

Scehduler System

Sathyabama Institute of Science and Technology (Deemed to be University)

Submitted in partial fulfillment of the requirements for the
Award of
Bachelor of Technology Degree in Information Technology

By

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**DEPARTMENT OF INFORMATION TECHNOLOGY
SCHOOL OF COMPUTING**

**SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

Accredited with Grade "A" by NAAC

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SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

(Established under Section 3 of UGC Act, 1956)

Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai -



SCHOOL OF COMPUTING

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of Vinoth.V (38120093) who carried out the project entitled “Scheduler system” under our supervision from Jan 2019 to April 2019.

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DECLARATION

I **Vinoth.V (38120093)** hereby declare that the Project Report entitled **“Scheduler system”** done by me under the guidance of **Dr.J. Jabez M.E., PH.D.**, is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering / Technology degree in **INFORMATION TECHNOLOGY**.

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ABSTRACT

The **Scheduler System** is a **website** that acts as an online portal between the faculty and the college authority. The main purpose of this system is to avoid any kind of meetings in order to announce the hall number to the corresponding faculty during the exam time. This project is not designed for particular department. In this website, Two types of people play roles those are **admin** and **faculty**. The purpose of admin is to enter the details of faculties like faculty id, hall number, one-time password, etc. All the faculties need is to go and login to the site and view their duties allotted or updated by the admin for the current or ongoing examination. They can know the details like date, time, hall number, OTP and whether any of duties are done. This website is developed using Html5, Css3, Bootstrap4, php and MySQL database. The advantage of this application is That it saves the time of faculty by avoiding the meetings in order to announce the hall number to the corresponding faculty.

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LIST OF ABBREVIATIONS

ABBREVIATION	EXPANSION
HTML	Hypertext Markup Language
CSS	Cascading Style Sheet
PHP	Hypertext Preprocessor
SQL	Structured Query Language
XAMPP	Multiplatform, Apache, MySQL, Php and Perl
UI	User Interface
CRUD	Create Read Update and Delete

CHAPTER1

INTRODUCTION

The Scheduling system website will be pretty helpful by saving time and managing all records for the faculty's information on exam time. Then, the hall allotment for a faculty become more easier even at one click. It will also help in saving effort along with time. A good UI must be simple with as much content as possible. All the information like date, time, hall number, etc. of a faculty can be obtained with just a click. This won't include any personal details other than Mail Id and mobile number. The admin will enter and update the duty details for all faculties and also can be able to view the details uploaded which will be helpful while facing any issues for a faculty. If you want any information regarding the particular faculty then it can be obtained by just entering the roll number or the name of the student to be searched. This student management system will make the work of storing the data in an organized way. Here in the counselor application, the counselor will sign in by entering his email id and password from that he will update the student assessment marks for allocated sections, where the students can view their internal assessment marks easily.

The main motive of designing of this website is that it saves the time of faculty. When the details of a particular duty details are needed for the upcoming exams, faculties must go and participate in a meeting where faculty gets details. As the details of the faculties are maintained in a same place, in our website we provide all the faculties information such as faculty Id, faculty name, date of exam, time of exam, hall number and an info with which we faculty knows whether the particular duty was done or not. All the faculties details are available in one place so it is easy for the for the admin to retrieve all the details of the faculties, if any faculty faces any network issue. The main aim of this project is to achieve a customized way to manage the faculty's reports and remaining duties and other exam related information in a precise manner.

1.1 OBJECTIVE

The objective of this application is that it saves time when the details about the regarding exam duties of a particular/corresponding faculty is to be distributed. This venture is an online portal for administrator and faculty. It consists of a faculty login and administer login as separate. Here In this website, all the data about the upcoming and the finished duties of a faculty of the ongoing exam. This application provides a way for administrator and faculty to communicate to each other, this'll throw all the drawbacks of manual process, increase the efficiency and speed up all manual works to be completed. Each and every faculty detail will be notified by the admin, incase if any faculty fails to login or forgot the password or forgot the OTP, Then, they can contact the admin by the details provided on the contact page of this website. In the scheduler system website, faculty will be logging in by entering their email and password. By that each faculty can view their duties ahead and their duties already done and can make their attendance by themselves by entering the OTP which is given on the exam hall.

1.2 OVERVIEW OF THE PROJECT

We have developed the system in such a way that it can be used efficiently by all the faculties. Let's Assume all the webpages and logics related to admin and faculties as separate modules. We have two modules and each of these modules have their own unique functions. Important thing is that it is not designed for particular department. This system can help all the faculties to access their own duty details through internet or intranet that means anytime and anywhere. We wanted to create a tool that fits into modern age, but still stays true to the "**concepts of studying**". So, this process also helps in maintaining consistency and integrity. The users can readily store and retrieve their data through online. This system helps the user to generate the dynamic legwork.

CHAPTER 2

LITERATURE SURVEY

The faculty Scheduler Portal is a web portal that acts between the faculty and the organization. The information on the faculty Portal is for them as it provides all details regarding the exam duty for the current examination etc.

2.1 AIM

The main motive of designing of this website is that it saves the time of faculty. When the details of a particular duty details are needed for the upcoming exams, faculties must go and participate in a meeting where faculty gets details. As the details of the faculties are maintained in a same place, in our website we provide all the faculties information such as faculty Id, faculty name, date of exam, time of exam, hall number and an info with which we faculty knows whether the particular duty was done or not. All the faculties details are available in one place so it is easy for the for the admin to retrieve all the details of the faculties, if any faculty faces any network issue. The main aim of this project is to achieve a customized way to manage the faculty's reports and remaining duties and other exam related information in a precise manner.

2.2 EXSITING SYSTEM

LITERATURE SURVEY 1

TITLE: Final Exam Scheduling Timetable a Case Study

AUTHORS: Mohamad Adhan Moreb.

DESCRIPTION

- My professional knowledge and research in two field first: develop and study the scheduling problem or related problem, second research in e learning management system such as research in mobile learning, stander for e learning course, consistency for e learning course, e learning with web 2 impact.

- Scheduling problem has many application such as co-production and consistency, I worked about 4 years in studying Final Exam Scheduling Timetable in my B.SC degree and in master level for two university, and I can work to make the algorithm to solve Final Exam Scheduling Timetable or relater Scheduling problem as general for most universities depending in input and some parameters to customize this algorithms for that university.
- Abstract scheduling problem is defined in many areas and it's hard to solve, because it includes many constraints that should be solved.
- Final Exam Scheduling is one type of Scheduling problem, and it's hard to be solved.
- Because each university may include hard and soft constraints that are different for each case.

LITERATURE SURVEY 3

TITLE: Examination Management Automation System

AUTHORS: Vamsi Krishna Yepuri, Gopi Chand Pamu, Naveen Kodali , Pradyumna L V

DESCRIPTION

- Examination is a core activity of any educational institution.
- As the examination arrives there exists a lot of work like consolidating the time table, seating arrangement and invigilation allotment which will be done manually and it takes lot of time and requires man power.
- Thus, an automated system would solve the above stated problem in just few clicks of work.

- The purpose of developing Examination Management Automation System is to computerize the traditional way of conducting exams.
- It is a web and android application that can be used by students and exam cell coordinator using their smart phones or PCs.
- The project keeps track of various details in modules such as Students Details, Staff Details, and Hall Details with proper descriptions.
- It also has some features to generate reports for bundle handovers, absentee's statement and roll lists.

LITERATURE SURVEY 4

TITLE: Exam Cell Automation System

AUTHORS: S. Priya Dharshini, M. Selva Sudha

DESCRIPTION

- The projects main objective is to simplify the allocation of halls in the institute and also allows the students to access the examination information of their respective department.
- The information is stored in alphabetical order which is provided by the faculty and the exam coordinator of their respective department.
- The admin updates the information about student details, exam timing, hall details and available space in the hall.
- Now the automated system will generate the seating order to the students which are provided by department staff in the form of spreadsheet.
- The admin will enter the information about the student's marks into their spreadsheets directly by GUI or by the database entry.

LITERATURE SURVEY 5

TITLE: Automation of Examination System

AUTHORS: Dayanand G Savakar, Ravi Hosur

DESCRIPTION

- This application is an automated system for the entire institute that deals with student seat allocation and faculty supervision allocation for examination at university level to manage the academic examination process using the cloud computing technology.
- Here the computerized system allocates the number of students to a particular block and supervisor to their block and also allows the supervisor to exchange their duties, generate report cards the particular date, session, block and generate the report for the students that were absent for the particular examination.

2.2 Disadvantages of current system:

- Takes a lot of time.
- Resembles like a complex problem while allocating faculty to different rooms.
- Less Accurate.
- Requires more manual work.
- Paper work required.
- Previous records not stored.
- High complexity and additional setting efforts.
- Complex to setup.
- Re-authentication when using multiple systems.

Advantages over current system:

- Easy to handle and operate.

- Friendly interface.
- Fast and convenient.
- Less human effort.
- Easy to update.
- Easy message passing.
- Smart way of communication
- No paper work required.

CHAPTER 3

METHODOLOGY

3.1 OVERVIEW

The fundamental idea behind my project is to create a website that would make greater this easier. I wanted to create a tool that fits into modern age, but still stays true to the concepts of studying. Following is the detail of different modules of my project.

3.2 SYSTEM EXSITANCE

There are many portal systems that are developed such as Examination automation portal, placement portal, counselling portal etc. This portal which is for faulty that can only be used the faculties to view their assessment and semester duties and it also contains various other features like OTP for attendance, admin helps, etc. It is designed to reduce the time that is taken for the announcement of the details of a particular faculty.

3.3 PROPOSED SYSTEM

We have developed the system in such a way that it can be used efficiently by the faculty. The system is designed just like any other portal system that initially consists of user mail id and password. In this website I give a faculty management system where the exam duties can be allotted, those duties can be viewed and also, they can be known whether we done the particular duty or not. This product contains each and every data regarding faculty's academic and very few personal details also.

3.4 SYSTEM ARCHITECTURE

The overall architecture defines the system functionalities of the various entities involved. Consider, the various functionalities for administrator and faculty as separate modules. In such a way, this application consists of two modules. They are,

- Administrator
- Faculty

Each of the modules has its own unique functionalities. The faculty will have to first login by their own user mail id and password by which they can view their done and upcoming duties of current examination. All these data will be stored in the MySQL database. The admin's work is to update duty details and monitor the system, if any of the faculty did not do his/her duty, Admin can inform and enquire him/her. It will display the status as either "Done" or "Not Done" in the database. The faculty has to update their attendance by the given OTP. After updating the attendance using the OTP, the status will change from "Not Done" to "Done".

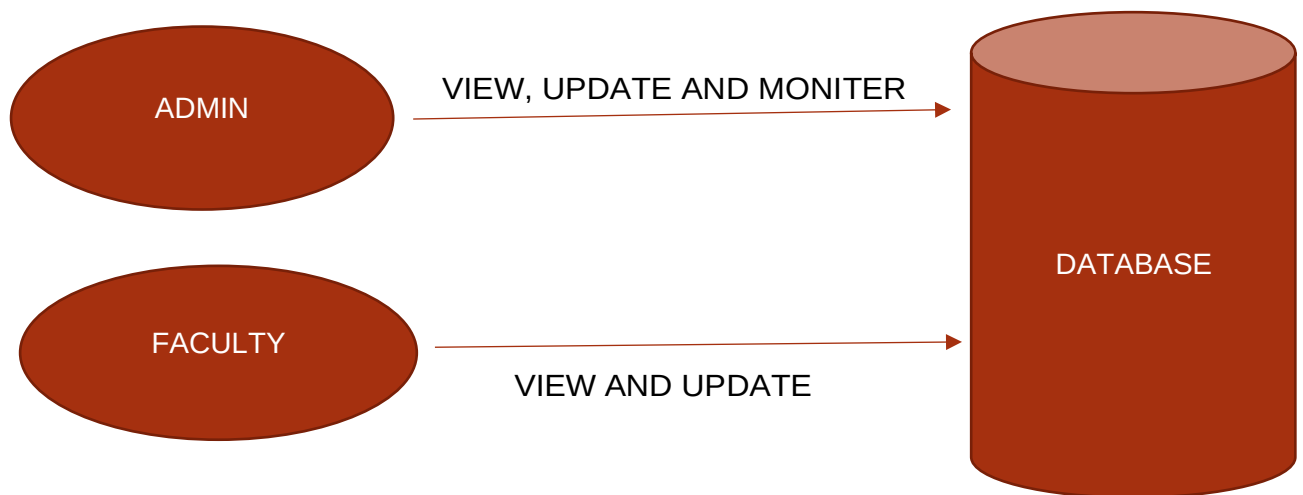


Figure 3.1. System Architecture

3.5 DESCRIPTION WITH MODULE

MODULE

Software is divided into separately named and addressable components called modules that are integrated to satisfy problem requirements. Modularity is the single attribute of software that allows a program to be intellectually manageable. This Scheduler System project is divided into 2 modules

❖ ADMIN

❖ FACULTY

3.5.1 ADMIN MODULE

The purpose of admin module is to enter the details of the faculty duty wise and to monitor the system efficiently. The admin will have a separate username, mail id and password using it, the admin can check if the duty attendance are updated by the faculties in the database. Each faculty detail can be collected by the admin from the database when there is need. The admin has to enter each faculty's duty details accordingly. All the faculty details will be saved in the database. The fields that will be asked are the id number of the faculty, date of the duty, from and to time of the duty, hall number and OTP for the faculty with which they can mark their presence. The admin can also view the student's details. If the counselor has not updated any of the student marks it will be notified to the admin.

The admin will send a message to that particular counselor who has not updated the student marks.

Admin is a person whose responsibility is to maintain the database that contains each and every data regarding the all the faculties. Admin can't add faculties details into the database, can be able to delete duty details. Admin has some other responsibilities they are that the Admin can maintain the details of each faculty.

3.5.2 FACULTY MODULE

It consists of a faculty name, mail id, mobile number and password. The faculty does no work here than making their attendance with the help of OTP given to them at the exam hall. The attendance will be updated in the database. The responsibility of the faculty is to login into the site and can view his/her regarding duty details.

Whenever the faculty fails to enter the attendance or fails to come to the exam hall, Admin will send a notification to that specific faculty.

The faculty can use their mail and they have to create a password to login whenever need and enter the student marks. It will be updated in the database for future use. The counselor can view the student marks according irrespective of the section they handle for. It displays the list of student's names for the section they handle. The counselor has to enter the marks of each student semester wise. According to the subjects that are for each semester, the mark is entered along with their grade. And then it will be updated in the database.

3.6 SYSTEM REQUIREMENTS

3.6.1 SOFTWARE REQUIREMENTS

- Operating System : Windows 7 and above (minimum x64)
- Server : Xampp server

3.6.2 TECHNOLOGIES USED

Front End consists of,

- HTML5 (Version 5)
- CSS3 (Version 3)
- Bootstrap 4 (A CSS library)

- jQuery (a java script library)

Back End consists of,

- PHP
- MySQL

3.7.1 jQuery

jQuery is a fast and concise JavaScript Library created by John Resig in 2006 with a nice motto: Write less, do more. jQuery simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development. jQuery is a JavaScript toolkit designed to simplify various tasks by writing less code. As almost everything, we do when using jQuery reads or manipulates the document object model (DOM), we need to make sure that we start adding events etc. as soon as the DOM is ready.

If you want an event to work on your page, you should call it inside the `$(document).ready ()` function. Everything inside it will load as soon as the DOM is loaded and before the page contents are loaded.

3.7.2 DATABASE

The MySQL database is a high quality, visual and open source tool to perform CRUD operation on the files of the database with PHP. It's user friendly. SQL or Structured Query Language is specifically used by business professionals or program developers for administering, updating, maintaining and manipulating the databases or tables that are used for business decision-making. It is usually used to fetch data, update the contents of the table, or operate on the structure of the database or tables, using any type of database tools, which will have a user interface to apply the operations on the database. SQL can be used for both relational and multidimensional types of databases.

SQL is a declarative language which means it is a programming paradigm, a style of building the structure and elements of computer programs that express the logic of a computation without describing its control flow. SQL's sole design is to manage databases, and that's the biggest benefit it can have for your company. SQL can run complex queries that search for specific pieces of information based on listed criteria. For example, if you had a database of employee payments and you wanted to just see the amount paid to employees in the marketing division, SQL could run a query that would only pull information about those individuals. The main goal of the project is to allow non-technical users to create, modify and edit SQLite databases using a set of wizards and a spreadsheet-like interface.

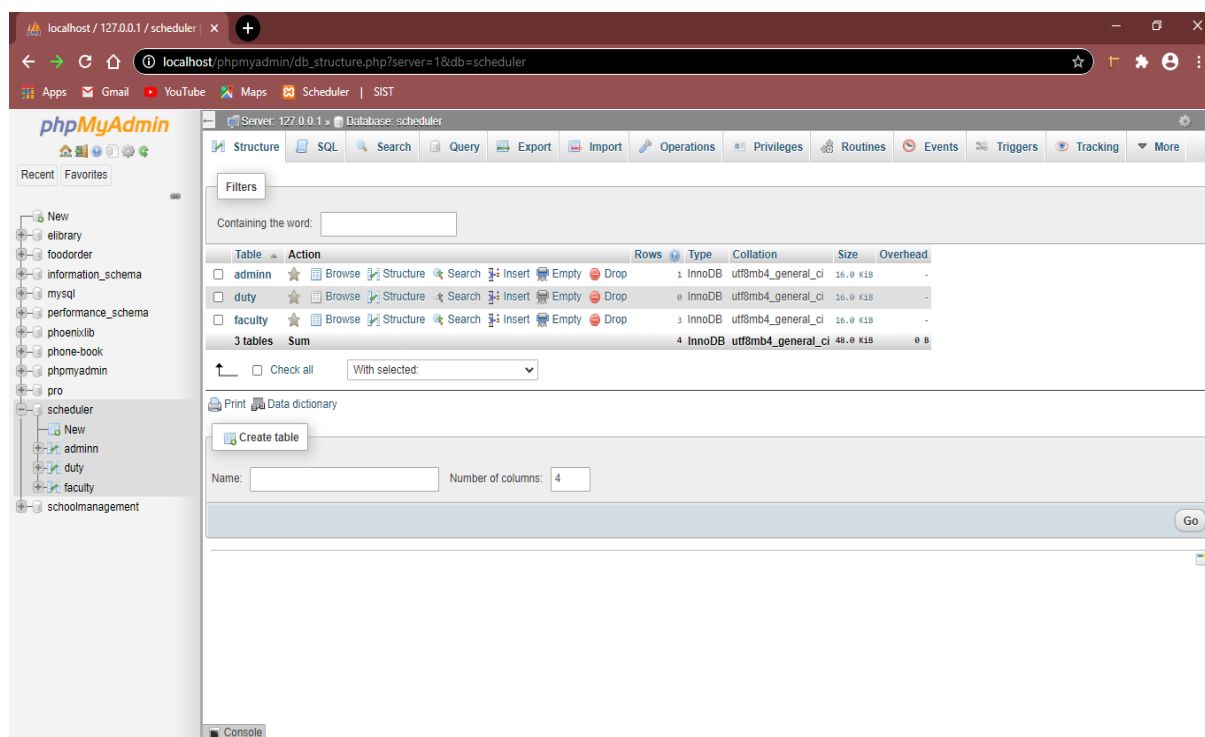


FIGURE 3.2 MySQL DATABASE

CHAPTER 4

RESULT AND DISCUSSION

4.1 PROJECT SCOPE

The main aim of this project is to achieve a customized way to manage the faculty's exam duty details in a precise manner. In this paper we present a scheduler portal system that gives few but important services that must be provided to a faculty over the internet. This product contains each and every data regarding faculty academic and personal details which really can't be updated by the faculty and but can be viewed by the administrator.

4.2 PROJECT OUTLOOK

Scheduler portal System is capable of managing each and every data regarding faculty's exam duty details, attendances etc. Scheduler portal System helps us in managing in an extremely efficient way. We have two modules in this project. One is admin, and another one is faculty. Admin can maintain the personal details of faculty and faculties can only update their attendance with the help of OTP in the database. Admin module can't edit their personal details, but only can view the faculties personal and exam duty details. Faculty module can edit their password and attendance their own.

4.3 DESIGN AND IMPLEMENTATION CONSTRAINTS

Design constraints analysis for a given item should be accomplished concurrently with functional analyses and the resulting hardware and software allocations. That is, it should be performed in parallel with the performance requirements analysis recognizing a significant difference. We can identify performance requirements on the functional plane before knowing what the product entity is to which the requirement will be allocated. That really should be considered the norm. Design constraints have to be identified in context with the product entities they are associated with.

They must be identified on the physical plane. The system engineering purist may feel that the complete requirements analysis process, including constraints analysis, should be finished before the design concept is selected. Unfortunately, that is not always possible. Some design constraints can only be properly defined in quantitative terms after the design concept or even preliminary design has been selected. The development team or principal engineer must be watchful that compatibility is maintained between the evolving constraints and the approved design concept. Where new, needed constraints are identified that conflict with existing design conclusions, they must be revisited and conscious decisions reached about how to handle the conflict. We should seek to minimize cases where the design must be changed to reflect the late development of requirements, of course. If carried to the extreme, this can result in what we are trying to prevent through careful requirements analysis, the addition of unnecessary cost.

4.3.1 ANALYSIS CONSTRAINTS

System design takes the following inputs,

- Statement of work
- Constraints as Informal Text
- Requirement determination plan
- Constraints as Operational Restrictions
- Constraints as a Separate Concept
- Constraints Implied by the Model Structure
- Current situation analysis
- Proposed system requirements including a conceptual data model, modified DFDs, and Metadata (data about data).

4.3.2 IMPLEMENTATIONAL CONSTRAINTS

Implementation is a process of ensuring that the information system is operational. Implementation allows the users to take over its operation for use and evaluation. It involves,

- Constructing a new system from scratch
- Constructing a new system from the existing one.
- Using Constraints to Show or Hide an Application Feature
- Using Constraints to Deliver Specific Content Types
- Defining Constraints for Application Features
- Dynamic Constraints on Application Features and Content

4.4 NON-FUNCTIONAL REQUIREMENT

Performance Requirements Analysis is a set of activities performed during the requirements gathering phase of a program to identify the Performance Engineering related objectives for the solution being delivered. These objectives are also called the Non-Functional Requirements of the solution.

- Scalability Requirements,
- Availability Requirements,
- Reliability and Fail over Requirements,
- Performance Requirements.

4.4.1 SAFETY REQUIREMENT

This subsection describes a safety-engineering process with emphasis on the engineering of safety-related requirements. It addresses:

- Safety Program Planning,
- Safety Analysis including Asset Analysis,
- Safety Incidence Analysis,
- Hazard Analysis,
- Safety Risk Analysis,
- Safety Significance Analysis, and
- Safety Control Analysis.

4.4.2 CODING AND TESTING

A coding standard gives a uniform appearance to the codes written by different engineers. It improves readability, and maintainability of the code and it reduces complexity also. It helps in code reuse and helps to detect error easily. It promotes sound programming practices and increases efficiency of the programmers. Once the design aspect of the system is finalizing the system enters into the coding and testing phase. The coding phase brings the actual system into action by converting the design of the system into the code in a given programming language. Therefore, a good coding style has to be taken whenever changes are required it easily screwed into the system. Testers require good coding knowledge when they go after an automation testing or white box testing. This is because automation testing involves statement coverage, code coverage, cyclomatic complexity, etc. all these concepts need a good knowledge of programming skills and database.

4.5 CODING STANDARDS

Coding standards are guidelines to programming that focuses on the physical structure and appearance of the program. They make the code easier to read, understand and maintain. This phase of the system actually implements the blueprint developed during the design phase. The coding specification should be in such a way that any programmer must be able to understand the code and can bring about changes whenever felt necessary. To build enterprise Java applications, which are reliable, scalable and maintainable, it is important for development teams to adopt proven design techniques and good coding standards. The adoption of coding standards results in code consistency, which makes it easier to understand, develop and maintain the application. In addition, by being aware of and following the right coding techniques at a granular level, the programmer can make the code more efficient and performance effective. An effective mechanism of institutionalizing production of quality code is to develop programming standard and enforce the same through code reviews. This document delves into some fundamental Java programming techniques and provides a rich collection of coding practices. Some of the standard needed to achieve the above-mentioned objectives are as follows: Program should be simple, clear and easy to understand.

- Naming conventions
- Value conventions
- Script and comment procedure
- Message box format
- Exception and error handling

4.6 TESTING

Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not. Testing is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements. Testing is performed to identify errors. It is used for quality assurance. Testing is an integral part of the entire development and maintenance process. The goal of the testing during phase is to verify that the specification has been accurately and completely incorporated into the design, as well as to ensure the correctness of the design itself. For example, the design must not have any logic faults in the design is detected before coding commences, otherwise the cost of fixing the faults will be considerably higher as reflected. Detection of design faults can be achieved by means of inspection as well as walkthrough. Testing is one of the important steps in the software development phase. Testing checks for the errors, as a whole of the project testing involves the following test cases:

- Static analysis is used to investigate the structural properties of the Source code.
- Dynamic testing is used to investigate the behaviour of the source code by executing the program on the test data.

4.6.1 SYSTEM TESTING

System testing is testing conducted on a complete integrated system to evaluate the system's compliance with its specified requirements. System testing takes, as its input, all of the integrated components that have passed integration testing. The purpose of integration testing is to detect any inconsistencies between the units that are integrated together (called assemblages). System testing seeks to detect defects both within the "inter-assemblages" and also within the system as a whole.

The actual result is the behaviour produced or observed when a component or system is tested. System testing is performed on the entire system in the context of either functional requirement specifications (FRS) or system requirement specification (SRS), or both. System testing tests not only the design, but also the behaviour and even the believed expectations of the customer. It is also intended to test up to and beyond the bounds defined in the software or hardware requirements specification.

4.6.2 TESTING STRATEGIES

Testing is a process of executing a program with the intent of finding an error. A good test case is one that has a high probability of finding an as-yet –undiscovered error. A successful test is one that uncovers an as-yet- undiscovered error. System testing is the stage of implementation, which is aimed at ensuring that the system works accurately and efficiently as expected before live operation commences. It verifies that the whole set of programs hang together. System testing requires a test consists of several key activities and steps for run program, string, system and is important in adopting a successful new system. This is the last chance to detect and correct errors before the system is installed for user acceptance testing. The software testing process commences once the program is created and the documentation and related data structures are designed. Software testing is essential for correcting errors. Otherwise the program or the project is not said to be complete. Software testing is the critical element of software quality assurance and represents the ultimate the review of specification design and coding. Testing is the process of executing the program with the intent of finding the error. A good test case design is one that as a probability of finding a yet undiscovered error. A successful test is one that uncovers a yet undiscovered error. Any engineering product can be tested in one of the two ways:

4.6.2.1 BLACK BOX TESTING

In this testing by knowing the internal operation of a product, test can be conducted to ensure that “all gears mesh”, that is the internal operation performs according to specification and all internal components have been adequately exercised.

It fundamentally focuses on the functional requirements of the software. The steps involved in black box test case design are:

- Graph based testing methods
- Equivalence partitioning
- Boundary value analysis
- Comparison testing

4.6.2.2 WHITE BOX TESTING

This testing is also called as Glass box testing. In this testing, by knowing the specific functions that a product has been design to perform test can be conducted that demonstrate each function is fully operational at the same time searching for errors in each function. It is a test case design method that uses the control structure of the procedural design to derive test cases. Basis path testing is a white box testing.

Basis path testing:

- Flow graph notation
- Cyclometric complexity
- Deriving test cases
- Graph matrices Control

4.7 DEBUGGING

Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages. Use of a static code analysis tool can help detect some possible problems. In the context of software engineering, debugging is the process of fixing a bug in the software. In other words, it refers to identifying, analysing and removing errors.

This activity begins after the software fails to execute properly and concludes by solving the problem and successfully testing the software. Normally the first step in debugging is to attempt to reproduce the problem. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. Also, specific user environment and usage history can make it difficult to reproduce the problem. Normally the first step in debugging is to attempt to reproduce the problem. This can be a non-trivial task, for example as with parallel processes and some Heisenbugs. Also, specific user environment and usage history can make it difficult to reproduce the problem. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. For example, a bug in a compiler can make it crash when parsing some large source file. However, after simplification of the test case, only few lines from the original source file can be sufficient to reproduce the same crash. Such simplification can be made manually, using a divide-and-conquer approach. The programmer will try to remove some parts of original test case and check if the problem still exists. When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear. After the test case is sufficiently simplified, a programmer can use a debugger tool to examine program states (values of variables, plus the call stack) and track down the origin of the problem(s). Alternatively, tracing can be used. In simple cases, tracing is just a few print statements, which output the values of variables at certain points of program execution.

4.8 SOFTWARE TESTING TECHNIQUE

A software testing strategy provides a road map for the software developer. Testing is a set activity that can be planned in advance and conducted systematically. A primary purpose of testing is to detect software failures so that defects may be discovered and corrected. Testing cannot establish that a product functions properly under all conditions, but only that it does not function properly under specific conditions. The scope of software testing often includes

the examination of code as well as the execution of that code in various environments and conditions as well as examining the aspects of code: does it do what it is supposed to do and do what it needs to do. In the current culture of software development, a testing organization may be separate from the development team. There are various roles for testing team members. Information derived from software testing may be used to correct the process by which software is developed. Every software product has a target audience. For example, the audience for video game software is completely different from banking software. Therefore, when an organization develops or otherwise invests in a software product, it can assess whether the software product will be acceptable to its end users, its target audience, its purchasers and other stakeholders. Software testing assists in making this assessment.

For this reason, a template for software testing a set of steps into which we can place specific test case design methods should be strategy should have the following characteristics:

- Testing begins at the module level and works “outward” toward the integration of the entire computer-based system.
- Different testing techniques are appropriate at different points in time.
- The developer of the software and an independent test group conducts testing.
- Testing and Debugging are different activities but debugging must be accommodated in any testing strategy.

4.8.1 INTEGRATION TESTING

Integration testing is a systematic technique for constructing the program structure while at the same time conducting tests to uncover errors associated with. Individual modules, which are highly prone to interface errors, should not be assumed to work instantly when we put them together. In the big-bang approach, most of the developed modules are coupled together to form a complete software system or major part of the system and then used for integration testing.

This method is very effective for saving time in the integration testing process. However, if the test cases and their results are not recorded properly, the entire integration process will be more complicated and may prevent the testing team from achieving the goal of integration testing. Bottom-up testing is an approach to integrated testing where the lowest level components are tested first, then used to facilitate the testing of higher-level components. The process is repeated until the component at the top of the hierarchy is tested. All the bottom or low-level modules, procedures or functions are integrated and then tested. After the integration testing of lower level integrated modules, the next level of modules will be formed and can be used for integration testing. This approach is helpful only when all or most of the modules of the same development level are ready. This method also helps to determine the levels of software developed and makes it easier to report testing progress in the form of a percentage. The problem of course, is “putting them together”- interfacing. There may be the chances of data lost across on another’s sub functions, when combined may not produce the desired major function; individually acceptable impression may be magnified to unacceptable levels; global data structures can present problems.

4.8.2 PROGRAM TESTING

The logical and syntax errors have been pointed out by program testing. A syntax error is an error in a program statement that in violates one or more rules of the language in which it is written. An improperly defined field dimension or omitted keywords are common syntax error. These errors are shown through error messages generated by the computer. A logic error on the other hand deals with the incorrect data fields, out-off-range items and invalid combinations. Since the compiler s will not deduct logical error, the programmer must examine the output. Condition testing exercises the logical conditions contained in a module. The possible types of elements in a condition include a Boolean operator, Boolean variable, a pair of Boolean parentheses A relational operator or on arithmetic expression. Condition testing method focuses on testing each condition in the program the purpose of condition test is to deduct not only errors in the condition of a program but also other an error in the program.

4.8.3 SECURITY TESTING

Security testing is a process intended to reveal flaws in the security mechanisms of an information system that protect data and maintain functionality as intended. Due to the logical limitations of security testing, passing security testing is not an indication that no flaws exist or that the system adequately satisfies the security requirements. Typical security requirements may include specific elements of confidentiality, integrity, authentication, availability, authorization and non-repudiation.[1] Actual security requirements tested depend on the security requirements implemented by the system. Security testing as a term has a number of different meanings and can be completed in a number of different ways. Security testing attempts to verify the protection mechanisms built in to a system well, in fact, protect it from improper penetration. The system security must be tested for invulnerability from frontal attack must also be tested for invulnerability from rear attack. During security, the tester places the role of individual who desires to penetrate system.

4.8.4 VALIDATION TESTING

At the culmination of integration testing, software is completely assembled as a package. Interfacing errors have been uncovered and corrected and a final series of software test-validation testing begins. Validation testing can be defined in many ways, but a simple definition is that validation succeeds when the software functions in manner that is reasonably expected by the customer. Deviation or errors discovered at this step in this project is corrected prior to completion of the project with the help of the user by negotiating to establish a method for resolving deficiencies. Thus, the proposed system under consideration has been tested by using validation testing and found to be working satisfactorily. Though there were deficiencies in the system they were not catastrophic. Software validation is achieved through a series of black box tests that demonstrate conformity with requirement. Validation is intended to ensure a product, service, or system results in a product, service, or system that meets the operational needs of the user. For a new development flow or verification flow, validation procedures may involve modeling either flow and using simulations to predict

faults or gaps that might lead to invalid or incomplete verification or development of a product, service, or system. A set of validation requirements, specifications, and regulations may then be used as a basis for qualifying a development flow or verification flow for a product, service, or system. Additional validation procedures also include those that are designed specifically to ensure that modifications made to an existing qualified development flow or verification flow will have the effect of producing a product, service, or system that meets the initial design requirements, specifications, and regulations; these validations help to keep the flow qualified. It is a process of establishing evidence that provides a high degree of assurance that a product, service, or system accomplishes its intended requirements. This often involves acceptance of fitness for purpose with end users and other product stakeholders. After validation test has been conducted, one of two conditions exist.

- The function or performance characteristics confirm to specifications and are accepted.
- A validation from specification is uncovered and a deficiency created.

4.8.5 USER ACCEPTANCE TESTING

User acceptance of the system is key factor for the success of any system. The system under consideration is tested for user acceptance by constantly keeping in touch with prospective system and user at the time of developing and making changes whenever required. User acceptance testing (UAT) consists of a process of verifying that a solution works for the user. It is not system testing (ensuring software does not crash and meets documented requirements), but rather ensures that the solution will work for the user (i.e., tests that the user accepts the solution); software vendors often refer to this as "Beta testing". This testing should be undertaken by a subject-matter expert (SME), preferably the owner or client of the solution under test, and provide a summary of the findings for confirmation to proceed after trial or review. In software development, UAT as one of the final stages of a project often occurs before a client or customer accepts the new system.

Users of the system perform tests in line with what would occur in real-life scenarios. It is important that the materials given to the tester be similar to the materials that the end user will have. Testers should be given real-life scenarios such as the three most common or difficult tasks that the users they represent will undertake.

CHAPTER 5

CONCLUSION AND FUTURE WORK

The main purpose of the project is to reduce the consumption of time for the faculty when a particular duty information is needed by the collage authority or the faculties need to make their own attendance by their own.

We have created the application that is user friendly. All the stakeholders, faculty and authority can get the required information without delay. In conclusion this project is one of the most crucial strides taken in the development of a student and makes the staff very prompt regarding students and college day to day work. The research is based on the implementation of portal in web development platform. It can be easily implemented in any institution without much modification. Some of the user requirements are user friendliness, data security and data maintainability. All these requirements are included in this project. Each module has its own features and restrictions. In addition to it we have also created a module in which the students can upload their academic certificates through the portal which will be viewed by the counsellor. It helps when the details of particular students are asked by college authority. We have implemented unique security features for each module. The maintenance is done only by authorized person which called as admin user. Thus, the application is more flexible and changes can be made without any difficulty. This paper aid in automating the existing manual system. This is a paperless work. It can be monitored and guarded remotely. It cut down the man power required and provides accurate information. All years together huddled information can be saved and can be accessed at any time. For this reason, the data stored in the repository helps in taking decision by management. So, it is improved to have a Web Based system. All the stakeholders, faculty and authority can get the required information without delay. This system is crucial in the colleges and universities. The limitation can be corrected by incorporating the software on the website to enable it to function as an online application. But this require the user scripting language to code, load the application into the website and also to set the necessary protocol and access method, the software will respond to. Another consideration may be the limitation to accommodate new kinds of information.

As different kinds of information are required by the department, it is possible that the software will become obsolete overtime. Hence in order to be able to store such information, there will be a need for new modifications, addition modules and adjustment of the already existing modules. In future, the system can be extended to conduct various interacting sections for each and every person comes under the college or institution. Also, more discussion forums can be introduced in order to know each moment in college.

5.1 FUTURE WORK

This faculty exam duty Scheduling portal technology can stipulate university growth and development. The scope magnitude of change that are occurring in department today are both exciting and daunting, very particularly we are contemplating how we will manage the many streams of technological innovations pouring into our department and networked information world. Message Communication it holds activity like receiving messages at counsellor and sending messages at administrator side for filling student marks properly. These modules cover all the activities required to manage faculty details regarding the examination duty. Faculty can view and administrator can monitor those details. This is the research report of 'Online faculty exam duty Scheduling portal' which has to design in order to accomplish the aim of this project. The main reason behind this production is to make the spending the time of the officials corresponding the duty allotment for faculties in an efficient way. This portal is very useful for the faculty for monitoring their details from the management. It contains an admin who can update duty details and monitor the faculty staffs, faculties can enter the details of own attendance by the OTP and can view their details regarding the current examination.

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APPENDICES

A. SAMPLE CODE

AdminLogin.php

```
<?php

Session_start();

include "DB.php";

if (isset($_POST["submit"])) {

    # code...

    $sql = "SELECT * FROM adminn WHERE
    AMAIL='{$_POST["mail"]}' AND APASS='{$_POST["password"]}' ";
```

```

$res = $db->query($sql);

if ($res->num_rows>0) {

    # code...

    $row = $res->fetch_assoc();

    $_SESSION["aid"]=$row["AID"];

    $_SESSION["aname"]=$row["ANAME"];

    header("location:index.php");

}

}

?>

```

viewFaculties.php

```

<?php

if (isset($_POST["search"])) {

    # code...

    $sql = "SELECT * FROM faculty WHERE FNAME like
'%" . $_POST["searchInput"] . "%' OR FMAIL like '%" . $_POST["searchInput"] . "%' OR FMOB
like '%" . $_POST["searchInput"] . "%'";

    $res = $db->query($sql);

    if($res->num_rows>0)

```

```

{

echo "<p

class='p-2 w-50 btn btn-success font-weight-bold'

>

{$res->num_rows} Result(s)

</p>";

$j=1;

while ($row = $res->fetch_assoc()) {

    # code...

    echo "<tr>";

    echo "<td>{$j}</td>";

    echo "<td>{$row["FID"]}</td>";

    echo "<td>{$row["FNAME"]}</td>";

    echo "<td>{$row["FMAIL"]}</td>";

    echo "<td>{$row["FMOB"]}</td>";

    echo "<td>{$row["FPASS"]}</td>";

    $j++;

}

}

else

```

```

{
    echo "<p
        class='w-50 btn btn-danger font-weight-bold'
        >
            No record has been found!
        </p>";
}
}
else
{
    $sql = "SELECT * FROM faculty";
    $res = $db->query($sql);
    $i=1;
    while ($row = $res->fetch_assoc()) {
        # code...
        echo "<tr>";
        echo "<td>{$i}</td>";
        echo "<td>{$row['FID']}</td>";
        echo "<td>{$row['FNAME']}</td>";
        echo "<td>{$row['FMAIL']}</td>";
        echo "<td>{$row['FMOB']}</td>";
    }
}

```

```

        echo "<td>{$row["FPASS"]}</td>";

        echo "</tr>";

        $i++;
    }
}

?>

```

Index.php

```

<?php

    if (!isset($_POST["attendance"])) {

        # code...

        echo "Enter your OTP";

    }

    else if(isset($_POST["attendance"])) {

        # code...

        $sql2 = "UPDATE duty SET ISDONE=1 WHERE
OTP='{$_POST["attendanceOtp"]}' AND FACID={$_SESSION["faid"]} ";

        $db->query($sql2);

        echo "Attendance Marked";

    }

?>

```

B. SCREEN SHOTS

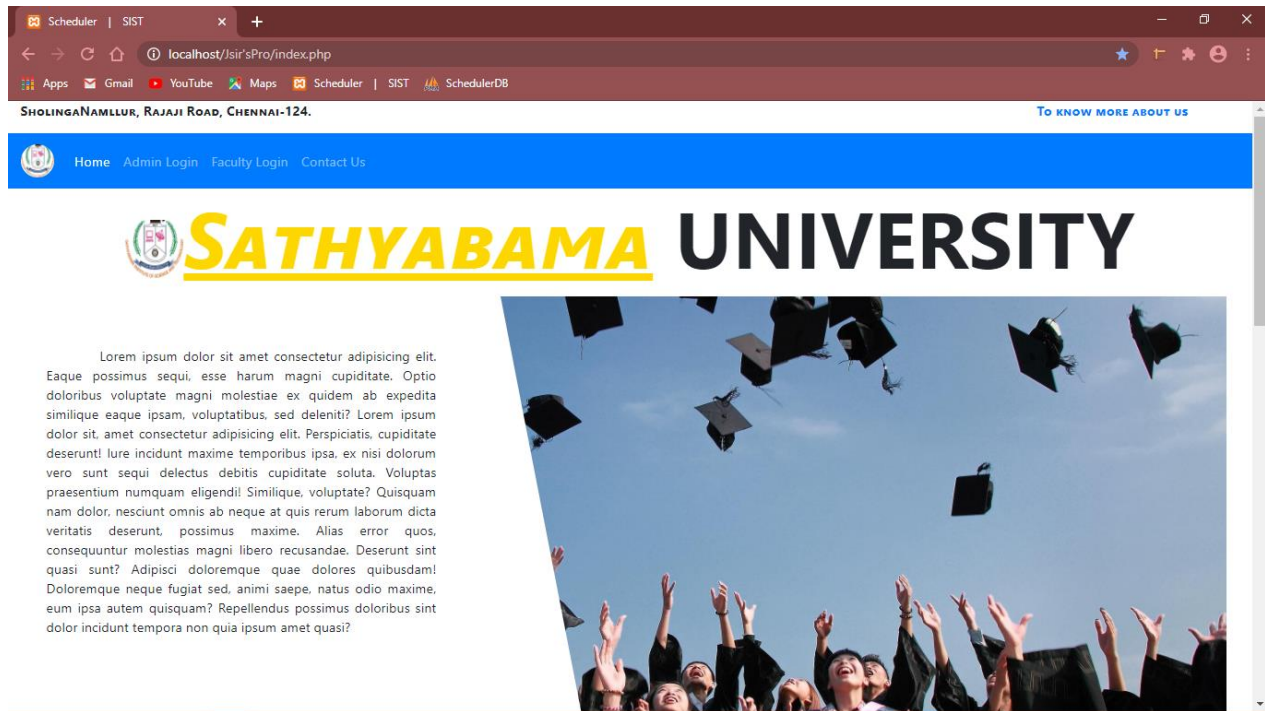


FIGURE 5.1 Homepage

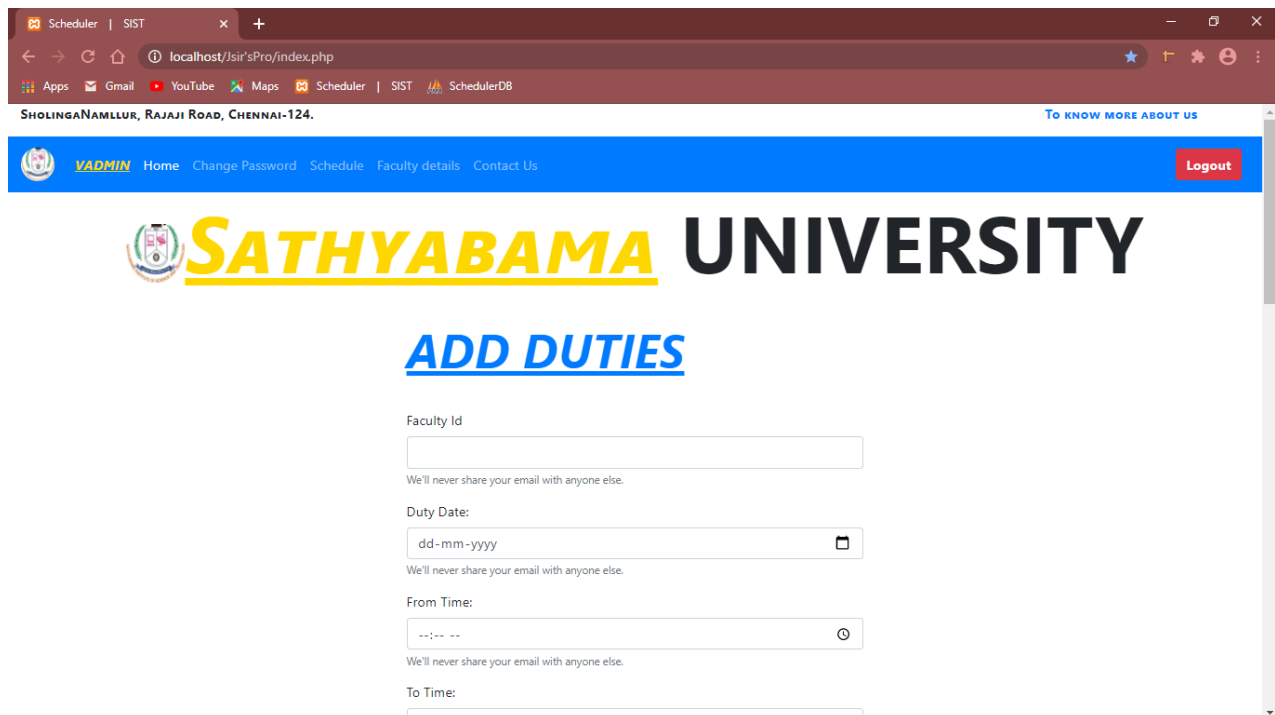


FIGURE 5.2 Admin Homepage(Adding Duties)

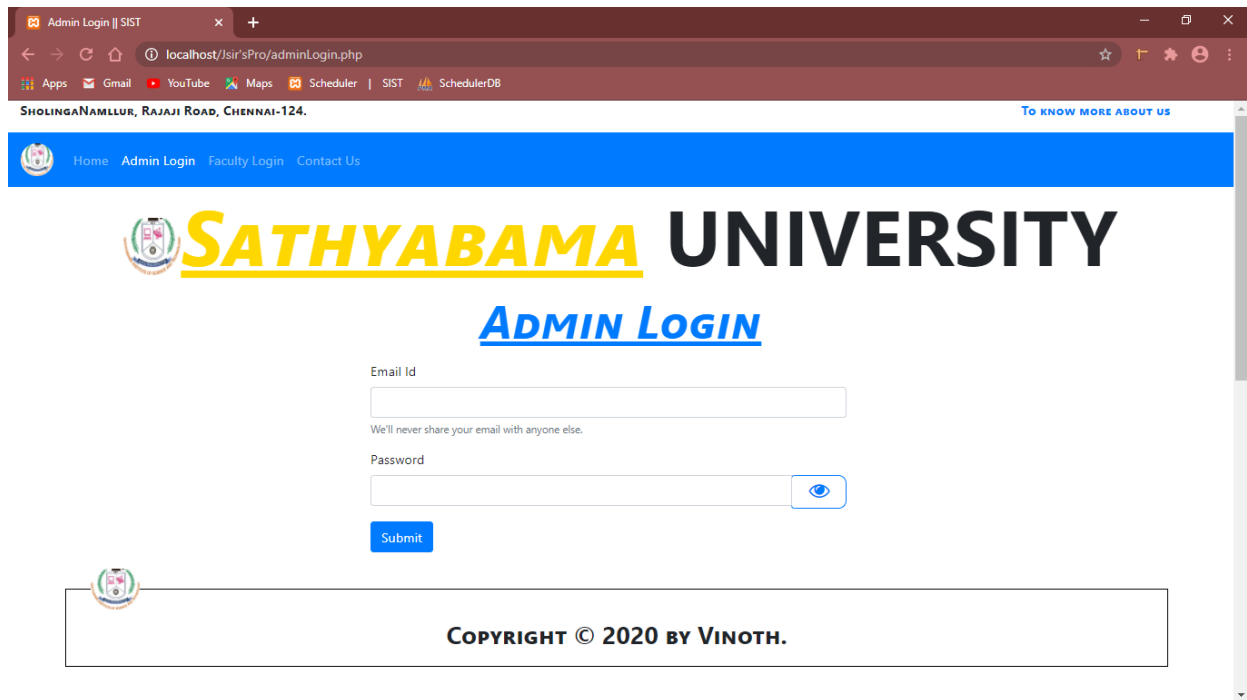


FIGURE 5.3 Admin Login Page

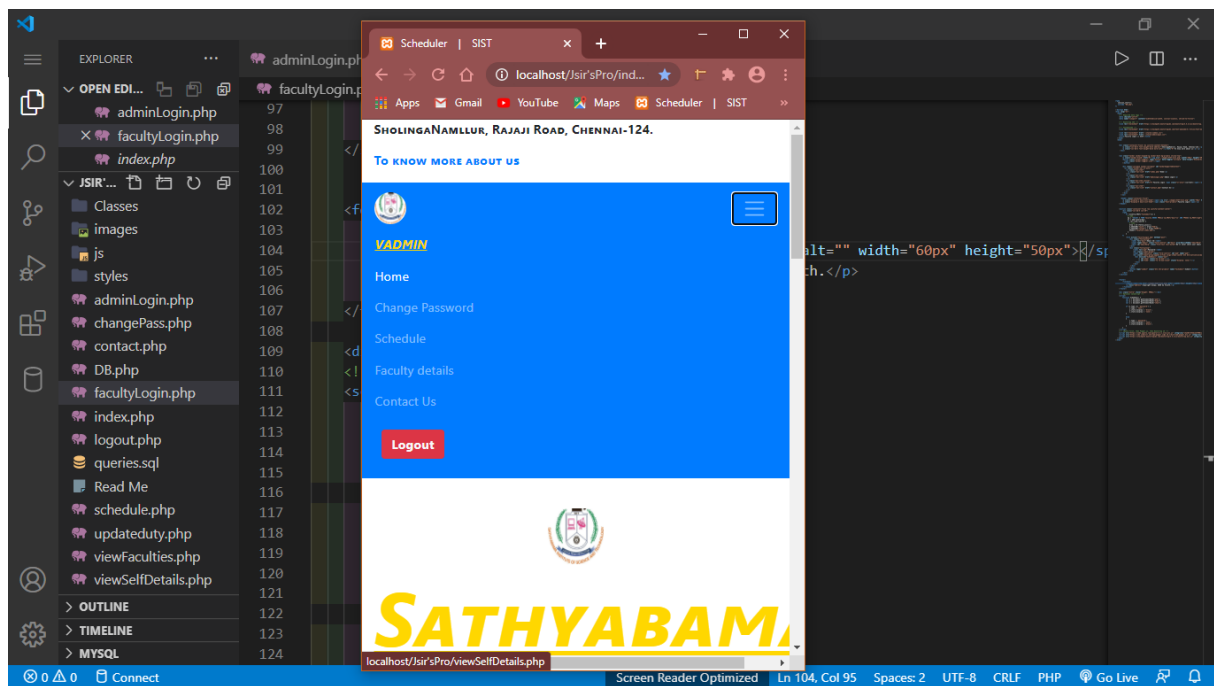


FIGURE 5.4 Admin Homepage (Responsiveness)

SHOLINGANAMALLUR, RAJAJI ROAD, CHENNAI-124.

YADMIN Home Change Password Schedule Faculty Details Contact Us

Name, Date, HallNo Search Reset Logout

SATHYABAMA UNIVERSITY

Sno	Faculty Id	Faculty Name	Date	Time	Hall No	OTP	IsDone
1	1	VINOTH	2020-02-20	22:30:00 - 04:04:00	A26	L73S3	Not Done

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FIGURE 5.5 Schedules listed for Admin

SHOLINGANAMALLUR, RAJAJI ROAD, CHENNAI-124.

YADMIN Home Change Password Schedule Faculty Details Contact Us

Id, Name, Mail, Mobile Search Logout

SATHYABAMA Institute

Sno	Faculty Id	Faculty Name	Mail Id	Mobile Number	Password
1	1	VINOTH	vvinothvijay@gmail.com	9952987466	VINOTH2001
2	2	SANDHYA	saamisishiyar@gmail.com	7358645856	VINOTH2001
3	3	WITT	wittvicky@gmail.com	9840893952	VINOTH2001

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FIGURE 5.6 Faculties list for admin