Techademics -an online educational android application

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Abstract -Technical Education plays a vital role in human resource development of the country by creating skilled manpower, enhancing industrial productivity and improving the quality of life. Technical Education covers courses and programmes in engineering, technology, management, architecture, town planning, pharmacy and applied arts & crafts, hotel management and catering technology. India is witnessing the age of science and technology. In our everyday life and in every sphere of our life the influence of science and technology is becoming so pervasive that man's existence in this world is simply inconceivable in their absence today. The pattern of life evolving in this age is very much different from the one we would find in our society even some fifty years back.

Therefore, to train students in response to the need of the time, our education must be reorganized to give it the necessary practical and technical bias. Such education alone can produce the specialized armies for making and operating the modern machines. Technical Education imparts knowledge of specific trade, craft or profession. Technical Education can meet the expanding demands of expanding society and to meet its multiplying demands. To meet up the current technical gap between India and the world, we are coming up the innovative idea of well synchronized and organized technology learning platform on a very effective android app in an efficient way. In this Project we have concentrated our thought on developing a smart and interactive android app which will provide users free access to many paid online courses and our self-designed technical collections by respective experts of the language.

1.INTRODUCTION

The era of mobile technology opens the windows to the android app. The websites are vanishing, and the mobile phones are emerging. It's the time to change from conventional websites to apps, which has become the part of our daily routine. I'm making an apk called LS Academia for my industrial training. This software will be the multipurpose learning software where the students can come, learn and explore the vastness of education in B.Tech. It provides video lecture content of many subjects like automata, data structure, etc. Students can directly ask questions in the comment section of the video they watched. It also provides free books and notes. The students can download the notes and books and can read it in any devices they want. The app is very light and comes with a engaging user interface. The app also provides download option where the downloaded books and notes can be read.

Android is a mobile operating system based on a modified version of the Linux kernel and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets. Android is developed by a consortium of developers known as the Open Handset Alliance, with the main contributor and commercial marketer being Google. Applications ("apps"), which extend the functionality of devices, are written using the Android software development kit (SDK) and, often, the Java programming language. Java may be combined with C/C++, together with a choice of nondefault runtimes that allow better C++ support. The Go programming language is also supported, although with a limited set of application programming interfaces (API). In May 2017, Google announced support for Android app development in the Kotlin programming language. In proposed system we implement the learning process in mobile environment, it provides portable facilitate to the user. Android is a mobile operating system it helps the developer to simulate learning process to our Android based mobile. The Android SDK provides the tools and APIs for developing applications on the Android platform using the Java programming language. Developers write programs in the Java language using Eclipse IDE. Dalvik virtual machine is an interpreter for eclipse IDE it optimized for use on low power consumption, rich libraries, non-fragmented application programming interfaces, low memory devices like phones.

2. LITERATURE SURVEY

This section discusses about the existing approaches in the field of learning of programming language.

• Comparing the project to Udemy and Pluralsight, it was found that Pluralsight have close to 5000 + online courses and Udemy has 80000+ courses.

• These online courses cover a long range of online courses like Java, C, C++, C#, Java script, Ruby, Python, Kotlin, Scala, Swift, PHP and respective frameworks like React, Angular, Node JS, and other tools like Docker, Jenkins, Maven, Gradle and much more.

• In 2019, finding educational apps of high quality seem like a daunting task particularly when you take into account the fact that there are over 500,000 educational apps.

• In term of free trial Pluralsight offers a 10 days free trial providing access to 3000+ courses constrained to only 200 minutes.

• Udemy occasional offers provides a 200$ course just only for 10$ with a large variety of courses from web development to programming languages.

• Both these platforms provide a monthly and yearly subscription costing around 29$ monthly and 299$ annually.

• Another platform like Solo learn with an averages rating of 4.8 has over 5 million downloads.

• The report from Statista shows that worldwide education spending is projected to reach 37.8 billion US dollars by 2020, up from 3.4 billion US dollars in 2011. Mobile learning is a growing trend. According to the report from Shift Learning, "Mobile learning will be a $70 billion industry by 2020." According to the report, "Mobile learners typically study for 40 minutes longer than students using a desktop or tablet."

• With more than 11 million installs, remind app was one of the most downloaded education category apps in the United States in 2018.

• One of the top languages learning apps, Duolingo has been installed by over 200 million users.

• In Khan Academy, Students who complete 60% of their grade-level math on Khan Academy experience 1.8 times their expected growth on the NWEA MAP Test, a assessment test.

3. INFERANCE FROM LITERATURE

Six reports were reviewed in detail for the literature review, with the majority of these providing some evidence to support the theory that the introduction of e-learning platforms of technical education is highly expensive and rarely available to the users. The following text should be reviewed with consideration given to the fact that these studies were not specifically designed to assess the impact of e-learning is not so familiar to the users of technical field. Therefore, evidence is taken from these reports to be used in different context from that in which it was regenerated. For example, a common theme across all of the reports was the fact that the importance of e-learning has become a must need of technical education, there was limited data related to e-learning available to users. A number of the reports considered that well synchronized and organized data of technical learning is highly essential for the students having keen interest and potential to learn these programming languages to expertise level. Overall the reports demonstrate that while there is some evidence to support the theory that implementing e-learning platform can lead to an overall enhancement in the field of technicality and automation. A number of the reports support the need for further research in this area. Thus, has finally derived the fact that there is a need of free language learning educational platform all over the Indian community in an easily available and effective manner.

4. REAL WORLD APPLICATION

The project Techademics is a very innovative platform which will help arise the keen interest of the students to get readily familiar to the programming languages. This system monitors the users interest in corresponding technical field and will provide the quizzes , notes ,videos and presentations for effective understanding of the topics. Kofi Annan said, "Education is a human right with immense power to transform. On its foundation rest the cornerstones of freedom, democracy, and sustainable human development." As technology is establishing its roots deeper into the education sector, things are changing. And, one such change has been introduced in the form of education-based mobile applications. Education is always at a critical juncture since it is vital for economic prosperity and workforce development. Mobile learning (*mLearning*) has also overcome educational problems. Interactive and personalized learning are the assets that students get from mobile apps. For students, education-based apps provide convenience by helping them to achieve more in less time. It can be said that mLearning apps will prove to be students' best friend in times of need. Some of the live examples are

4.1.Remind

With more than 11 million installs, remind app was one of the most downloaded education category

apps in the United States in 2018. Ranked #7 in the education category, remind is a communication platform that helps every student to succeed and achieve their education goals. Remind app allows students to send real-time messages to a class, a group or an individual person. It also enables students to translate messages into over 85 languages. Students can share photos, handouts, and other files. It also claims that the school communication app, Remind, has been used by over 27 million educators, students, and parents in over 95% of U.S. public-school districts till now.

4.2. Photomath

The report from Sensor Tower's Intelligence platform shows that Photomath was the second most downloaded education app in the United States with approximately 10 million downloads. The Photomath app helps students to learn math. As we all agree with the statement that mathematics is assumed as one of the toughest subjects. A camera calculator app, Photomath, helps students by utilizing the phone's camera to identify mathematical problems. And, it displays the step-by-step solutions on the student's screen. The Photomath app comes with a built-in scientific calculator. In the education category, this 5 app is currently ranked #21.

4.3 Duolingo

One of the top languages learning apps, Duolingo has been installed by over 200 million users. The app comes with the dominant factors like effectual curriculum and alluring gamification. Due to these factors, the Duolingo app has been able to stay dominant on the market. Duolingo app is ranked #3 in the education category. Ranked #3 in the education category, Duolingo enables users to learn over 30 popular languages in the best possible way. The app is completely free to download and Duolingo does not have any hidden fees and in-app purchases are kept optional. By downloading this language learning app, students can monitor their progress.

6 PROBLEM STATEMENT AND SOLUTION APPROACH

6.1 Problem Statement.

• The current e-learning platforms offers a wide variety of courses but a very uneconomical way which most of the normal class students are unlethal to afford it.

Hence our platform which will provide these courses at free of cost, will be a center of technical e-learning for the students as well as professionals. Also, most of the e-learning module is available to web not in application but the usage of app is easy than web.
• Video selections, notes selections, quiz selections are hard task, it should be proper and error free.
• Lectures should be authentic from authorized sources and should be copyright free.

6.2 Solution Approach.

• We will check for every free lecture from all over the world and will provide the best of it the users don't have to pay for any services given by us.
• There are many good sites which are providing free learning sources we will gather them in one place.
• Users can get options on notes and lectures they can use whomever they find appropriate.

6.2.1 Admin Module

This application has a complete admin panel for performing administration. The main administration is done for user management, role allocation, determining what permissions to be given to which role etc. Following are the features that would be included in this module
• Manager users' feeds.
• Manage user roles. User management would be done using asp.net membership profiles.
• Assigning permissions to each role. This would decide what that role can do.
• Managing dynamic styling and themes for the blog. The user would be able to change the look and feel of the blog using this feature.
• Add / remove categories for posts.
• Managing user profiles.
• Password management

6.2.2 User Authentication Module

In this project, you'll be working to implement authentication systems so users can only access areas of a site they are authorized to. Authentication will be provided by

6.2.2.1 Google login

Google login will be provided by using Google Api console and will be established using android studio.

6.2.2.2 E-mail login

E-mail login will be introduced in the project using google firebase console. 6.2.3 Contents of the

android app The app will cover these following content.
- Videos lecture integrated through YouTube Api.
- Dynamic quizzes corresponding to the particular courses.
- Notes of the corresponding courses.
- Available presentations for effective learning.

6.3 Existing System

- Paid Courses are available only
- Notes, Videos, Quizzes and presentations in well synchronized order is not available at a unit place.
- Majority of the courses are not downloadable and hence are inaccessible in later times to users.

6.4 Proposed System

- Courses are available free of cost.
- Well synchronized courses are available including notes, videos, lectures and ppts.
- Courses will be downloadable.

6.5 Target audience

This project is being developed for the student section and professional in Technical field and will be beneficial for the same group. For example, a sample target audience content would be the engineering students and technical diploma students. Students will be highly benefitted from the course development strategy.

6.6 Market potential and expected growth

As this is an open source project the market potential for it makes no sense. There are nonfinancial motivations behind building this project. The main motivation is experimentation and developing a world class piece of software. On the flip side the popularity of this project is expected to be huge. We expect that the number of downloads of this project would surpass 1000 in the very first year. Then with more addition in functionality the popularity of this project is expected to raise more.

7 – HARDWARE AND SOFTWARE REQUIREMENTS

7.1 Hardware Requirements

- A 64-bit environment is required for Android 2.3.x (Gingerbread) and higher versions, including the master branch. You can compile older versions on 32- bit systems.

- At least 250GB of free disk space to check out the code and an extra 150 GB to build it. If you conduct multiple builds, you need additional space.
- Ethernet connection (LAN) or Wi-Fi adapter.
- Processor with min 1.5 GHz, recommended 2 GHz. 7.2 Software Requirements.
- Latest version of JDK
- Ensure that the default JDK install location is: *\KonyVisualizerEnterprise8.x.x\Java\jdk* .
- Android SDK
- Apache Ant (Another Neat Tool) - An open-source tool that automates aspects of the Android build process
- Gradle - An advanced build toolkit that manages dependencies and allows you to define custom build logic.

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