

Digital Gate Pass System Using Hybrid Application

Mr. M. Santhanaraj M.E,

Assistant Professor, Dept. of ECE,

KPR Institute of Engineering and
Technology,

Coimbatore, India.

m.santhanaraj@kpriet.ac.in

P. Umadevi,

UG Student, Dept. of ECE,

KPR Institute of Engineering and
Technology,

Coimbatore, India.

umadevi9615@gmail.com

K. Selvanayaki,

UG Student, Dept. of ECE,

KPR Institute of Engineering and
Technology,

Coimbatore, India.

selvikrsa@gmail.com

K .Shindhmathi,

UG Student, Dept. of ECE,

KPR Institute of Engineering and
Technology,

Coimbatore, India.

itsshindhmathi@gmail.com

ABSTRACT:

Authenticated exit and entry is a mandatory procedure in any organization. Particularly when it comes to an institution where there are number of exits and entries at random intervals, involved monitoring the same is vital.

The proposed project involves a web application by which a student can apply for exit from an institute at a particular time of interval for a particular reason. The same will be approved by the HOD from a different application interface with a login. On approval the information

will be sent to the application and the application interface can be viewed by a security personal at the gate. The user interface is designed using HTML, CSS and Java script and it uses PHP for server communication. The entire system is packaged into an app by means of using Cordova plugin. The user interface consist of a login page on which a user will be directed to a page where the relevant information regarding the user's exit reasons and time intervals will be recorded and made available. The data will be stored in the database and it can be viewed by a login into the app or site from the institutional head's login .On approval by the institution the approved names along with the register numbers will be sent back to an approval page where they will be displayed and can be viewed by the security personal at the gate.

KEY WORDS: HTML, CSS, PHP, Wamp Server, Java script.

INTRODUCTION:

In case of manual system they need a lot of time, manpower etc. Here almost all work is computerized. So the accuracy is maintained. Maintaining backup is very easy. It can do with in a few minutes. Our system has two types of accessing modes, HOD login and

user login. He/she would only view details of the student. He/she can't perform any changes. Our system has three modules; they are HOD interface, mentor interface, user interface. The college has been implementing a gate pass system which involves the students physically approaching the staff member and getting LA signature on the pass. The system of physical approach is time consuming laborious. The proposed project is aimed at digitizing the task of acquiring than gate pass by means of an app based system. The project has three user interfaces with various levels of authentication primarily from the staff mentor and secondary level from the head of the department. Further the system will display the status of the pass, whether it is granted or not. The pass of acceptance can be showed to the watch man on exit. The system has a registration form, which the students fills up and submits online. The form includes all the necessary information with reasons. Thus the project will provide a gate pass system which will ease the task of authenticated entry and exit in a college premises with reduced labor. The system has a authentication procedure in which the gate pass is generated on acceptance from the faculty member as well as the HOD.

The gate pass system student login will include parameters as Date, In time, out time, Register number, city, reason for exit and etc. The faculty login will include data from students and an accept and decline button. On acceptance by the faculty the student details will be submitted for the HOD approach. The HOD approval will displays generated gate pass on the student login. The system user interface is built with HTML, CSS and PHP. The system is fully responsive and includes webview. The packaging is done and .apk generated using Cordova software.

PROJECT MANAGEMENT:

Project management skills are put to good use for this project. Having gone through project management modules in Time Series Analysis, Optimization and with two interns Project Management for Business and IT respectively, they enhanced our knowledge on managing a Project.

DATABASE SELECTION:

There are a variety of databases that we can select from the market. The widely used databases are Microsoft Access, Microsoft SQL, Oracle and MySQL. Looking at Microsoft Access, it does not encourage concurrent usage and

it may be in efficient, as the database needs to be saved into one file. It is also unable to process high speed and large size database as compared to MySQL. In terms of costs, Oracle database requires a licensing fee but MySQL database is a freeware. In addition, MySQL database is easy to install, user friendly, reliable and is able to run on different platforms. Moreover PHP can access MySQL database directly without the need to go through ODBC (Open Database Connectivity). To conclude, PHP script is able to run faster with MySQL database and the processing time will definitely be shorter. The pre-school does not require complex and costly software for its database management system hence MySQL is the ideal database for this project.

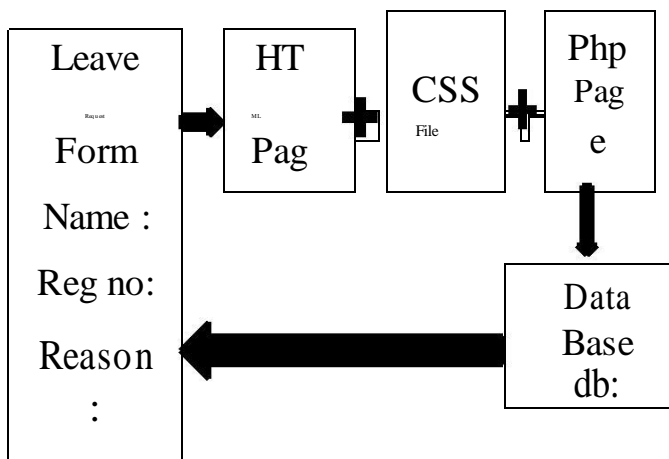
WEB SERVER SELECTION:

After deciding on the scripting language and database, next is to select the web server that can support them. Web server is necessary for the delivery of web content to the web browser. As such, Apache HTTP server which has performance similar with other 'high-performance' server is considered. Thereafter, research and actual testing have been performed to see the outcome. These servers include PHP and MySQL in

their installation packages thus allowing smoother and simpler download process. However, based on the performance and interface, Wamp or LAMP server is the preferred choice. Here we choose Wamp Server.

STUDENT MANAGEMENT SYSTEM:

There are many software development companies that offer student management system for schools in the market. There are records on the past years projects on student management system are done by students. Through the researches, it is observed that there are features where this project can adopt and implement. One of it will be with addition of the student entry and exit details are maintained and recorded. With this feature, it helps higher authority to monitor the student entry and exit .It saves the time as well as increase the efficiency.



SCRIPTING LANGUAGE SELECTION:

There are many scripting languages available in the market. VBScript, Perl, JSP (Java Server Pages), ASP (Active Server Pages) and PHP (Hypertext Pre-processor) are some of those commonly used. Yet for this project, PHP is the language that is utilized for the coding piece because it is a server-side, embeddable HTML language. Being a widely-used open source scripting language, it is free for everyone to use and is especially suited for web development. There are many advantages for using PHP thus no need for the switch to another scripting language. Other than being a freeware, there are many free upgrade packages easily available. The other benefit of choosing PHP is the ease in installation. It can run as a plug in on quite a number of web servers such as the Apache. On the other hand, JSP requires J2EE server to run and because it is a Java coded language, it is therefore more complex to understand and to do coding. Further exploring on the processing speed against ASP, PHP is interpreted at runtime and not compiled into memory whereas ASP is more memory intensive with each ASP language compiler running in its own processes. This results in

slower processing speed for ASP. In addition, ASP runs more reliably only on Microsoft Windows-based web servers than other web servers. In conclusion, PHP is the preferred selection due to the ease of usage and it can be uploaded and run on another platform with minimal change required to be done to the script. Beyond and above, the compiling time and speed for PHP is faster and more efficient.

SYSTEM DESIGN:

Under this student gate pass application, the student first register their details which includes their Name, Register Number, Department, E-mail ID, Mobile Number, Password for this site. After submitting these data, the details will be directed to the student page whereby the student information is to be submitted.

Figure below provides the existing student registration site.



Register Now!

Register Now!

(*fields are required)

Username*

Password*

First Name*

Last Name*

Gender* Male Female

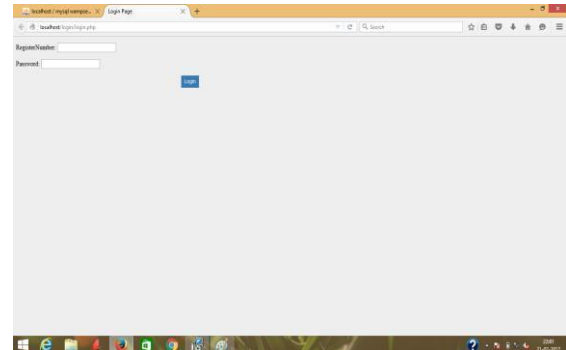
Address*

Email ID* Enter a valid email

Phone*

submit Reset

The Figure below provides the existing student login site.

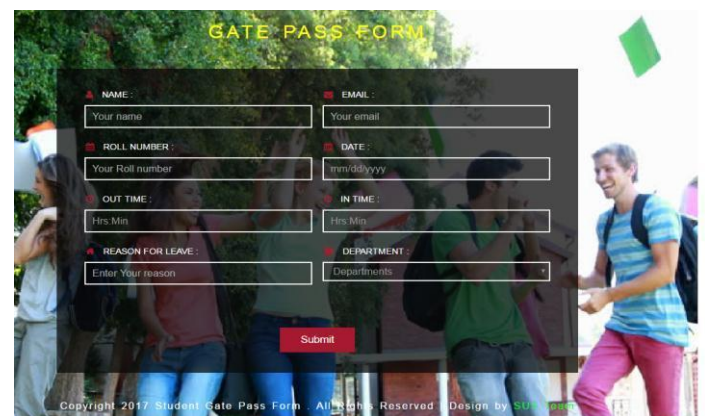


Login Page

Register Number:

Password:

Login



GATE PASS FORM

NAME: Your name

EMAIL: Your email

ROLL NUMBER: Your Roll number

DATE: mm/dd/yyyy

OUT TIME: Hrs:Min

IN TIME: Hrs:Min

REASON FOR LEAVE: Enter Your reason

DEPARTMENT: Departments

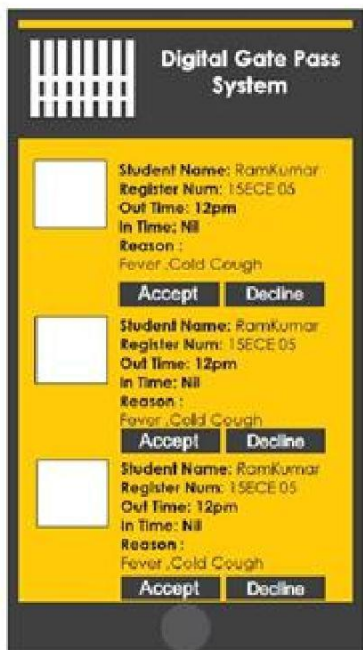
Submit

Copyright 2017 Student Gate Pass Form. All Rights Reserved. Design by SUB...

LOGIN MODULE:

Here both the students and faculty has to be login to enter the site. Students can login using their register number and password. Then he/she has to enter their requisition with the valid reason to leaving the campus. The faculty can login using their Mail ID and password.

Then the faculty can able to see the student request and made accept or decline based on their reason.



DATABASE DESIGN AND DEVELOPMENT:

DATABASE DESIGN:

Database is critical for all businesses. A good database does not allow any form of anomalies and stores only relevant information in an ordered manner. If a database has anomalies, it is affecting the efficiency and data integrity. For example, delete anomaly arise upon the deletion of a row which also forces other useful data to be lost. As such, the tables need to be normalized. This fulfills the last objective of ensuring data are accurate and retrieved correctly. The system employs MySQL and PHP based database for handling the data submissions of various individual exiting and entering in an institutional premises around the day. For the database of this project, the tables are normalized to BCNF as shown below.

Student (Name, Register number, Password)

Faculty (Name, E-Mail ID, Password)

Register (Name, Register number, First name, Last name, Gender, Address, E-mail ID, Password, Phone Number)

Login (student-register number, password) Where Login - student register number must exist in student register database.

Login (Name, Department, E-mail ID, Date, Reason for Leave, In time, Out time)

DATABASE DEVELOPMENT:

After identifying the tables and columns of the database, the next step is to create them. Basically there are two ways to do so. The first option is to create them using commands. Below are some of the 'create' and 'insert' statements.

create table if not exists student(sid char(50) not null primary key, sname char(50), spwd char(50));

insert into student values('student', 'student', password('student'));

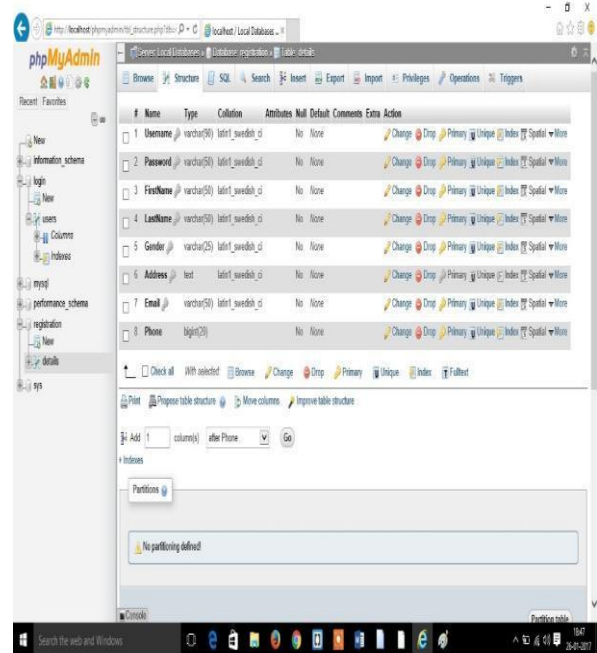
create table if not exists faculty(fid char(50) not null primary key, fname char(50), fpwd char(50));

insert into faculty values('faculty', 'faculty', password('faculty'));

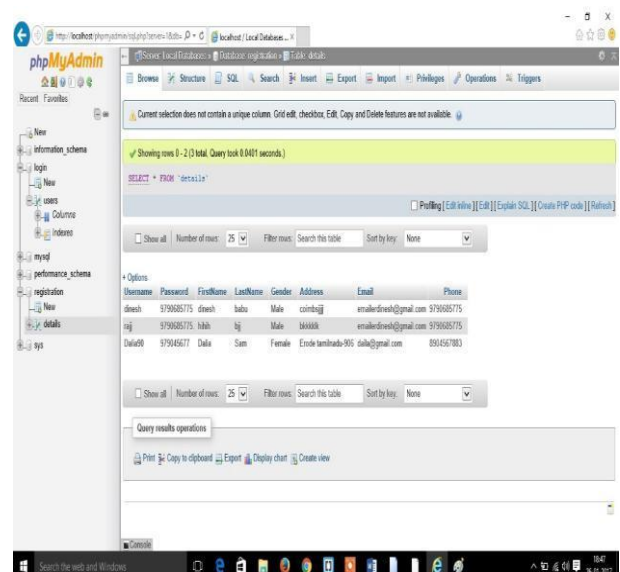
CREATE TABLE IF NOT EXISTS curricula (grp varchar(50) NOT NULL, theme var-char(50) NOT NULL, PRIMARY KEY (grp)) ENGINE=InnoDB DEFAULT CHARSET=latin1;

The second option is to use phpMyAdmin. This is a Graphical User Interface (GUI), used for building and maintaining the database which is included in the web server, wamp package. This is a simpler way to create the tables if one does not know the usage of commands. The first step is to create

the database as shown in Figure below.



The default storage engine in this MySQL server is InnoDB which has commit, rollback, and crash-recovery capabilities to protect user data. Following that is to create the tables in the database.



CONVERTING WEB TEMPLATE INTO APP USING CORDOVA:

Apache Cordova (formerly Phone Gap) is a popular mobile application development framework originally created by Nitobi . Adobe Systems purchased Nitobi in 2011, rebranded it as Phone Gap, and later released an open source version of the software called Apache Cordova. . Cordova is a platform which allows HTML sites and HTML based applications to be converted into .apk files which can be installed in an android phone. It is designed by considering fully responsive design considerations using Bootstrap, Angular JS and JQuery libraries. Apache Cordova enables software programmers to build applications for mobile devices using CSS3, HTML5, and JavaScript instead of relying on platform-specific APIs like those in Android, iOS, or Windows Phone. It enables wrapping up of CSS, HTML, and JavaScript code depending upon the platform of the device. It extends the features of HTML and JavaScript to work with the device. The resulting applications are hybrid, meaning that they are neither truly native mobile application (because all layout rendering is done via Web views instead of the platform's native UI framework) nor purely Web-based (because they are not

just Web apps, but are packaged as apps for distribution and have access to native device APIs). Mixing native and hybrid code snippets has been possible since version 1.9.

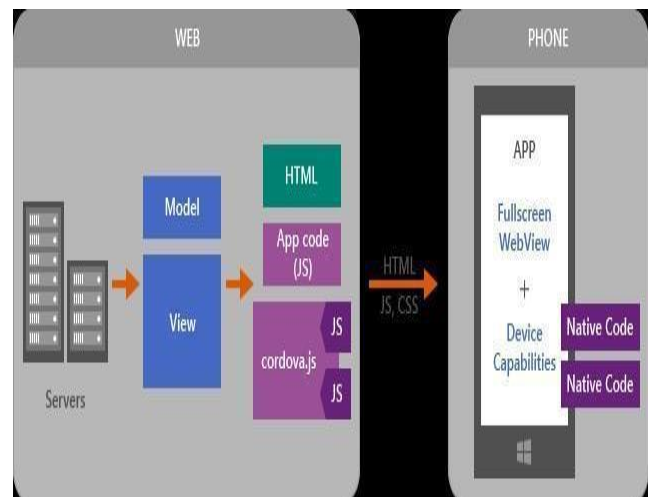


Fig. Conversion from Web Template to Web App

CONCLUSION:

We can reduce the time for getting the gate pass. This system makes easier to identify the student who went out with a valid reason. The manual gate pass system takes more time and the person has to be present physically. This is replaced by the Digital Gate Pass System using Hybrid Application. In this the Gate Pass is generated only by using the details of the

student and the student need not to be physically present at that time.

ACKNOWLEDGMENTS:

In particular, we acknowledge the efforts of my project guide Mr. M. Santharaj, the staff at the KPR Institute of Engineering and Technology who have committed their time and enthusiasm to the project.

REFERENCES:

1. Gunjal Sunil N. , Joshi Ajinkya V. , Gosav Swapnil C. ,Kshirsagar Vyanktesh B, "Dynamic Bus Timetable Using GPS" *International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 3 Issue 3, March 2014.*
2. G. Jemilda, R. Bala Krishnan, B. Johnson, G. Linga Sangeeth, "An Android Application for Tracking College Bus Using Google Map", *International Journal of Computer Science and Mobile Computing, Vol.4 Issue.3, March- 2015, pg. 500-507.*
3. Chakradhara Rao CH, Pushpalatha P, and Aditya Sundar N, "GPS Based Vehicle Navigation System using Google Maps", *International Journal of Computer Science and Information Technologies, Vol.4, Issue.6, pp.1346-1352, 2013.*
4. Dr.(Mrs) SaylGhargl, Moral Chhaa, Gaurav Chheda, Jitesh, and Niket, "Real Time Bus Monitoring System using GPS", *VES Institute of Technology, Mumbai University, India, Vol.5, Issue.7, pp.1786-1792, 2013.*
5. Karan Punjabi, PoojaBolaj, PratibhaMantur, SnehaWali, "Bus Locator via SMS Using Android Application", *International Journal of Computer Science and Information Technologies, Vol. 5 (2), pp.1603-1606, 2014.*
6. Ramesh Chandra Gadri, Ankita Chavan, ReemaSonawane, Sujata Kamble, "Land Vehicle Tracking Application on Android Platform", *International Journal of Engineering Research and Applications (IJERA) ISSN: 2248-9622 Vol. 2, Issue3.*