VISVESVARAYA INSTITUTE OF TECHNOLOGY

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MINI PROJECT REPORT

ON

"STAFF INFORMATION SYSTEM"

Submitted in partial fulfillment for the requirements for the fifth semester curriculum

BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE AND ENGINEERING

For the Academic year 2018-2019

Submitted by:

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CERTIFICATE

It is certified that the project work entitled "**STAFF INFORMATION SYSTEM**" is a bona fide work carried out **by Nasir Basha K (1MV16CS057)** in partial fulfilment for the requirements of mini project for the V semester curriculum Bachelor of Engineering in Computer Science and Engineering of the Visvesvaraya Technological University, Belagavi during the year 2018-2019. It is certified that all corrections and suggestions indicated for Internal Assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the course of Bachelor of Engineering.

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Name of the Examiners Signature with date

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2)

ACKNOWLEDGEMENT

It gives us immense pleasure to express our sincere gratitude to the management of **Sir M. Visvesvaraya Institute of Technology,** Bangalore for providing the opportunity and the resources to accomplish our project work in their premises.

On the path of learning, the presence of an experienced guide is indispensable and we would like to thank our guide **Mrs. Sapna R,** Assistant Professor, Dept. of CSE, for her invaluable help and guidance.

We would also like to convey our regards and sincere thanks to **Dr. G C Bhanuprakash ,** HOD, Dept. of CSE for his suggestions, constant support and encouragement, Heartfelt and sincere thanks to **Dr.V.R.Manjunath,** Principal, Sir. MVIT for providing us with the infrastructure and facilities needed to develop our project.

We would also like to thank the staff of Department of Computer Science and Engineering and lab-in-charges for their co-operation and suggestions. Finally, we would like to thank all our friends for their help and suggestions without which completing this project would not have been possible.

-Nasir Basha K (1MV16CS057)

DECLARATION

I hereby declare that the entire mini project work embodied in this dissertation has been carried out by me and no part has been submitted for any degree or diploma of any institution previously.

Place: Bengaluru

Date:

Signature of Student:

NASIR BASHA K
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ABSTRACT

The main objective of this project is to manage details of teacher, teacher timetable, section, class time table and subject . The project is totally built at administrator and staff end and thus admin and staff is guaranteed the access. It tracks all the details about room, section, subject, etc details of a particular staff. This is useful for staff through which they can view when and where their classes is at a particular point of time. This is also useful to know a particular class time table and list of all teachers for a particular class and subject. This is an effective way of handling timetable of staff.

TABLE OF CONTENTS

Chapter.1: Introduction:

1.1 Project Profile

- **Name of the project:** Staff Information System.
- **Object Description:** The project generally refers to a system which involves retrieving timetable of a particular class or teacher, list of all teachers for a particular subject.
- **Front End:** NetBeans IDE 8.2
- **Back End:** MySQL Database

1.2 Purpose

Every college must maintain schedule of faculty to assign them classes. Admin or faculty can login into the system and can check faculty timetable details ,class timetable ,list of faculty that are teaching for a particular class, subjects taught by a particular faculty ,etc. Staff maintains a record of their timetable in a paper which can be lost, so its better to maintain a online database for storing their particulars. This is an efficient way to store timetable. It is very easy for admins also to know the details of timetable and can be edited whenever needed and can be reusable for coming years by just updating some fields.

1.3 Project Scope

Without an student and faculty database system, managing and maintaining the details of the students is a tedious job for any organization.

This system will store all the details of the students like their branch, semester, name ,usn ,etc and also includes faculty details along with the contact details.

Signup module: Signup module will helps the admins who are signing up for the first time. If they have already signed in with valid information, they can directly login.

Login Module: Login module will help in authentication of admin accounts. Users who have valid login id and password can only login .

Retrieve Module: Retrieve module will help in searching various details regarding a particular faculty .

What contribution would the project make?

This in an era of information technology where everything is based on computerized details, this project helps in maintaining computerized details of faculty and class timetable .

Computerized vs. Manual Staff Information System:

- Time saving
- Avoidance of paper
- Allows neat handling of data rather than error prone records
- Accuracy

1.4 Definitions and Abbreviations:

Admin details: Details of the admin such as id, phone number, email ,etc.

Staff details: Details of staff such as id, name, designation ,dob ,etc.

WWW: World Wide Web

SIS: Staff Information System

MySQL: A RDBMS based on SQL which is used for adding, removing and modifying information in the database.

RDBMS: Relational Database Management System.

1.5 Overview

The purpose of this document is to present a detailed description of the SIS. It will explain the purpose and features of the software, the interfaces of the software, what actually the software does, the constraints under which the software works and how it reacts to external stimuli. This document is intended for the end users.

This is based on the fact that there is a need to upgrade the system with a computer based information system which is **STAFF INFORMATON SYSTEM**.

Chapter.2: About the System:

2.1 Software Requirement Specification

❖ Introduction

This Software Requirements Specification (SRS) document is intended to give a complete overview of Staff Information system Project (working title), including the user interface. The SRS document details all features upon which the system has currently decided with reference to the manner and importance of their implementation.

❖ Product Perspective

This product and application is newer which provides the user a new utility in their role as a admin. The admin will get the details of faculty by just logging to the application and streaming on the desired details.

2.2 Performance Requirements

Better performance will lead to better operating environment. For better environment the user needs a high speed internet so that sending of OTP to email will be faster and access can be granted.

2.3 Security Requirements

The login details must be kept confidential so that other user may not login using other's id and password.

2.4 Feasibility Study

Feasibility Analysis:

- A feasibility study is a short focused, which aims to answer a number of questions:
- Does the system contribute to the overall objective of the organization?
- Can the system be implemented using the current technology and within given constant schedule constraints?
- Can the system be integrated with system which is already in place?

Economic Feasibility:

The project is economically feasible as it only requires a desktop with it's operating system. The users must be able to connect to internet and this would be the only cost incurred on the project.

Technical Feasibility:

To develop this desktop application, an internet connection, a database server, a web server and software are required. The current project is technically feasible as this desktop application was successfully deployed on my desktop.

Behavioral Feasibility:

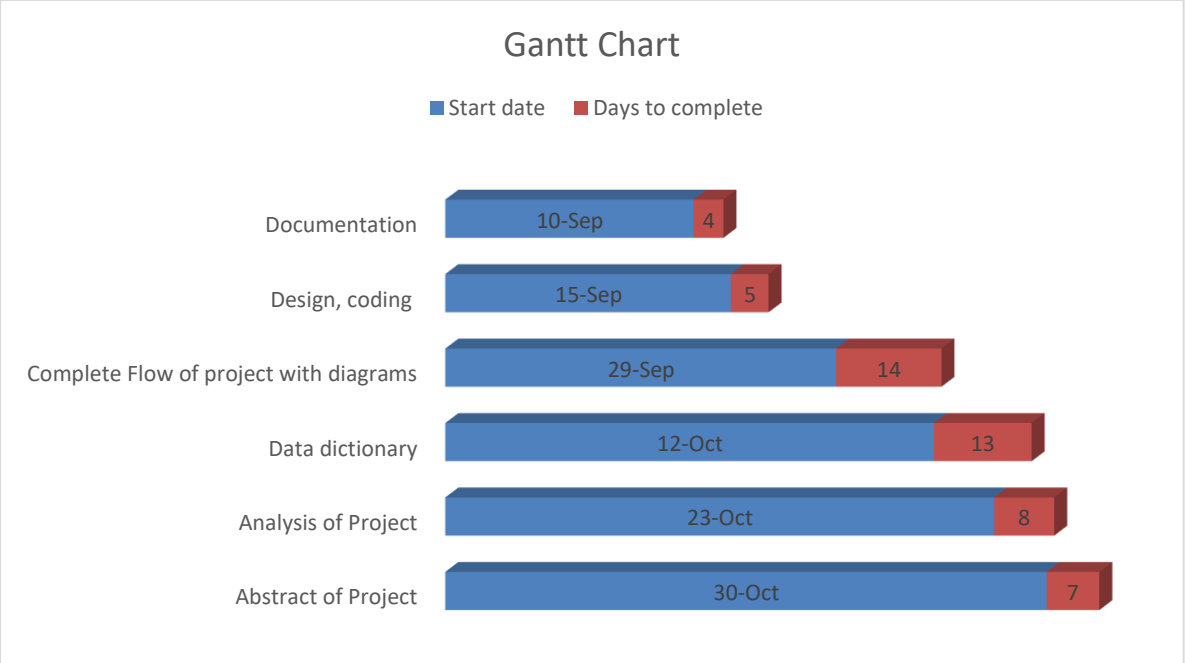
The desktop application is behaviorally feasible since it requires no technical guidance, all the modules are user friendly and execute in a manner they were designed to.

2.5 Project Plan

At the beginning of the project, I had to decide upon the topic on which my project had to be implemented. With some research I finally came out with the topic of Staff Information System. Then I approached my Department and collected a copy of staff timetable. I decided upon the design and implementation of the software and what language to use in writing the software. I have then developed a time-line for the project and the estimated time. I also pondered on a suitable name to give to the project.

The work was then divided into modules and worked on the parts of the code day-by-day. On some occasions, I had to pretend as if I were the customer so as to try to figure out some of the things that user would desire, such as the friendliness of the user interface and ease of navigation through the software.

The following Gantt Chart below shows the amount of work done or production completed in certain periods of time in relation to the amount planned for those periods.



Chapter.3: DESIGN

3.1 E-R Diagram

Entity-Relationship diagram is a detail & logical representation of entities and data elements for an organization. This technique is used in database that helps in an enterprise are related to each other. There are 3 types of E-R diagram:

1. **one to one :**

   It is a one to one relationship is an association between 2 entities.

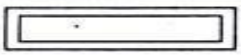
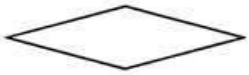
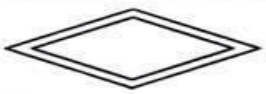
2. **one to many:**

   One-to-many relationship exists when one entity related to one or more entity.

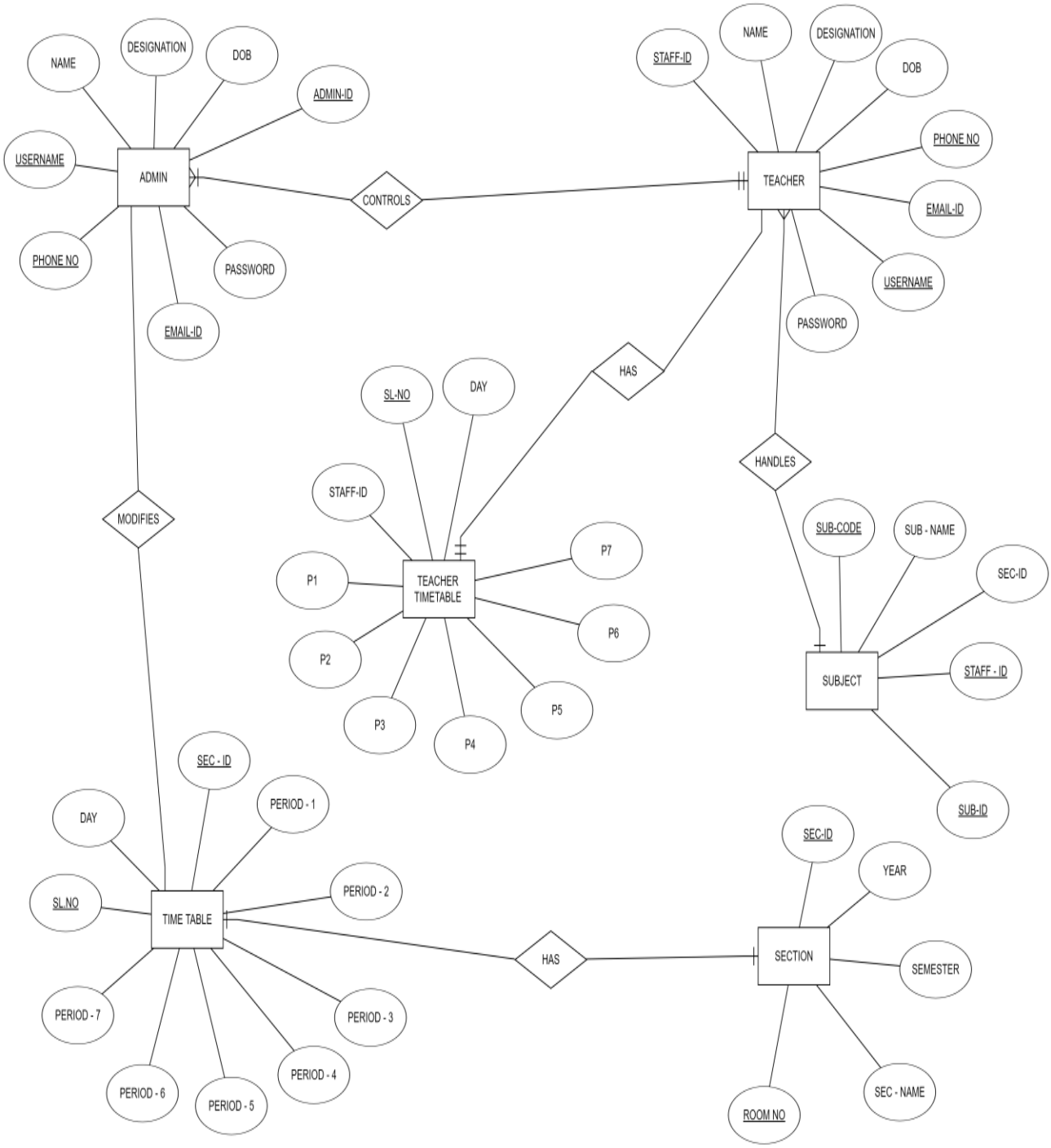
3. **Many to many:**

   It describes entities that may have many relationships among each other.

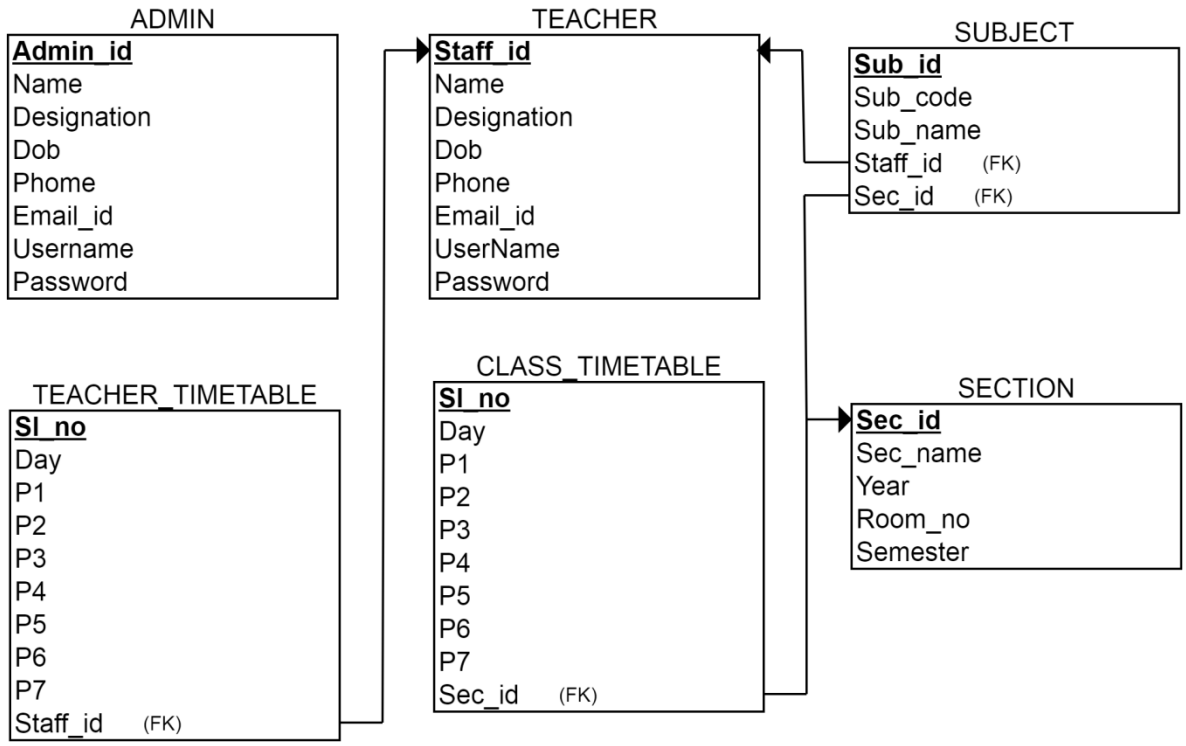
The basic symbols for E-R diagram are as described below:

SYMBOLS	MEANING
	ENTITY TYPE
	WEAK ENTITY TYPE
	RELATIONSHIP TYPE
	IDENTIFYING RELATIONSHIP TYPE
	ATTRIBUTE

The E-R diagram for Staff Information System is:



3.2 CLASS DIAGRAM:



3.3 DATA DICTIONARY:

1. Admin:

Table 1 Admin

Fieldname	Datatype	Size	Constraint
Name	Varchar	30	-
Username	Varchar	25	unique
Password	Varchar	25	-
Phone	Bigint	20	Unique
Admin_id	Int	4	Primary Key
Designation	Varchar	10	-
Email_id	Varchar	35	Unique
Dob	Date	-	-

2. Teacher_timetable:

Table 2 Teacher_timetable

Field Name	Data Type	Size	Constraint
Sl_no	Int	4	Primary Key
Staff_id	Int	4	Foreign Key
Day	Varchar	10	-
P1	Varchar	20	-
P2	Varchar	20	-
P3	Varchar	20	-
P4	Varchar	20	-
P5	Varchar	20	-
P6	Varchar	20	-
P7	Varchar	20	-

3.Subject

Table 3 Subject

Field Name	Data Type	Size	Constarint
Sub_id	Int	4	Primary Key
Staff_id	Int	4	Foreign Key
Sec_id	Char	3	Foreign Key
Sub_code	Varchar	20	-
Sub_name	Varchar	50	-

4.Section:

Table 4 Section

Field Name	Data Type	Size	Constraint
Sec_id	Char	3	Primary Key
Sec_name	Char	1	-
Year	Int	1	-
Room_no	Varchar	5	Unique
Semester	Char	1	-

5.Teacher:

Table 5 Teacher

Fieldname	Datatype	Size	Constraint
Name	Varchar	30	-
Username	Varchar	25	unique
Password	Varchar	25	-
Phone	bigint	20	Unique
Staff_id	int	4	Primary Key
Designation	Varchar	10	-
Bmail_id	Varchar	35	Unique
Dob	Date	-	-

6.Class_timetable:

Table 6 Class_timetable

Field Name	Data Type	Size	Constraint
Sl_no	int	4	Primary Key
Sec_id	Char	1	Foreign Key
Day	Varchar	10	-
P1	Varchar	20	-
P2	Varchar	20	-
P3	Varchar	20	-
P4	Varchar	20	-
P5	Varchar	20	-
P6	Varchar	20	-
P7	Varchar	20	-

Chapter.4:SYSTEM SNAPSHOTS:

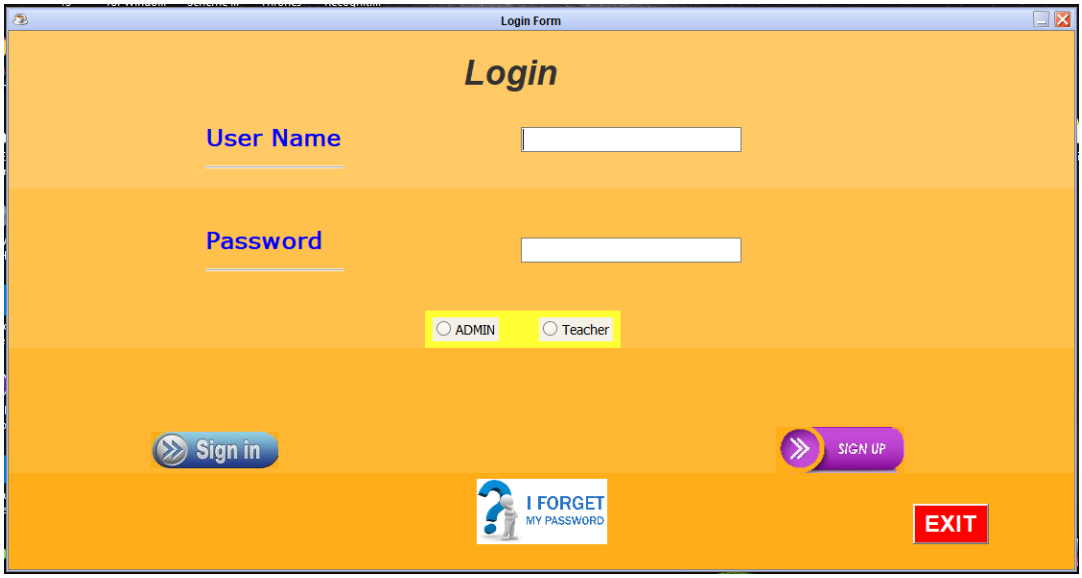


Figure 1: Login page : This page allows Staff or Admin to login to their functionalities through a unique username or password which is assigned to them. For a new user, a signup facility is provided.There is an option called “Forgot password” where a user can retrieve his existing password through email.

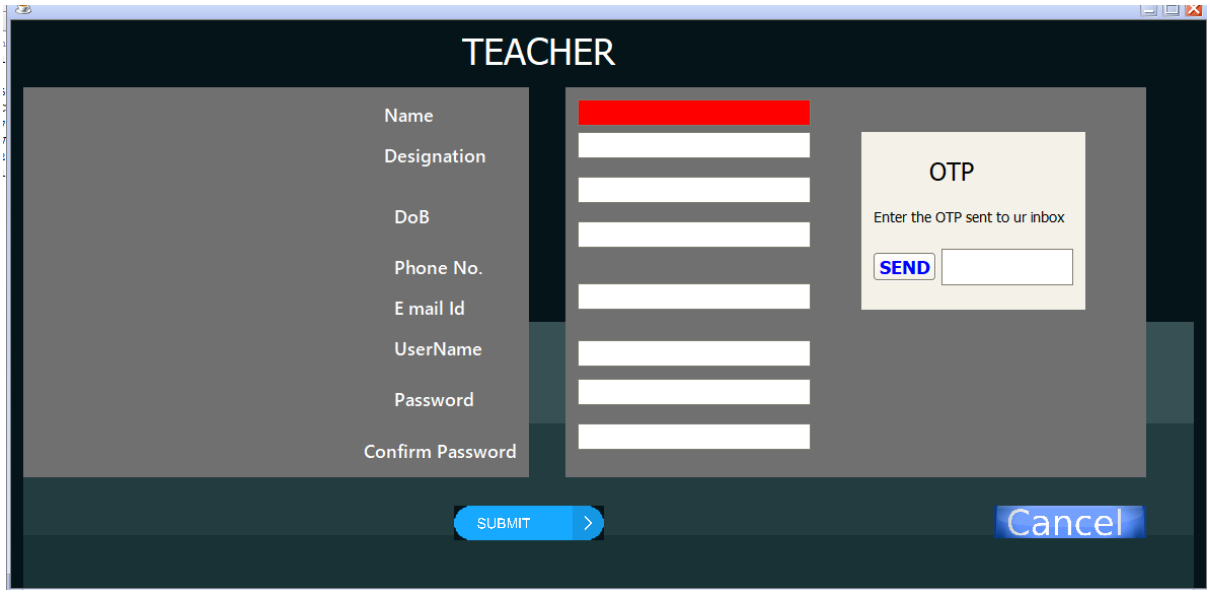


Figure 2: Signup page : This page allows new Staff to signup to their functionalities through a unique username or password and filling up some other details for future use. For a new user, a phone no. , email-id must be unique .There is an option called “Submit” where a new user is created by verifying it with OTP sent to email-id.

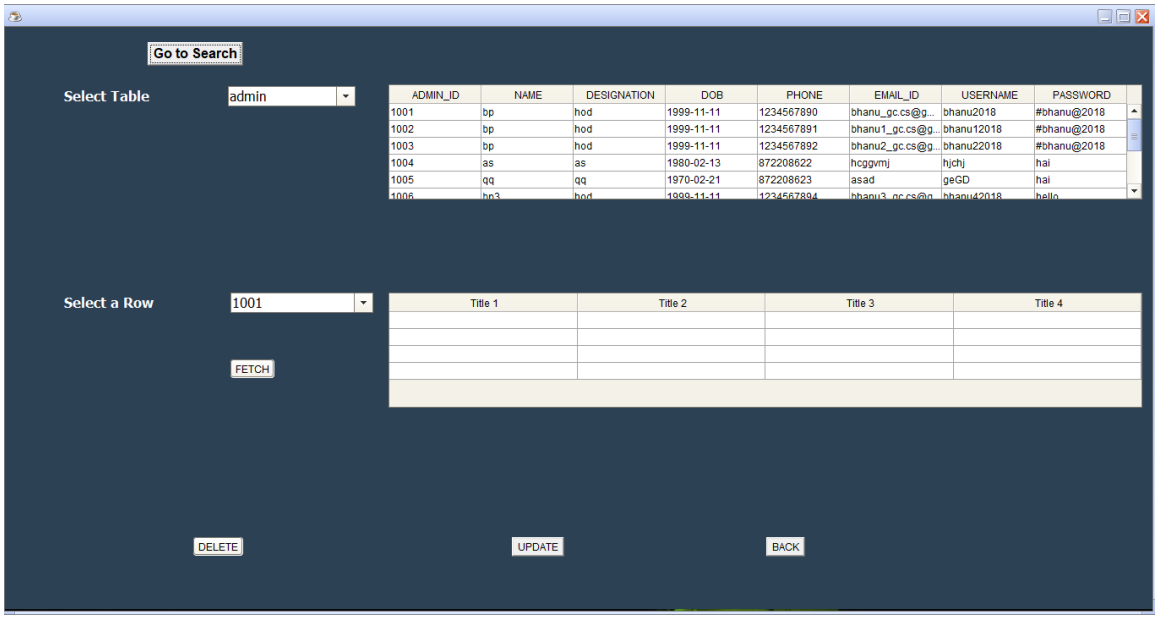


Figure 3: Admin control pane : This page allows the admin to view the records of every table in the database. Further , admin has the authority to update ,delete and fetch the details of a particular table.Admin is also provided with the option to access the functionalities of the staff using the “Go to Search” button.

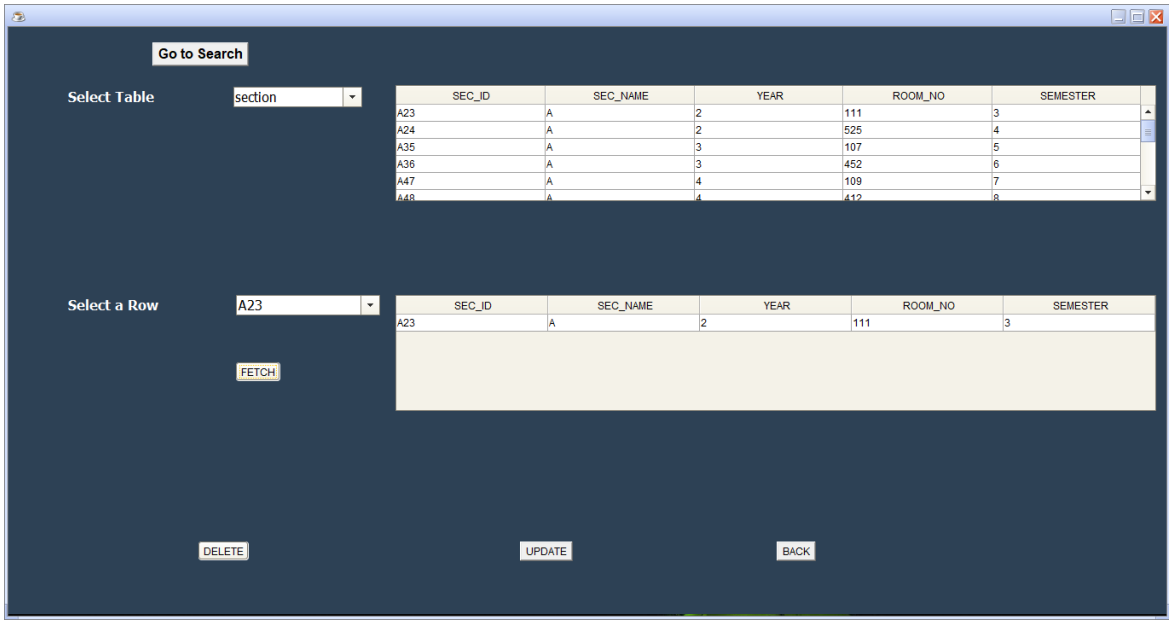


Figure 4: Admin control pane : This is an example for fetching the details of a section.

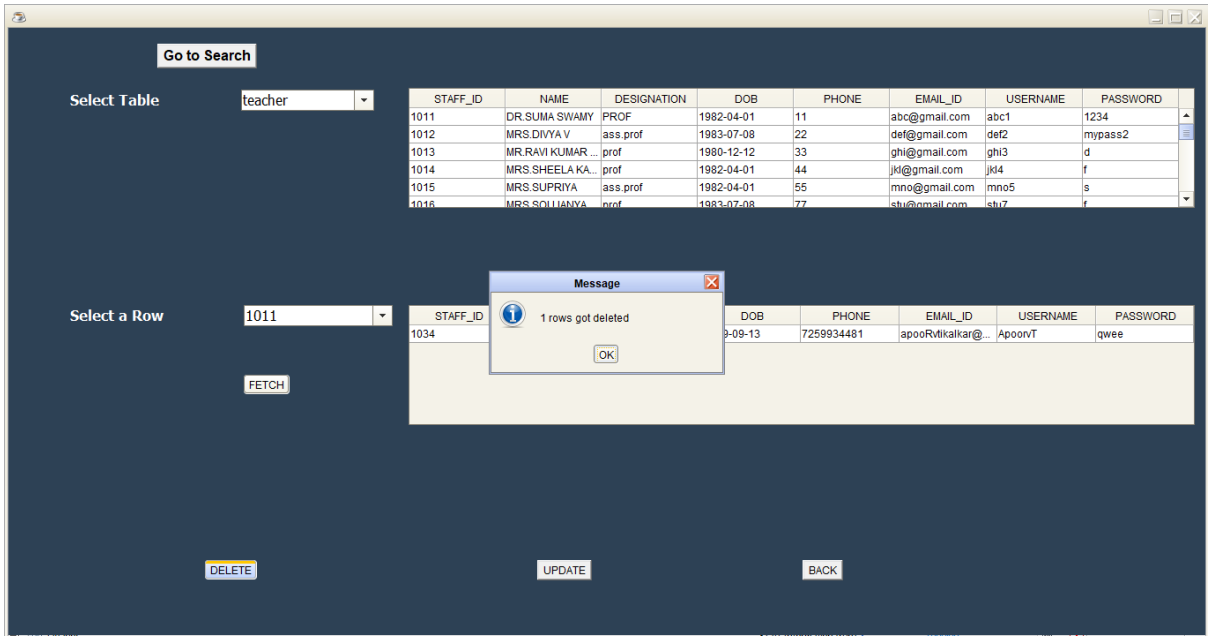


Figure 5: Admin control pane : This is an example for deleting the details of a particular staff.

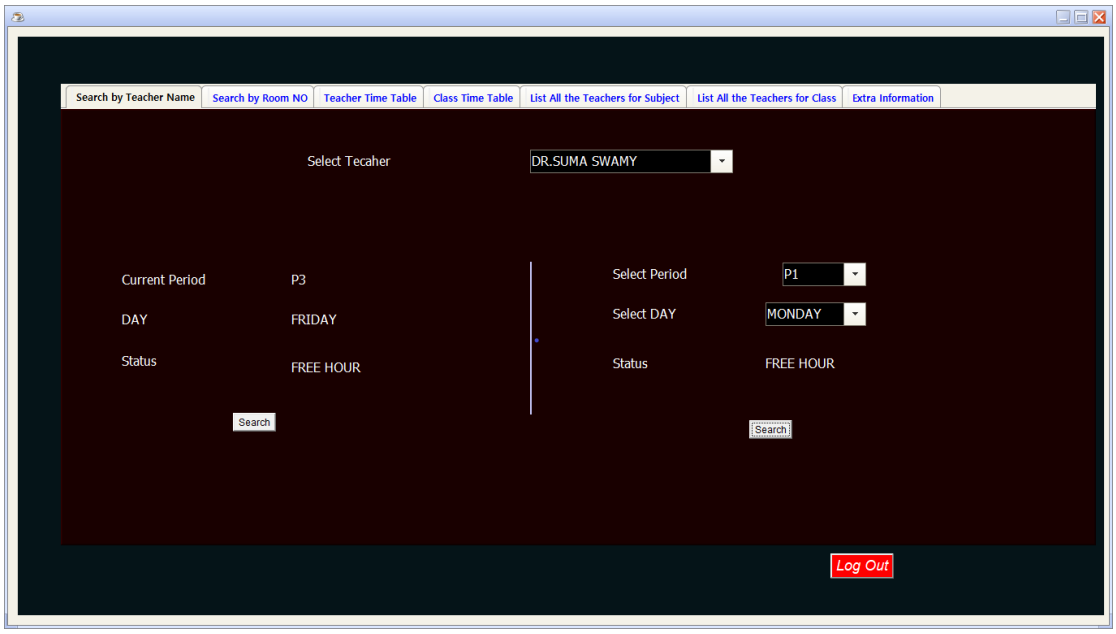
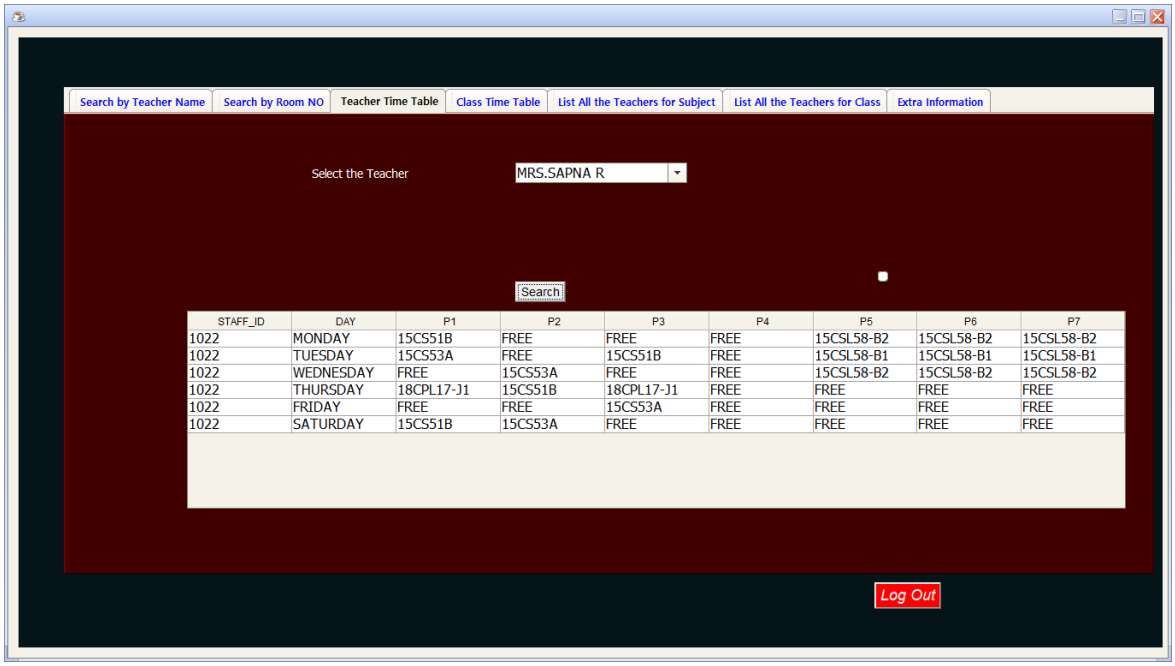


Figure 6: Staff control pane : This page gives the information about the selected Staff's schedule which includes current period,day,status in which she is engaged at this moment(search time) where current date and time is dynamically taken from the system.This also provides multi-tabs which performs various functionalities.



STAFF_ID	DAY	P1	P2	P3	P4	P5	P6	P7
1022	MONDAY	15CS51B	FREE	FREE	FREE	15CSL58-B2	15CSL58-B2	15CSL58-B2
1022	TUESDAY	15CS53A	FREE	15CS51B	FREE	15CSL58-B1	15CSL58-B1	15CSL58-B1
1022	WEDNESDAY	FREE	15CS53A	FREE	FREE	15CSL58-B2	15CSL58-B2	15CSL58-B2
1022	THURSDAY	18CPL17-J1	15CS51B	18CPL17-J1	FREE	FREE	FREE	FREE
1022	FRIDAY	FREE	FREE	15CS53A	FREE	FREE	FREE	FREE
1022	SATURDAY	15CS51B	15CS53A	FREE	FREE	FREE	FREE	FREE

Figure 6: Staff control pane : This page is an example for retrieving timetable of a particular staff.

Chapter.5: TESTING:

5.1 Testing Plan

5.1.1 The Testing Process:

We have tested the software process activities such as design, implementation and requirement engineering because design errors are very costly to repair once system has been designed and once it has been started to operate. Therefore, it is quite obvious to repair at an early stage of the system. So analysis is the most important process of any project.

5.1.2 Requirement Traceability:

As the most interested portion is whether the system is meeting its requirements or not, for that testing should be planned so that all requirements are individually tested. We

have to check out that output of certain combinations of inputs gives the desirable results or not. Your requirement specification gives us the path to get the desirable result.

5.1.3 Testing Schedule:

We have tested each procedure back to back so that errors and omissions can be found as early as possible.

5.2 Testing Strategy

A strategy for the software testing integrates software test case design methods into a well-planned series of steps that result in the successful construction of software. The strategy provides a road map that describes the steps to be conducted as part of testing. When these steps are planned and then undertaken, very much efforts, time and resources are required. A software testing strategy should be flexible enough to promote a customized testing approach. At that same time it must be rigid enough to promote reasonable planning and management tracking as the project progresses.

- ✓ A software testing strategy has following characteristics:
- Testing begins at the component level and works outward towards the integration of the entire computer based system.
- Different testing techniques are appropriate at different points in time.
- Testing & Debugging are different activities but debugging must be accommodated in any testing strategy. We checked entire project thoroughly so not even a single mistake would be there.

5.3 TEST CASES

Table: Testing New Faculty Entries

Sr. No	Test Case	Validation or Requirement	Test Data	Expected Result	Actual Result	Modification
1	New Faculty Entry	All details are required	Adding a new User	New entry should be done successfully	Successful	No Modification
2	New Faculty Entry	All data are required	All details	Successful entry	Successful	No Modification
3	Faculty Entry with an existing ID	Data already inserted	All details	Shows Error	Showing Error	No Modification

Table: Testing Login entries for Login

Sr. No	Test Case	Validation or Requirement	Test Data	Expected Result	Actual Result	Modification
1	Right Login	Authentication	Username and Password entered	Login done successfully	Successful	No Modification
2	Wrong Login	Authentication	Username and Password entered	Login won't be successful	Unsuccessful	No Modification

Chapter.6: CONCLUSION & FUTURE ENHANCEMENT

6.1 Conclusion:

In my project, the application will help the user to access the timetable as per authority of user given by administration. Its very important for a department to manage their academic timetable for a given semester .This project titled “Staff Information System” manages the complete day-to-day academic timetable of every staff within a department.

Through this an end user can know the class timetable of a selected section. This also allows the end user to know the class being allotted for a given staff at the given day and time. With this we can know the staff details and respective sections being handled by the staff for a given subject. This provides additional functionalities related to staff timetable like sending birthday wishes to staff, staff for a particular class ,etc.

Overall , this system makes the tracking of staff at a particular point of time much simpler and easier. Therefore, this system effectively manages staff timetable details.

6.2 Future Enhancement:

In future the work of instant messaging and further module development can be done which will make our project fully automated. Also a more reliable software for the timetable should be provided. In future user may be able to perform all the operation through mobile device.

Chapter.7: APPENDIX

A :MYSQL (Structured Query Language)

MySQL is an open source Relation DataBase Management System (RDBMS). MySQL is written in C and C++. MySQL is a central component of the LAMP open-source web application software stack (and other “AMP” stacks). LAMP is an acronym for “linux apache MySQL python ".

B :NETBEANS AND JAVA SWINGS

NetBeans is an (IDE) for java. NetBeans allows applications to be developed from a set of modular software components called modules. NetBeans runs on Microsoft windows,

macOS, linux and solaris. In addition to Java development, it has extensions for other languages like php ,c , c++ ,html5 , and javascript.

The NetBeans Platform is a Framework for simplifying the development of java swing desktop applications. The NetBeans IDE bundle for Java SE contains what is needed to start developing NetBeans plugins and NetBeans Platform based applications; no additional SDK is required. Applications can install modules dynamically. Reinstalling an upgrade or a new release does not force users to download the entire application again.

Swing is a GUI widget toolkit for JAVA. It is part of Oracle's Java Foundation Classesan API for providing a graphical user interface for Java programs.

Swings provide a look and feel that emulates the look and feel of several platforms and also supports a pluggable look and feel that allows applications to have a look and feel unrelated to the underlying platform. In addition to familiar components such as buttons, check boxes and labels Swings provide several advanced components such as tabbed panel, scroll panes, tress, tables, lists etc.

Chapter.8: REFERENCES

8.1 References

Books:

- Database system models, Languages, Design and Application Programming by Ramez Elmasri and Shamkant B Navathe,7th Edition.
- Java-The Complete Reference by Herbert Schildt,7th Edition.

Links:

- https://www.wikipedia.org/
- https://www.edsys.in/time-table-management/
- https://www.slideshare.net
- https://www.youtube.com
- https://stackoverflow.com