A Cross Platform application SCS for Departmental Students Information Management

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Abstract *—A Cross platform. Multiplatform framework gives simplified development process using different emerging technology, Cross platform tool like Phone-gap. A new smart system monitoring application is developed i.e. SCS (Smart College System) application, which provides interface for maintenance of student information and activities. The proposed system deals with execution of academic operation in smart and simplest way and provides information related to complaints, notices (general, department related), and placement activity. It also have facility to maintain student details with report generation and automated email notification and text messages for the users (Student, Faculty, T.P.O., H.O.D and Principal). The system helps us to maximize optimization, minimal manual work along with increase in security.*

Keywords—*Cross platform, Cordova, AngularJs, SCS.*

I. INTRODUCTION

The use of internet has evolved everything to be automated and hence enhanced the use mobile phones in great number. Mobile phone with numerous applications and internet facilities known as Smartphone. Smartphone with operating system combine the feature of personal computer operating system and also the handheld device. Every Smartphone has different operating system and specification, packaging for every OS is different. According to the market view development of an application for every mobile platform is difficult for a developer, time-consuming and also increase the cost of development. Due to these issues, cross-platform application development comes in the market which decreases the cost of mobile phones. In a market, many companies manufacture mobile phones and that mobile phones must have portability to download different application according to the need of a user. If mobile phone have these facilities then it increases sale and profitable to the manufacturer. Cross platform is nothing but developing an application and converting it to native code for different mobile platform. The automated system has great number of advantages and now used in many systems thus manual processes are automated. Nowadays educational infrastructure like colleges, schools has a need that there manual system to function on a computer system. Also, use of database decreases chances of error no one can change data without authorized user.

II. LITERATURE SURVEY

System application uses cross platform development phone gap framework, which is widely used as compared to the other cross platform technologies like appcelerator, xamarin etc. A case study and analysis about different cross platform tools is given in "Comparative Study and Analysis of Multiplatform Mobile Application Development" [1].

III.EXISTING SYSTEM

Previous systems which are used in college management has some drawback. Also, these systems are not user-friendly. In the existing system, all data managed manually. Systems involve lots of paper work. That's why retrieval of data is slow and not efficient. All calculations are done manually so there are chances of error. Here due to errors, generated report may have wrong entries college has to suffer. Here there is no provision for lost and found. Tracking student records are a very tedious task and very time-consuming. Also, in training and placement cell for providing notices to students Google groups are used. Here student must have subscribed to that specific group otherwise student does not get notices. Also, notices in colleges circulated manually which is time-consuming require human efforts.

IV. PROPOSED SYSTEM

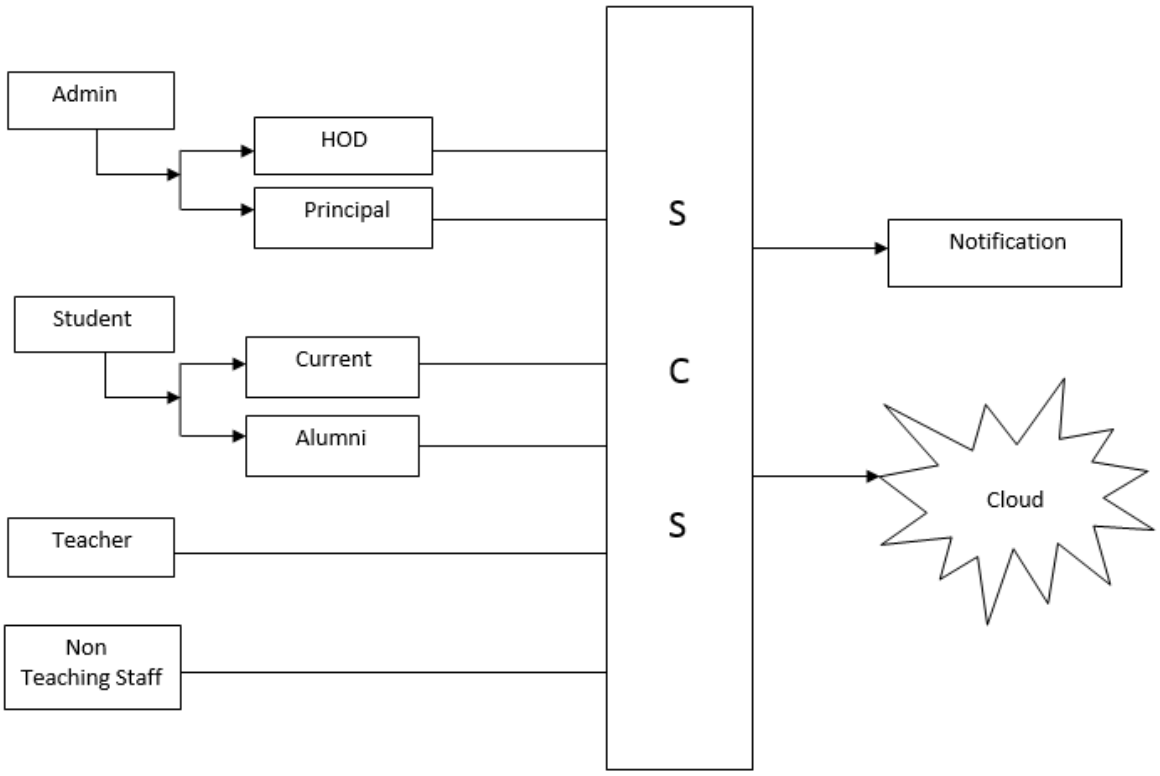

Fig.1 Smart College System

SCS is based on cross platform development framework called phone-gap. Cross platform development mark on creating one application with the help of a base code and which can be used over multiple platforms. For the sake of mobile device students can have their data accessible at any time. SCS have features like user friendly interface, easy. Interaction with system, less paper work with secure network. SCS backend code is written in native language. The play angular framework links the gap between native language and HTML. The application builds with different aspects that the student navigates through. Target of the paper for the familiar look and feel of the system so that student easily can recognize the navigation through the application. SCS propose different modules for interaction between the teachers and students.

V. SYSTEM MODULES

1) ***HOD:*** HOD is the admin of the SCS who can add user like TPO and Teacher. System renders the security with the help of BCrypt algorithm to generate the password for admin. HOD has provision to add notices related to sports, cultural activities etc.

2)***Principal:*** Principal is also having the rights of the admin, who can get all the information about the students and teachers activities. He can add non-teaching staff for the tuition fee related work and notices.

3)***TPO:*** TPO can use the application for student recruitment process by checking his or her criteria through database collection. He will notify students about upcoming companies.

4) Student: As the main user of SCS, student can apply for companies, can also change his or her information in the database accordingly. After completion of graduation student automatically added to alumni section and he or she can add feedback for the current students.

5) Teacher: System allows teacher to add student to access the application by filling his or her data about academics. Teacher can use the add notice and add event fields for the respective extra academic and extracurricular activities

6) Feedback: This module is concern with the alumni of the college, who is having rights to give feedback about the distinct companies, college academics and cultural events.

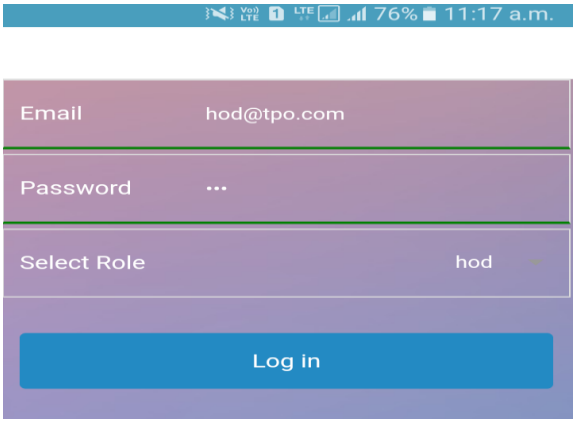

Fig. 2.1 Login Page

Fig.2.2 Home Page

VI. TECHNOLOGY USED

Adobe phone gap framework is an open source distribution of Cordova providing the advantages of technology. It is used to develop a multiplatform mobile application which uses HTML, CSS, and JavaScript. The Hypertext Markup Language (HTML) is the common programming language for displaying web pages. HTML combines the content of a page, such as links, images, scripts, and text. The HTML uses CSS to give a web page a suitable layout than plain text. CSS also adds font, colour, text size to a web page.HTML document can contain JavaScript to give a page some interactivity, e.g. With the use of mouse pointer, we click on button colour of the button changes. The main difference between phone gap and Cordova is the only name. With phone gap, the developer also has the opinion of using phone gap build which acts as a bridge between the different platforms such as android, ios for iPhone. Without it, the developer would have to compile the application for each platform individually with the proprietary tools available. Phone Gap Build is a web service where the developer uploads the source code to, in a zip-file and receives either a QR-code to be scanned by a smartphone or a downloadable package for each operating system.

Ionic is a front end SDK for building cross-platform mobile apps, Built on top of Angular. Ionic is not alternative for Cordova, but instead a UI library to make a better Cordova project. AngularJs a structural framework for dynamic web apps lets you extend HTML's Syntax to express your application component clearly. Here we use play framework written in scala which is an open source web application framework and follows model view controller design pattern. The model view controller is a pattern which used to design application for graphical representation [2]. In this Model is used to handle the business logic, for example, interacting with the database and calculating the result. The view is any output representation of information. Many numbers of views of the same information can be possible. The controller accepts input and sends a command to model to update state.

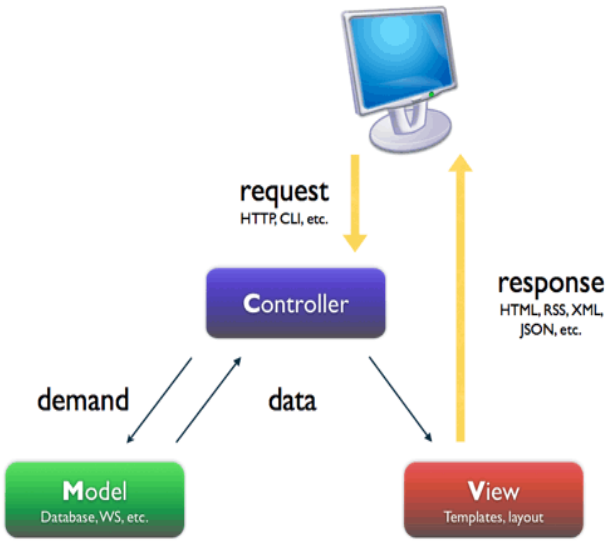

Fig.3 Model View Controller Overview

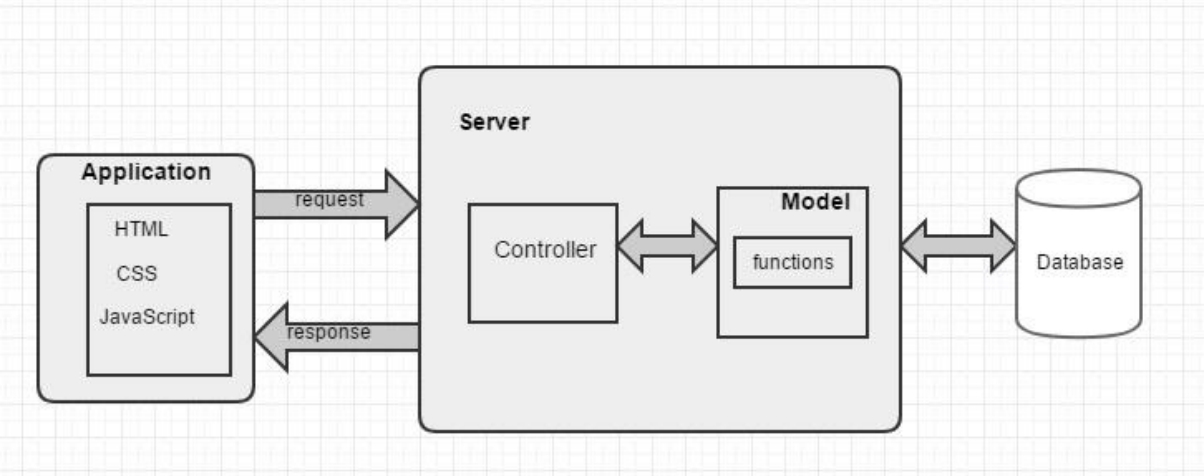

Fig.4 System Design

MySQL (My Structured Query Language) is the world's most popular open source database. With its proven performance, reliability and ease-of-use, MySQL has become the leading database choice for web-based applications. Oracle drives MySQL innovation, delivering new capabilities to power next generation web, cloud, mobile and embedded applications. MySQL is cost free, supports online tutorials, forums, mailing list etc.

VII. Conclusion and Future Scope

We propose SCS which is a cross-platform application developed using phone gap framework. Paper introduces the system which is useful in the data management in colleges. Our proposed system reduces the manual work. The system is safe, easy to deploy and convenient to use. This can also be used with cloud computing, which is our future scope. It can be used for all colleges in the campus.

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