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Contents of Mini Project Report

Abstract

We are living in technological era, where world has growing in faster way. To live faster world in faster way the big organizations need to work faster. Such big organizations like schools, colleges, and big corporates need manage the data of their employs, workers and students. Also the data of their entries i.e. when they come inside the campus and when leave the campus.

Such data is being collected in traditional pen paper based form, but this need to be changed with something new, something revolutionary. This will be helpful for management and user purpose also. Traditional pen paper based method has some drawbacks such as, it is time consuming, data is not centralized, privacy not maintained, the lack of categorization, and the main is that the person need to close his entry from the gate where from he got entered before.

This all drawbacks are overcome by the project “Cloud Based Synchronized Entry Table”.

Introduction

Overview:-

This report discusses the result of the work done in development of "Cloud Based Synchronized Entry Table" on the platform of HTML, PHP and MySQL. It is a part of Information Technology Department, VPKBIET, Baramati and aims at the development of an application framework for providing a common platform for facilitating the use of methodological approach to use of database system with web interface and integration of various tools developed during the execution of the project.

'Cloud Based Synchronized Entry Table' is same as name suggests. The project is concerned with the real life problem in 'VPKBIET, Baramati' that the campus has multiple gate system and if any girl wants to leave the campus for some purpose then while returning or to enter into campus she need to close her gate entry from the gate where she has done entry while going out. It is too much time consuming and takes more efforts.

To overcome these efforts the 'Cloud Based Synchronized Entry Table' can be used. So girls can do out entry on any gate while leaving campus and can close this entry from any gate while returning into the campus.

In this project let's start with the introduction of basic terms involved in project:

1. What is entry table?
   It's a database or record of the person kept at the entry or exit zones like gate, door etc. specially it keeps records of each person separately according to their time of arrival and exit.

2. What is synchronization?
   In this case synchronization is concerned with the data collected on each gate need to be gathered or kept together so that it is easy to process it together and easy to modify it from anywhere. Synchronization helps in accessing all the data from anywhere, so one can close his entry from one gate on any other gate at the time while existing the campus.

3. How synchronization is acquired?
   Here in this project the term synchronization is a basic and important to make project to work properly. Hence synchronization is acquired by the mean of centralized database system. Such centralized database system is used with the help of cloud database. This project works the best when it used with help of any CMS tool. (Suggested 000webhost.com).

Scope and Limitations

Scope:-

The scope of this mini project can be further increased but also at this state it is applicable as:

1. Entry system in big corporates.
2. Entry system for hostels and hotels.
3. Catalog system in functional halls.
4. Girls hostel girls security in-out database.
5. Lab entry register.
6. Secure lab or secure zone entry system.
7. Privacy vault entry system.
8. Entry catalog for visitors.
9. To keep track of daily arrival of peoples.

Limitations:-

Following are some limitations of the product:

1. In order to gain ability to synchronize the project is need to work online.
2. Hence network connection is required.
3. As we are taking just unique ID from user hence the user database is need to be taken already.
4. Single gate can take single entry at a time.

Requirement Analysis

SRS:-

As the ‘Cloud Based Synchronized Entry Table’ project is for user convenience, it should need to take record whenever any person (here student) leaves the campus through any gate. And also when that person comes back his entry should be closed.

While this all process happens there is possibility that other persons also does their entries so it should not have to be mixed with the previous entries, and hence well categorization is to be needed.

Also it need to be considered that when a person is doing his entry on any gate the system should take the least information from person so that all the process will become faster. This can be done with the help of database i.e. the all data of student admitted to the college need to be stored in the project on the basis of which the entries can be done. In this way person can add his entry just by entering his unique ID (and in case of biometric identity extension it can be done just by scanning finger prints). Also for all this to be work properly a good and easy computer machine should need to be installed.

Functional Requirements:-

Functional requirements of this project are as follows

- Project need to be responsive to the user
- All the previous data is to be accessible
- User need to provide less info each time while entering
- Categorization need to be manipulated
- New user adding facility should be there
- Any gate entry can be able to close from any table
- Each time with a new entry database should gate updated

Use Case Model:-

Consider a student is leaving the campus through gate 1 for any purpose and after some time he returned to the campus through gate 2. In this case he has done an entry on gate 1 that he is going out when he comes back after his work he got himself near to gate 2 and want to come back inside the campus in this case he does not have any need to go back to gate 1 and close his entry there but rather than this he can close his entry of going out on gate 2 also. And procedure for that is also as same as he done on gate 1 i.e. he just need to enter his unique ID only. The database system will search for this ID and retrieve all the user information and insert an entry inside the entry table. As there are some constraint used the only registered students can do entry in such way and if you are not the registered student then you should have to done entry under the category namely as GUEST. Also there is one more category provided which is STAFF which keeps record of staff entry and exit.

Feasibility Study

'Cloud Based Synchronized Entry Table' is focused on gate entry system, where one can keep record of persons visiting or entering. It provides security to the place by means of tracking the peoples. Also it keeps track of their arrival and exit time. This helps to find which person stayed for how much time. And it is complete legal to keep track in such manner.

Economical:-

In the economical point of view this projects not only helps to overcome the cost on the traditional pen-paper based system but also helps in keeping record for long time. And also initial setup cost is also too low as this whole project is built using MySQL database and PHP and hence can be easily used in any simple machine and browser.

Technical:-

In technical feasibility the project need to provide just simple things like a machine with any OS and a PHP supported browser. The functionality of project can be further increased with the help of Biometric sensors like 'fingerprint, etc.' or also simply by a barcode reader. This will be helpful in providing security in restricted zones.

Behavioral:-

The project is built in such a way that, its User Interface is kept so light and simple so that it will be functional in any situation and also any one can use it in fast way and simply. No complications are there in UI and also adding and closing entry is done by project automatically by itself and user just needs to insert his unique ID number. (In this case college's general register number is used.)

System Requirements

Software Requirements:-

The software required for project to be developed are

- A good editor for web page designing like Dreamweaver or Notepad++.
- MySQL database support
- Apache
- PHP support

Hardwar Requirements:-

Hardware requirements of this project are

- Any machine which can support web browser and MySQL data base
- RAM at least 1GB
- Processor at least 2GHz
- In case of Bio metric extension additional hardware as finger-print scanner or bar code reader.
- Any operating system.

Design (ER Diagram)

ER Diagram:-

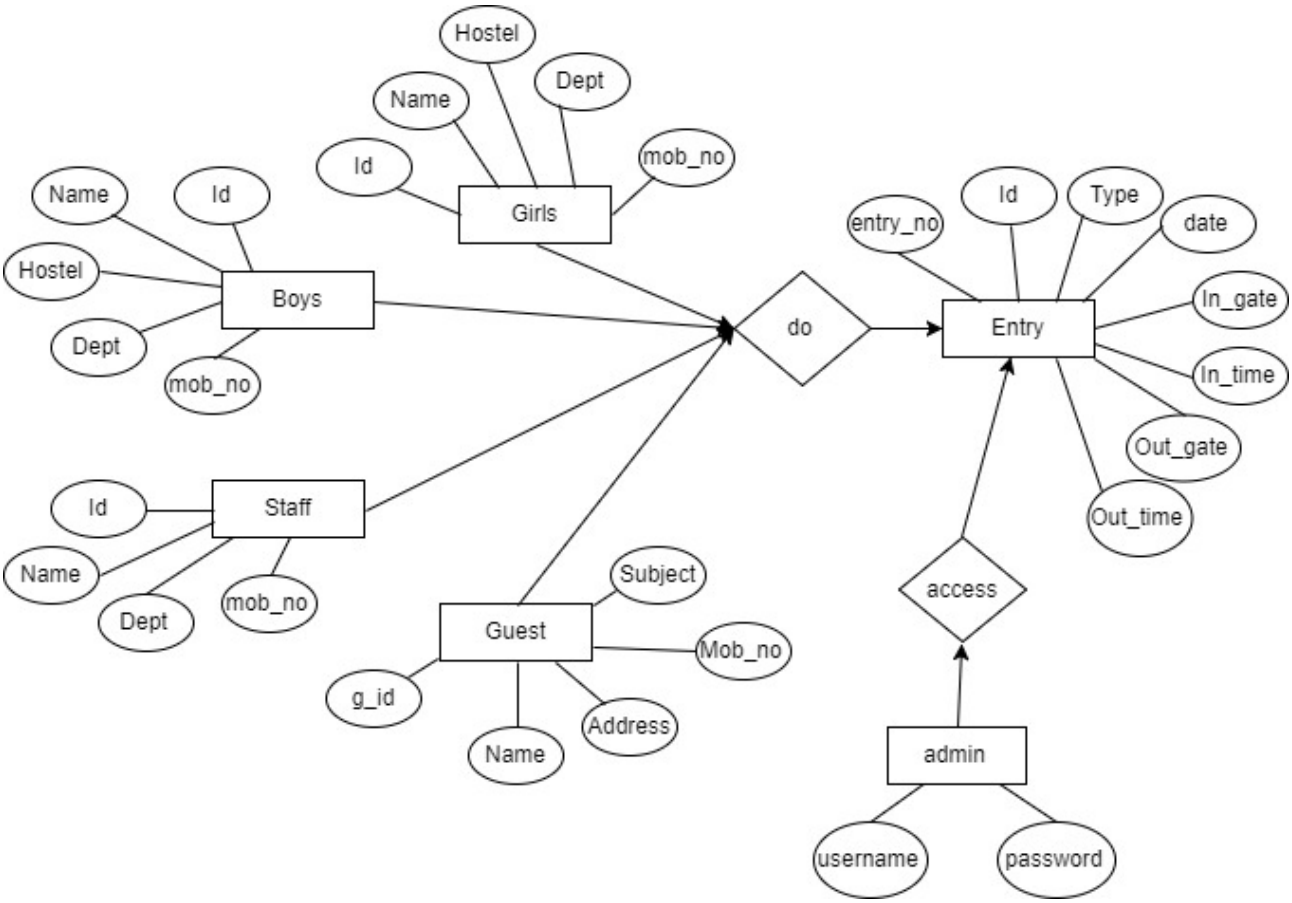

Fig. ER Diagram Cloud Based Synchronized Entry Table.

Schema Diagram:-

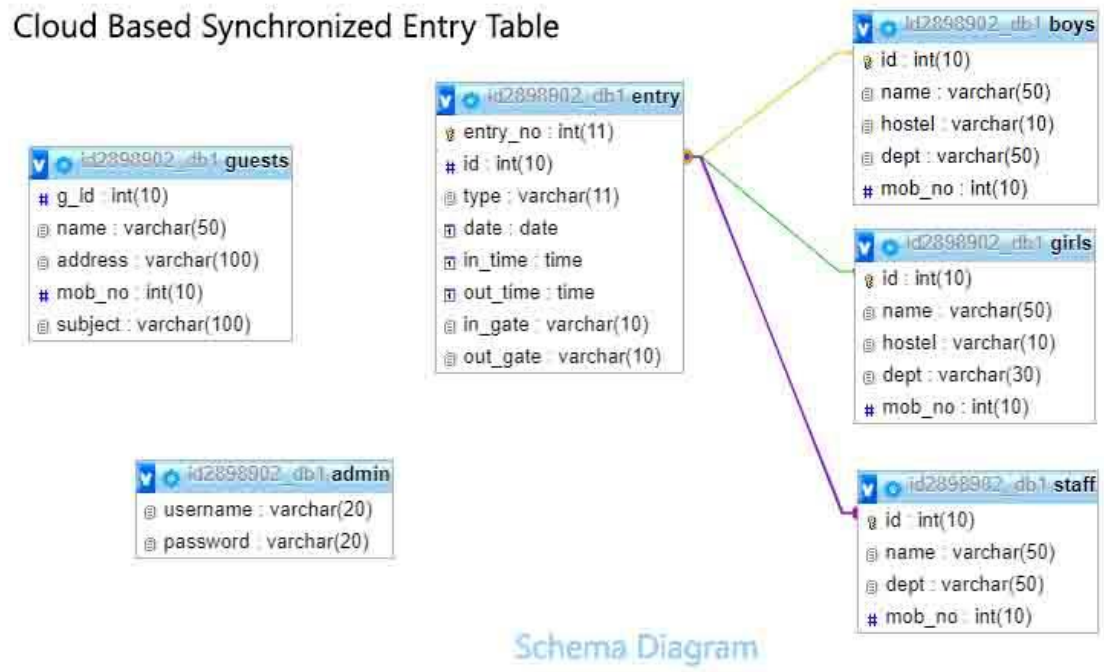

Fig. Schema Diagram Cloud Based Synchronized Entry Table.

Coding (DDL, DML, Connectivity):

Connectivity.php:-

```
<?php
define('DB_HOST', 'localhost');
define('DB_NAME', 'id2898902_db1');
define('DB_USER','root');
define('DB_PASSWORD','');

$con=mysqli_connect(DB_HOST,DB_USER,DB_PASSWORD) or
die("Failed to connect to MySQL: " . mysqli_error($con));
$db=mysqli_select_db($con,DB_NAME) or die("Failed to connect to
MySQL: " . mysqli_error($con));
?>
```

DML/DDL queries:-

```
$id = $_POST['student_entry'];
        $a=mysqli_query($con,"select * from girls where id='$id';");
        $a=mysqli_num_rows($a);
        $b=mysqli_query($con,"select * from boys where id='$id';");
        $b=mysqli_num_rows($b);
        if($a>$b)
        $type="G";
        else
        $type= 'B';

        $in_gate=$_SESSION['username'];
        $out_gate=$_SESSION['username'];

        $squery=mysqli_query($con,"select * from entry where
id='$id';");

 $isout=mysqli_query($con,"select out_time from entry where id='$id'
order by in_time DESC limit 1;");
        $isout1=mysqli_fetch_row($isout);
        $isout2=mysqli_query($con,"select * from entry where id='$id'
order by in_time DESC limit 1;");
        $isout3=mysqli_fetch_row($isout2);
        if(!$isout3[0])
```

```
{
        $isout1=999;
}
 if($isout1[0] || $isout1==999)
    {
                $in_time=date('Y-m-d H:i:s');
                $in=mysqli_query($con,"insert into
entry(id,type,in_time,in_gate)
values('$id','$type','$in_time','$in_gate');")or die(mysqli_error($con));
                if($in)
                echo "<script type='text/javascript'>alert('Entry
added!')</script>";
               //  echo "hello  ";echo $id;
          //echo "  entry added";
            }

else {
        $out_time=date('Y-m-d H:i:s');
        $entryn=mysqli_query($con,"select * from entry where
id='$id' order by in_time DESC limit 1;");
        $row=mysqli_fetch_row($entryn);

        $out=mysqli_query($con,"update entry set
out_time='$out_time',out_gate='$out_gate' where entryn='$row[0]';");
```

```
            if($out)
             echo "<script type='text/javascript'>alert('Entry
closed!')</script>";
        //      echo "hello" . " " . $row[1];
                //echo "  entry closed";
        }
```

Software Engineering Model: - Waterfall Model.

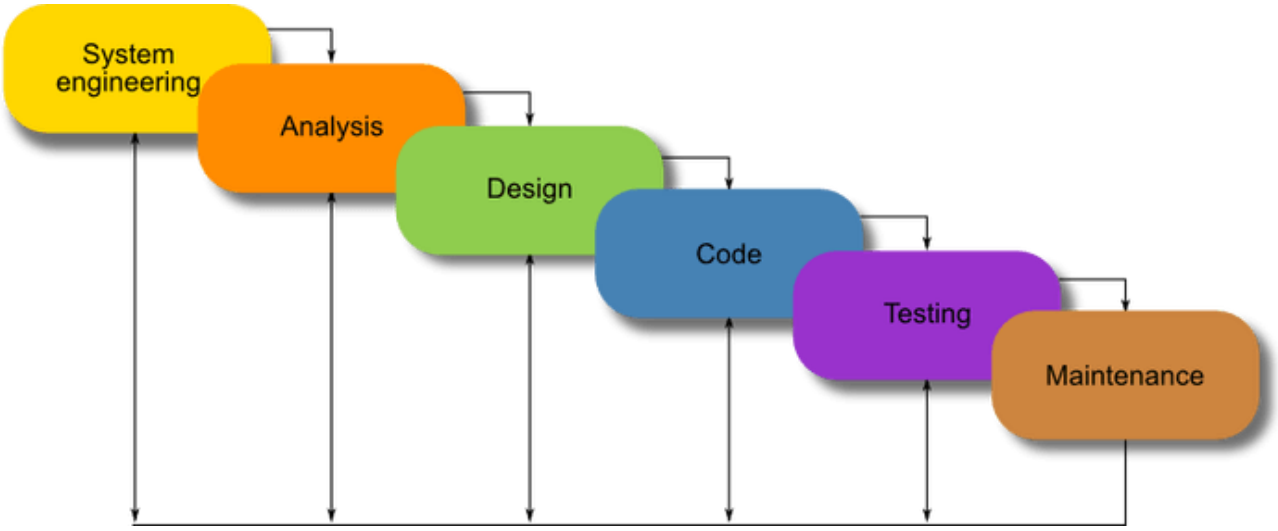

Fig. Water fall model.

First introduced by Dr. Winston W. Royce in a paper published in 1970, the waterfall model is a software development process. The waterfall model emphasizes that a logical progression of steps be taken throughout the software development life cycle (SDLC), much like the cascading steps down an incremental waterfall. While the popularity of the waterfall model has waned over recent years in favor of more agile methodologies, the logical nature of the sequential process used in the waterfall method cannot be denied, and it remains a common design process in the industry.

Throughout this article we'll examine what specific stages make up the core of the waterfall model, when and where it is best implemented, and scenarios where it might be avoided in favor of other design philosophies.

The Six Stages of Falling Water:-

Actually implementing a waterfall model within a new software project is a rather straightforward process, thanks in large part due to the step-by-step nature of the method itself. There are minor differences in the numbers and descriptions of the steps involved in a waterfall method, depending on the developer you ask (and even the year during which you ask him or her). Regardless, the concepts are all the same and encompass the broad scope of what it takes to start with an idea and develop a full-scale, live application.

- **Requirements**: During this initial phase, the potential requirements of the application are methodically analyzed and written down in a specification document that serves as the basis for all future development. The result is typically a requirements document that defines *what* the application should do, but not *how* it should do it.

- **Analysis**: During this second stage, the system is analyzed in order to properly generate the models and business logic that will be used in the application.

- **Design**: This stage largely covers technical design requirements, such as programming language, data layers, services, etc. A design specification will typically be created that outlines how exactly the business logic covered in analysis will be technically implemented.

- **Coding**: The actual source code is finally written in this fourth stage, implementing all models, business logic, and service integrations that were specified in the prior stages.

- **Testing**: During this stage, QA, beta testers, and all other testers systematically discover and report issues within the application that need to be resolved. It is not uncommon for this phase to cause a "necessary repeat" of the previous coding phase, in order for revealed bugs to be properly squashed.

- **Operations**: Finally, the application is ready for deployment to a live environment. The operations stage entails not just the deployment of the application, but also subsequent support and maintenance that may be required to keep it functional and up-to-date.

HCI Concepts

There are different concepts related to user interface design:

- **User interface design:** User interface design (UI) or user interface engineering is the design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximizing the user experience. The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals (user-centered design).

- **Interaction design**: In design, human–computer interaction, and software development, interaction design, often abbreviated ID, is defined as "the practice of designing interactive digital products, environments, systems, and services." Like many other design fields interaction design also has an interest in form but its main focus is on behavior. What clearly marks interaction design as a design field as opposed to a science or engineering field is that it is synthesis and imagining things as they might be, more so than focusing on how things are.

- **User experience design**: User Experience Design (UXD or UED or XD) is the process of enhancing user satisfaction by improving the usability, accessibility, and pleasure provided in the interaction between the user and the product. User experience design encompasses traditional human–computer interaction (HCI) design, and extends it by addressing all aspects of a product or service as perceived by users.

- **User-centered design**: User-centered design (UCD) is a framework of processes (not restricted to interfaces or technologies) in which the needs, wants, and limitations of end users of a product, service or process are given extensive attention at each stage of the design process. User-centered design can be characterized as a multi-stage

problem solving process that not only requires designers to analyze and foresee how users are likely to use a product, but also to test the validity of their assumptions with regard to user behavior in real world tests with actual users at each stage of the process from requirements, concepts, pre-production models, mid production and post-production creating a circle of proof back to and confirming or modifying the original requirements. Such testing is necessary as it is often very difficult for the designers of a product to understand intuitively what a first-time user of their design experiences, and what each user's learning curve may look like.

System Implementations

- CMS: - 000webhost.com this CMS tool is used for the project to work well and complete. But also on local host it can work properly. To gain the synchronization the CMS is needed otherwise it is fully functional on local host.

- Deployment Methodology: - The provided link on the CMS tool of project can be used for direct functionality. But also one can use the local host offline setup, just open the project folder and open home.html file in browser. The project will start but the machine need to be provided by a local host server. In case any additional extension like biometric or barcode the additional hardware setup need to be installed.

- **Project link: -** https://www.entrycatlog.000webhostapp.com

Screenshots

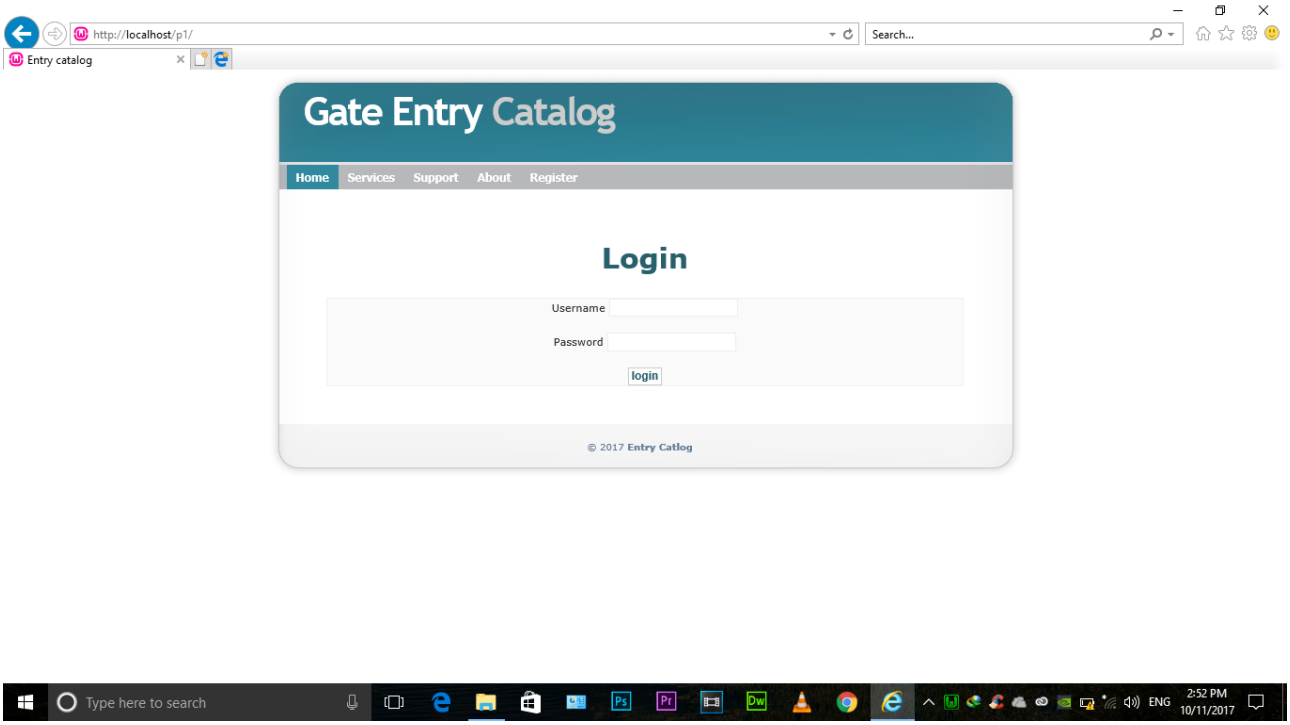

Image: login screen.

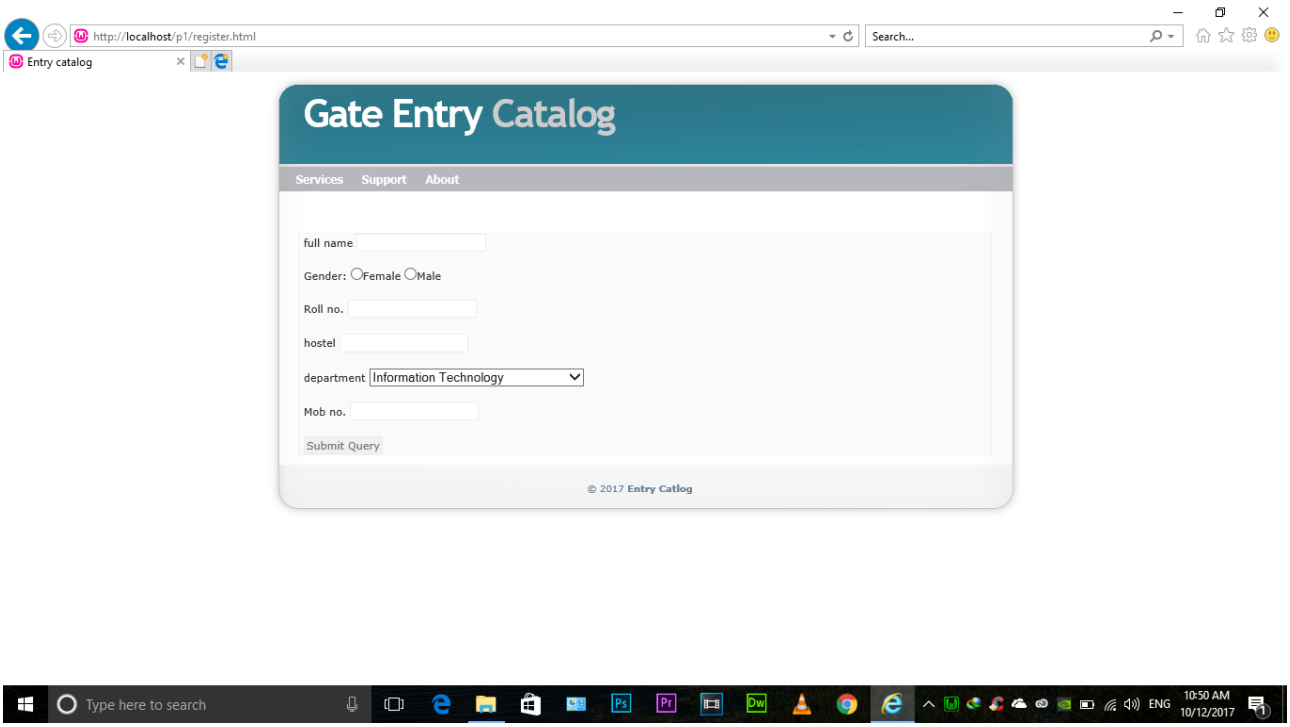

Image: Register screen.

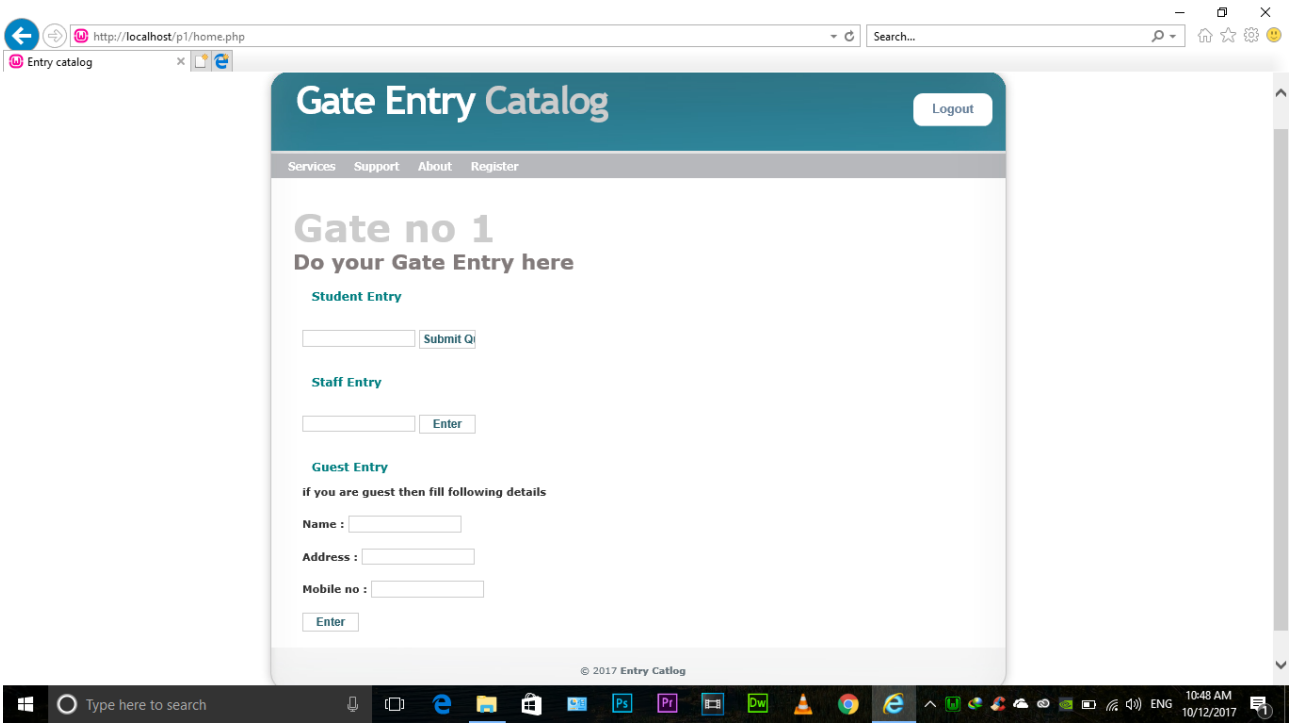

Image: Gate entry page.

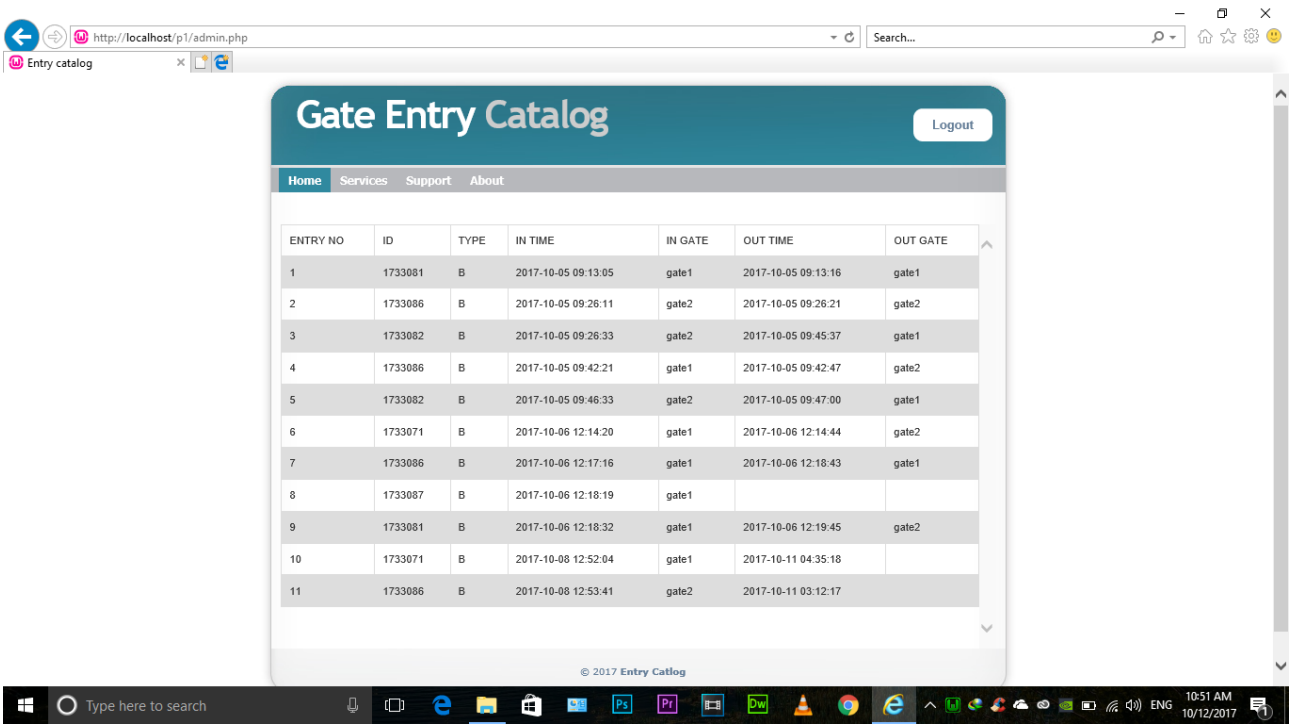

Image: Admin login entry view.

Future scope / enhancement

Future Scope:-

- **Scope of Mini project :**
  - **Features:**
    - Centralized database used hence entry data can be accessed and inserted from any gate.
    - All gates work together by means of synchronization.
    - More secure, providing no space for fake entries as data of all students and faculties is stored in database.
  - **Functionalities:**
    - Capable to store data of all persons of which entry has to be done.
    - New guest entries can be added and also their information is stored for further use in future.
  - **Issue solving:**
    - User do not need to close their entry done at particular gate, rather than his it can be closed on any gate he is leaving/entering the campus from.
    - Administrator can access entry catalog at any time by his login Id.

- No need to done separate catalog books for girls, boys, staff members and guests.
- Surveillance for security can be obtained by using this project.

Enhancements:-

- The biometric identity extension and hardware can be added to gain accuracy and security.
- For faster entry accepting the barcode reader can be used.
- Project can be enhanced throughout the campus including lab entries, hostel entries and mess hall entries also.

Conclusion

From this project it can be concluded that the database system and web page designing tools can be used together as a solution on the entry in-out problems in big campus through multiple gates.

References

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- **https://www.w3schools.com/**
- Database System Concepts Book by Silbers a., korth H., Sudarshan S.