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Android Based E-Learning Application "Class-E"

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Abstract – *Mobile learning as an intersection of Mobile Computing and E-Learning providing resources that can be accessed anywhere has capability in an excellent searching system, rich interaction and full support towards an effective Learning and performance based assessment. In addition, it has a characteristic of not being dependent on time and space. The application of mobile learning can be used through the android operating system that is chosen in consideration to that Android has been dominating the Smartphone market and is an open-source operating system that is easily developed. Class-E is platform we will be presenting which will help people to choose digital learning over traditional learning methods. This application will have two sides of Interface: admin that will using the web-based application on the desktop and students that will use android application. In this application, test and tutorials based on various subjects and topics are given by the admin to the students and the result of the individual student is displayed.*

***Key Words*: E-learning, Rest Api, Native Android, Learning Management System.**

1. INTRODUCTION

An interactive learning, by using Mobile learning concept, is something to make learning more interesting and not monotonous. A new trend in e-learning nowadays is known as Mobile Learning, the use of portable media such as Smartphone either using the Android system, IOS or Windows Phone. The use of Mobile Learning to support the learning process is considered important to add the flexibility in the activity of teaching and learning. Thus, the learning process can be done anywhere and anytime. The aim of this research is to introduce the mobile learning based information by means of Android.

1.1 Problem Statement

The purpose of our system is to design and implement Educational Application which is intended to support dynamic E-Learning Platform. The application is being designed to provide learning environment to User by giving various tests based on various Topics and assessment of Users progress.

1.2 Literature Survey

Mobile learning as an intersection of Mobile computing and E-Learning providing resources that can be accessed in anywhere has capability in an excellent searching system, rich interaction and full support towards an effective learning and performance-based assessment. In addition, it has a characteristic of not being dependent on time and space. The application of mobile learning can be used through the android operating system that is chosen in consideration to that android has been dominating the Smart phone market and is an open-source operating system that is easily developed. To ease the users to access M-earning, jQuery mobile framework is applied as its display, in addition to its attractive features, is able to adjust the screen from mobile equipment [1].

This application will be implemented for two types of user: admin that will use the web-based application on the desktop and lecturers and college students that will use android mobile tool-based application. In this case, the function that will be given by processing the materials that will be uploaded by lecturers and can be downloaded by the college students, task and quizzes given by the lecturers to the college students and the function to show the score from the college students. Objective can be states as to increase use of ubiquitous computing using Android based application and increase dependency on E-Learning to replace traditional learning methods [1].

Design of a Micro lecture Mobile Learning System Based on Smartphone and Web Platforms First analyzes the concept and features of micro lecture, mobile learning, and ubiquitous learning, then presents the combination of micro lecture and mobile learning, to propose a novel way of micro-learning through mobile terminals. Details

are presented of a micro lecture mobile learning system (MMLS) that can support multiplatform, including PC terminals and smartphones. The system combines intelligent push, speech recognition, video annotation, Lucene full-text search, clustering analysis, Android development, and other technologies. The platform allows learners to access micro lecture videos and other high-quality micro lecture resources wherever and whenever they like, in whatever time intervals they have available. Teachers can obtain statistical analysis results of the micro lecture in MMLS to provide teaching/learning feedback and an effective communication platform. MMLS promotes the development of micro lecture and mobile learning. A statistical analysis of the implementation of the system shows that students using MMLS to assist their learning had improved results on their final exams and gave a higher evaluation of the curriculum than those who did not. The advantages and disadvantages of MMLS are also analyzed [2].

2. Overall Architecture

In Our proposed system we present the secure, reliable, dynamic and stable online E-learning based application. Input to the system will be subject name, topic name of the respective subject and difficulty level, all this input data will entered by user through mobile app. Respected data will be stored on back end which is admin side on cloud . On back end admin will manage all databases which contain student data, subject data and Test/Score data. Admin side is dynamic enough to run CRUD operations on database. The credentials of students will be stored in database using MD5 encryption so that admin cannot miss use the personal information. On front end, users will have to download app from google play store and then have to register to use its features. User has freedom to choose whichever subject they want if it contain in database. But the dynamicity is provided in app, if user wants to request a subject currently not present in database. The result of test given by user is provided right after test get submitted. User can review their score, percentile, rank per subject and history of test in report generated by admin side. Web API are used to transfer this data from admin backend to user's device.

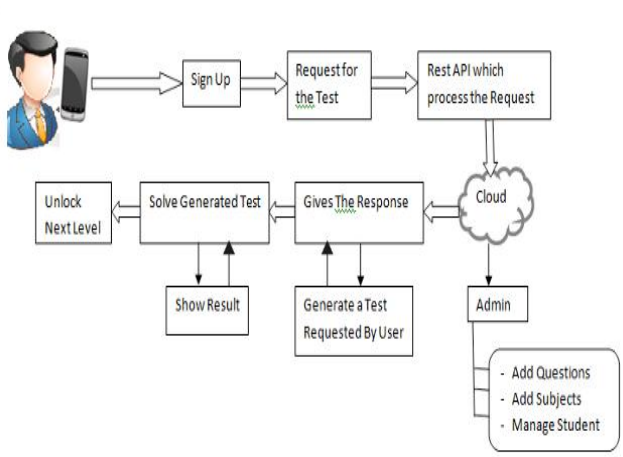

Fig -1: System Architecture

The system aims to generate dynamic tests with respect to user choice. This can be used to make learning ubiquitous and Learning will move more and more outside of the classroom and into the learner's environments, both real and virtual, thus becoming more situated, personal, collaborative and lifelong.

3. IMPLEMENTATION AND RESULTS

Following figures shows some live screenshots:

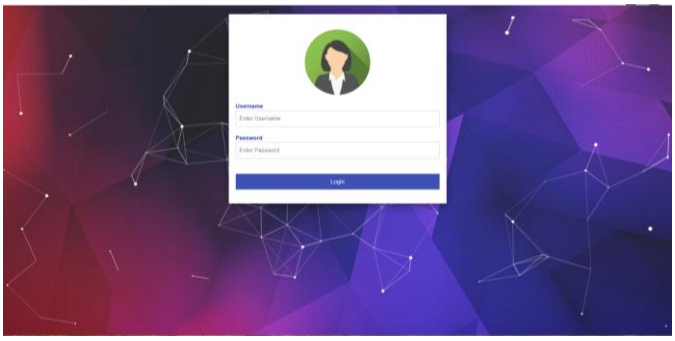

Fig -2: Admin Side Login Page

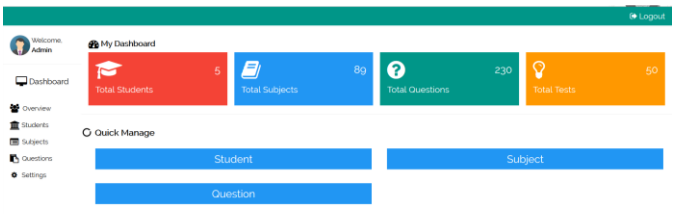

Fig -3: Admin Side Dashboard

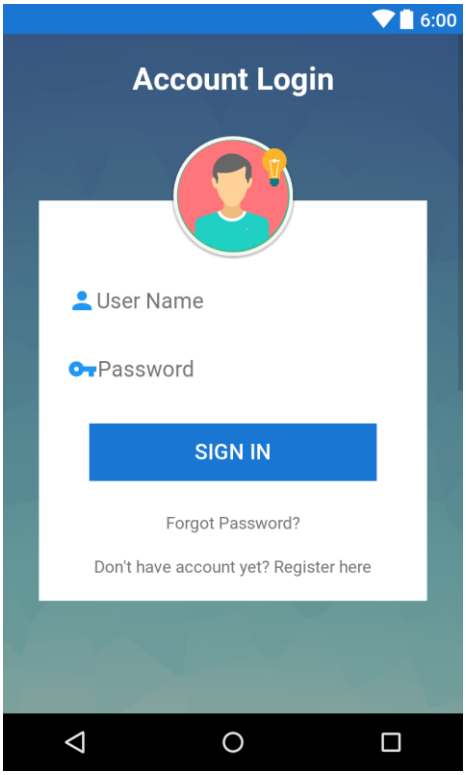

Fig -4: Client side login activity

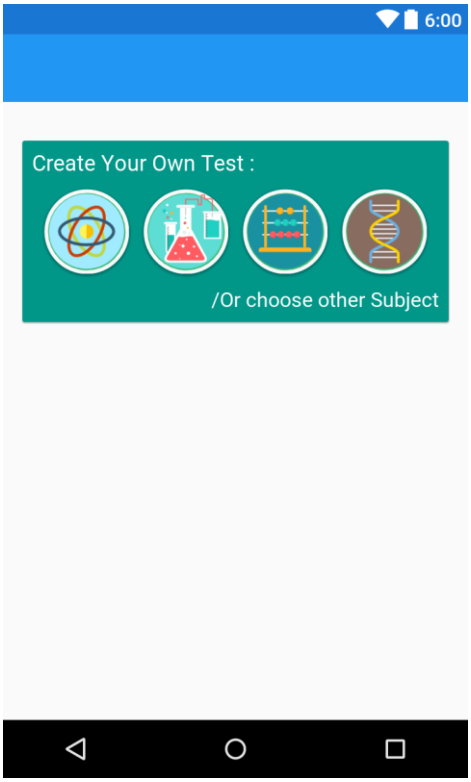

Fig -5: Client Side Dashboard Activity

4. CONCLUSION

System is developed which is accessible at any time as long as internet connection is available. The Admin side is developed using responsive frameworks such as bootstrap thus working on any type of device with internet connection. The client side application is developed using native Android which supports every android device having Android 3.5 Gingerbread or more.

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