Google-s Linux based Mobile OS http://thevarguy.com/open-source-application-software-companies/open-source-and-android-history-googles-linux-based-mobil.

[4]. Android Developer API Guides and tutorial https://developer.android.com/guide/platform/index.html.

[5]. Guy Klemens "The Cell phone: The History and Technology of the Gadgets that changed the world".

[6]. A brief history of mobile apps https://www.ding.com/community/history-of-mobile-apps.

[7]. Murat Yener, Onur Dundar " Expert Android Studio".

[8]. Belén "Android Studio Application Development".

[9]. Training for application development using android studio https://developer.android.com/training/index.html.

[10]. Mehdipour, Hamideh,"Mobile Learning for Education : Benefits and Challenges" International Journal of Computational Engineering Research vol, 03| Issue, 6. June

[11]. The official college website of Anna University, Trichy http://www.aubit.edu.in/index.htm.

[12]. Vignir Gudmundsson, Mikael Lindvall, Luca Aceto "Model-based testing of mobile systems – an empirical Study on QuizUp Android App"

[13]. Hitesh Keserwani "App Abuses: A Study of Increasing Risk in User's Adoption of Free Third-Party Mobile Apps in India"