A MINI PROJECT REPORT ON

INFRASTRUCTURE ALLOCATION

SUBMITTED TO THE SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE IN THE PARTIAL FULFILLMENT FOR THE AWARD OF THE DEGREE

Of

BACHELOR OF ENGINEERING

IN

INFORMATION TECHNOLOGY

BY

MANDAR SADAFALE	T150058613
RASHMI SHEWALE	T150058628
SHIVANI RAJMANE	T150058632
SHUBHAM MAPARA	T150058577

UNDER THE GUIDANCE OF

PROF. J. K. Kamble

DEPARTMENT OF INFORMATION TECHNOLOGY

PUNE INSTITUTE OF COMPUTER TECHNOLOGY, PUNE.

S. No. 27, Dhankawadi, Pune, Satara Road, Pune - 411043.

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CERTIFICATE

This is to certify that the project report entitled

INFRASTRUCTURE ALLOCATION

Submitted by

MANDAR SADAFALE	T150058613
RASHMI SHEWALE	T150058628
SHIVANI RAJMANE	T150058632
SHUBHAM MAPARA	T150058577

is a bona fide work carried out by them under the supervision of Prof. J. K. Kamble and it is approved for the fulfillment of the requirement of Savitribai Phule Pune University for the award of the Degree of Bachelor of Engineering (Information Technology)

This project report has not been earlier submitted to any other Institute or University for the award of any degree or diploma.

Prof. J. K. Kamble

Internal Guide

Department of Information Technology

Prof.R.B.Murumkar

Subject Co-ordinator

Department of Information Technology

External Examiner

Date :

Place:

Date:

Abstract

We often come across situations where we have to deal with procedures that grants access to several parts of the infrastructure. Let it be a student or a staff. This includes from writing the permission letter to request the associated staff members(eg: in case of permission for LAB we need to coordinate with HOD for the permission as well as the lab assistant and in some cases even the principal sir) for the infrastructure. This results in time delay and inefficiency.In our proposed system we are trying to make this procedure totally efficient. The system results in reducing the manual work of writing permissions letters and getting it granted. The user will simply register himself/herself, will search for the required infrastructure, will select the best suited time slot and will request for its access. The system provides the access to the infrastructure on the First-Come-First-Serve basis. After the request has been made it is the responsibility of the associated staff to give approval. If permission is granted by the staff ,the selected infrastructure will be allocated for the particular time slot and will appear occupied. The history of infrastructure used will be maintained in the database for later use.

Acknowledgement

Every project big or small is successful largely due to the effort of a number of people who have always given their valuable advice. I sincerely appreciate the inspiration, support and guidance of all those people who have been instrumental in making this project a success.I would also like to thank all the faculty members of P.I.C.T for their critical advice and guidance without which this project would not have been possible. First of all, we would like to thank our Head of Department **Mr. Sonkamble** for mentoring us to achieve perfection in the best way and bringing out the best in us and for providing us with all the facilities needed to proceed with the project.We express our sincere thanks to our respected guide **Mr. J. K. Kamble**, **Mr. R. B. Murumkar** for their kind Cooperation and timely guidance for Presenting the Report well in time and thanks to for constant guidance and his boundless cooperation and help extended for this Project, all through our work. Then, we would like to thank our lab assistants for being present at all times and catering us with any help needed. Also, we would like to thank all our friends for their constant motivation and uplifting us during the tough phases of the project. Finally, we would like to thank all group members for their hard-work and sincerity towards the project. All their efforts are nothing less than commendable.

Mandar Sadafale

Rashmi Shewale

Shivani Rajmane

Shubham Mapara

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1. Introduction

1.1 Purpose

The purpose of this system is to make the allocation of Infrastructure (i.e Labs, Seminar hall, Auditorium) automated. This reduces manual work of the respective Event Coordinator. Maintaining the allocation of Infrastructure is easy. It also helps to view the timings of the Infrastructure and book accordingly.

1.2 Scope

The scope of the project is limited to the PICT college only. The teachers of the PICT college can request infrastructure of the college for an event. The assistant can confirm or reject the requests. Also the administrator can perform adding assistant for particular infrastructure.Teacher can view the status(Pending,Confirmed,Rejected) of the requested infrastructure by viewing the history. Following modules are created:

1. Teacher registration
2. Searching infrastructure(Labs/seminar hall/Auditorium) by particular date.
3. Registration form for requesting.
4. Confirming or rejecting requests.
5. Displaying Status.
5. Report Generation.

1.3 Definition, Acronym and Abbreviations

1.3.1 Java Server Pages

JSP technology is used to create dynamic web applications. JSP pages are easier to maintain then a Servlet.JSP pages are opposite of Servlets as a servlet adds HTML code inside Java code, while JSP adds Java code inside HTML using JSP tags. JSP pages are converted into Servlet by the Web Container. The Container translates a JSP page into servlet class source(.java) source(.java) file and then compiles into a Java Servlet class.

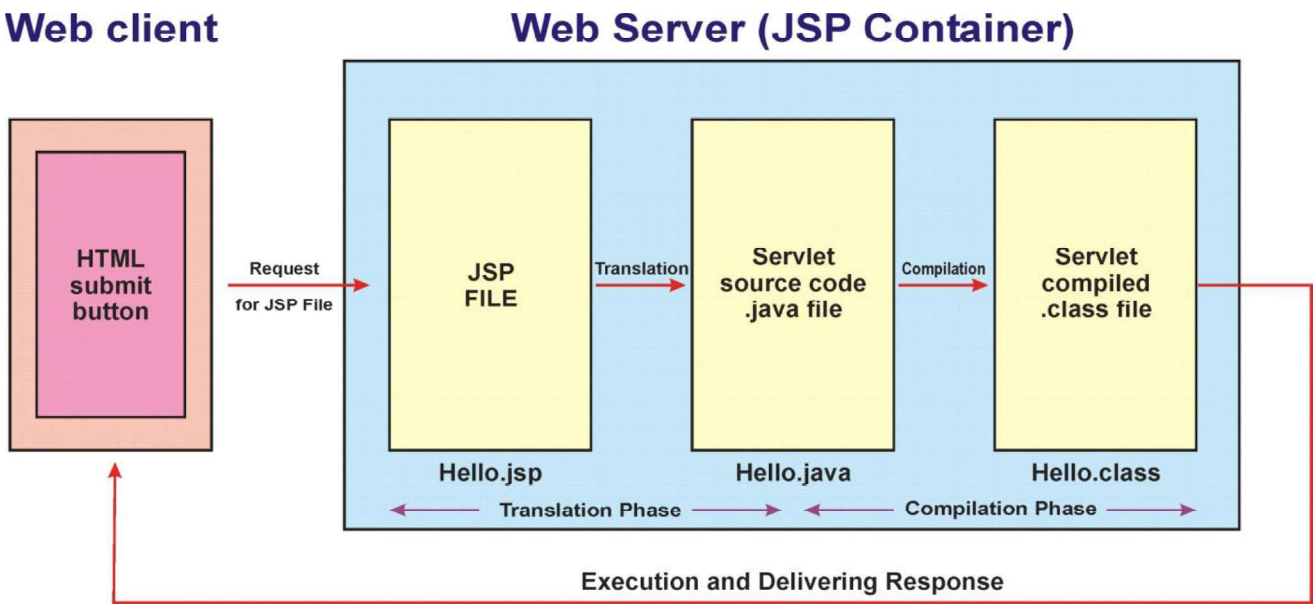


Fig : 1.3.1.1

1.3.2 Client- Server Architecture

1. The user goes to a JSP page and makes the request via internet in user's web browser.
2. The JSP request is sent to the Web Server.
3. Web server accepts the requested.jsp file and passes the JSP file to the JSP Servlet Engine.
4. If the JSP file has been called the first time then the JSP file is parsed otherwise servlet is instantiated. The next step is to generate a servlet from the JSP file. The generated servlet output is sent via the Internet form web server to users web browser.
5. Now in last step, HTML results are displayed on the users web browser.

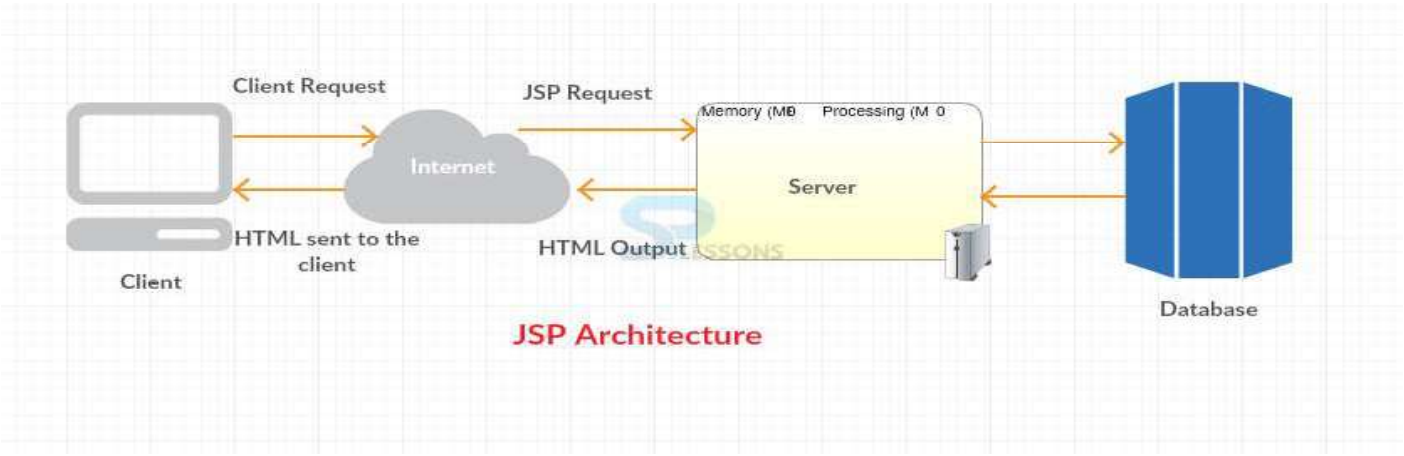


Fig: 1.3.2.1

1.4 References

1. The Complete Reference JSP: Phil Hanna
2. The Complete Reference Java 2: Patrick Naughton and Herbert Schildt
3. www.W3Schools.com
4. www.stackoverflow.com
5. www.quora.com

1.5 Developer's Responsibilities: An Overview

Perform project design and development activities according to customer specifications. Work with team mates in developing project plan, budget and schedule. Coordinate with management in preparing project proposals and contractual documents. Track project progress regularly and develop status reports to management. Ensure that project is completed within allotted budget and timelines. Follow policies and safety regulations for operational efficiency. Research and recommend new technologies to carry out project development tasks. Provide assistance to other Developers, perform peer reviews and provide feedback for improvements. Develop cost reduction initiatives while maintaining quality and productivity.

2. General Description

2.1 Product Function Perspective

The working of the application is totally based on the credentials being provided by the users. The logins typically consists of different privileges and constraints respectively. The administrators are allowed to add or delete the particular assistant. Teachers can get the availability of the infrastructure searching by date. The assistant gets the request for his lab/seminar hall and can confirm or reject the same. The teacher can view the status of the requests made ,if the request is been confirmed by the respective assistant then the confirmation letter is generated.

2.2 User Characteristics

Three users:

1.Admin :
- 1.1. Adding assistant.
- 1.2. Deleting assistant.
- 1.3. Editing assistant.

2.Teachers :
- 2.1. Searching, and booking the infrastructure.
- 2.2. Requesting the infrastructure.
- 2.3. Updating personal details.
- 2.4. View history of requested lab.

3.Assistant
- 3.1. Accepting / Rejecting the request.
- 3.2. Edit Lab / Seminar Hall / Auditorium details.
- 3.3. Updating personal details.
- 3.4. Inserting new available slots.

2.3 General Constraints

1. Searching available infrastructure.
2. Requesting the infrastructure.
3. Registration.
4. Accepting / Rejecting requests.
5. Confirmation letter.

2.4 Assumptions and Dependencies

1. The assistant is allocated to respective infrastructure after admin login only. So adding new assistant is dependant on admin.

2. Users are assumed to be aware of the resources in the particular infrastructure.

3. Users are assumed to have a fair knowledge about checking the status of the requests after registration.

4. Lab is allocated only after requesting of teacher. So status is depend on teacher.

3. Specific Requirements

3.1 Input and Output

Input:

1. Login Credentials.
2. Student coordinate information for registration

Output:

1. Confirmation Letter after confirmed the lab.
2. Displaying the requests.

3.2 Functional Requirements

3.2.1 ID: FR11

1. Teacher login in order to request a lab for event and to see status related to confirmation.

2. Lab Assistant login in order to confirm or reject request and to add new available slots.

3. Administrator login in order to add new record of lab assistant and also update the record.

3.2.2 ID: FR12

Security Requirements

1. Teacher can request for an event but can not generate confirmation letter without acceptance of assistant.
2. Only assistant can reject or confirm the request made for his/her infrastructure.
3. Only admin can insert new assistant.
4. Providing student coordinate information so that in case of any damage that particular student is responsible.

3.3 Functional Interface Requirements

Three Interfaces:

1. Users Interface:
    1.1. Search Infrastructure according to date.
    1.2. Make a request.
    1.3. Fill registration form.

2. Assistant Interface:
    2.1 Accept / Reject request
    2.2 Insert new available slot.

3. Admin Interface:
    3.1 Add / Remove Assistant
    3.2. Edit Assistant
    3.3. Allocate infrastructure to respective assistant.

3.4 Performance Constraints

3.4.1 Response time

ID: QR1
TAG: ResponseTime
GIST: The fastness of the search
SCALE: The response time of a search
METER: Measurements obtained from 1000 searches during testing.
MUST: No more than 2 seconds 100% of the time.
WISH: No more than 1 second 100% of the time.

3.4.2 System dependability

ID: QR2
TAG: SystemDependability
GIST: The fault tolerance of the system.
SCALE: If the system loses the connection to the Internet or to the GPS device or the system gets some strange input, the user should be informed.
METER: Measurements obtained from 1000 hours of usage during testing.
MUST: 100% of the time.

3.5 Design Constraints

Programming language

JSP, Java, PL/SQL

Operating system or platforms supported

1.Windows
2.Linux
3.Mac OS

Use of a specific library or framework

1.Intellij IDEA
2. JDBC-ODBC Bridge
3. javax.Servlet library
4. javax.mail library

3.6 Acceptance criteria

Acceptance criteria are a formal list that fully narrates user requirements and all the products scenarios put into the account. Acceptance criteria plainly describe conditions under which the user requirements are desired thus getting rid of any uncertainty of the client's expectations and misunderstandings.

1. Administrator can add assistant and allocate him infrastructure by entering the following information about the assistant:
    a. MIS_ID
    b. Assistant_name
    c. Mobile Number
    d. Mail ID
    e. Password
2. The system notifies the teacher that request his/her request has been confirmed or rejected.

4. System Design

4.1 ER Model

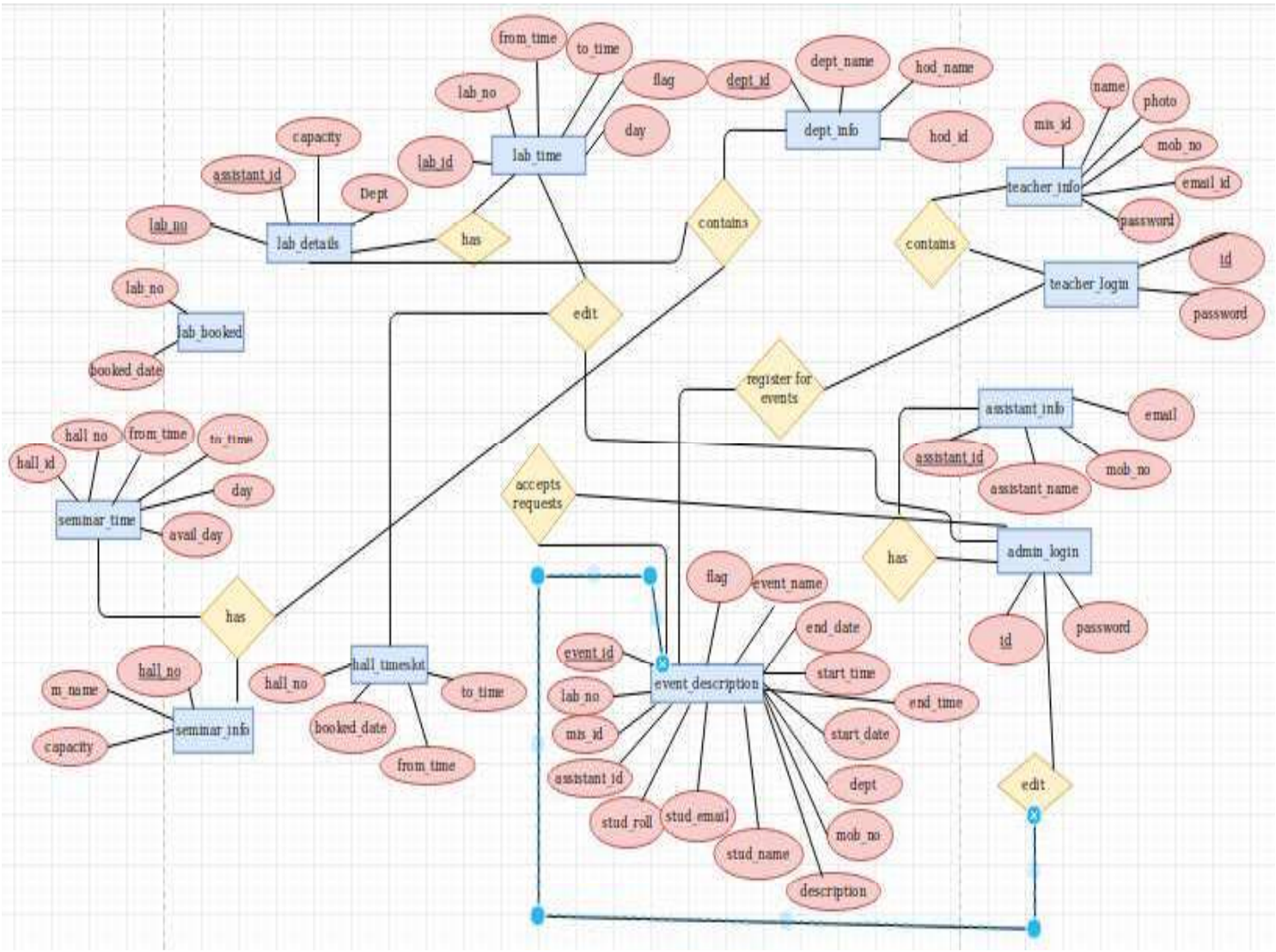


Fig : 4.1.1

4.2 Schema / Table Description

1.assistant_info :

The table contains information about the assistant of the particular infrastructure. This table is used to view the infrastructure details such as Number, capacity, assistant's mobile number etc .

2. dept_info :

The table contains information about the respective department such as department number, name of the department, id of Hod, name of HOD, email of HOD.

3. event_description :

The table contains information about the event conducted and the infrastructure allocated to it. It also contains the information about the student coordinator and the remark.

4. hall_booked :

When a Seminar hall / Auditorium is requested and assistant accepts the request the entry is made into this table which contains requested hall number and the date and time for which the same is requested.

5. hall_timeslot :

The table is same as hall_booked table the only difference is the table stores the time in the slots of an hour.

6. lab_booked :

When a Lab is requested and the assistant accepts the request the entry is made into this table which contains requested lab number and the date and time for which the same is requested.

7. lab_details :

The table contains information about the lab such as lab number, id of the assistant, capacity of the lab, the id of the department .

8. lab_time :

The table contains details when the lab is available so that the teacher can view the details of available labs accordingly.

9. seminar_info:

The table contains details such as hall number, assistant name and id , capacity.

10. seminar_time:

The table contains details when the seminar hall / auditorium is available so that the teacher can view the details of available seminar hall / auditorium accordingly.

11. teacher_info :

The table contains information about the teacher such as mis_id ,name of the teacher, monile number, email id of the teacher, password .

12. teacher_login :

When the teacher registers himself/herself the password and the id of the respective teacher is stored in this table.

4.3 System Flow chart / Activity diagram

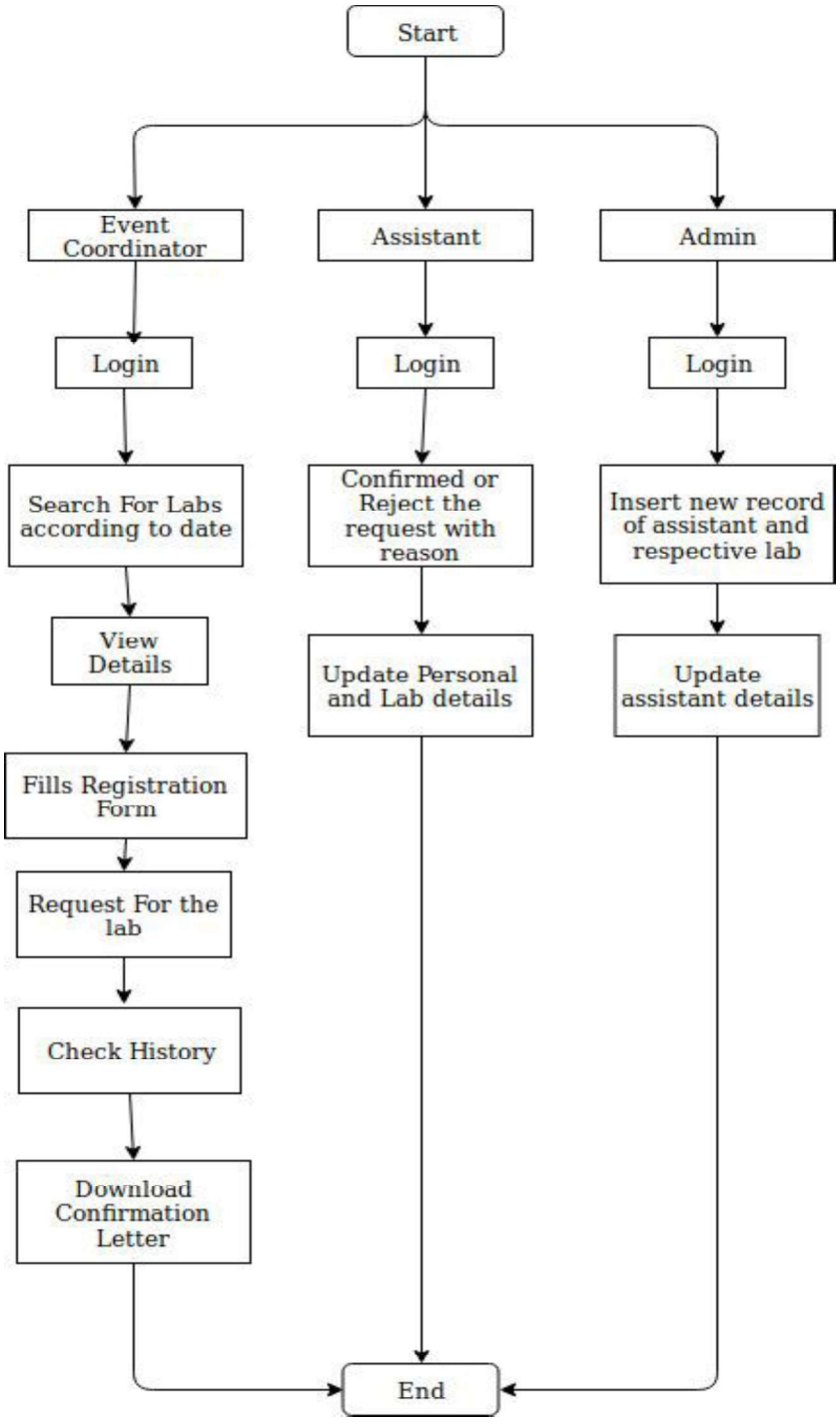
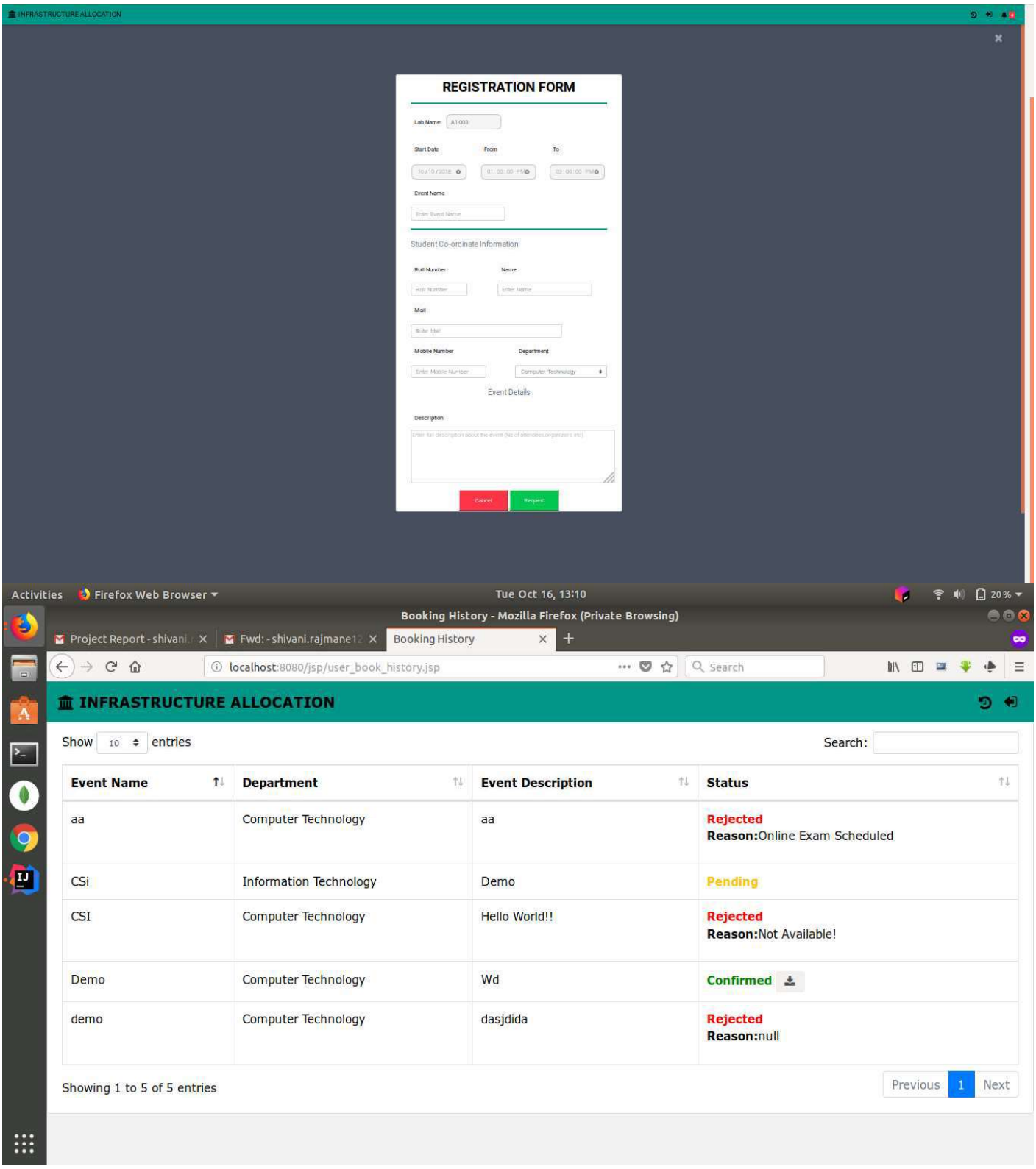


Fig : 4.3.1

4.4 User Interface Design



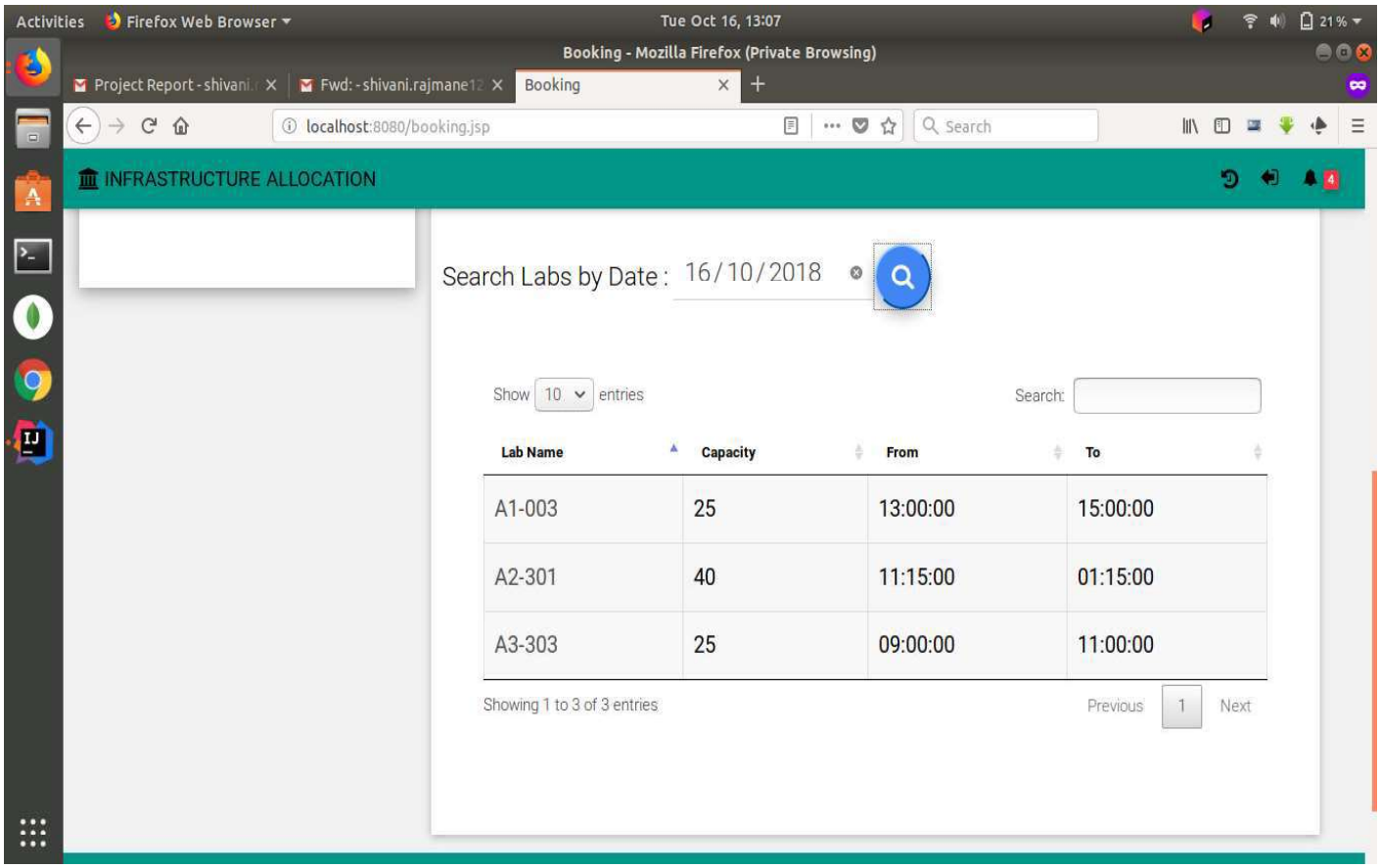
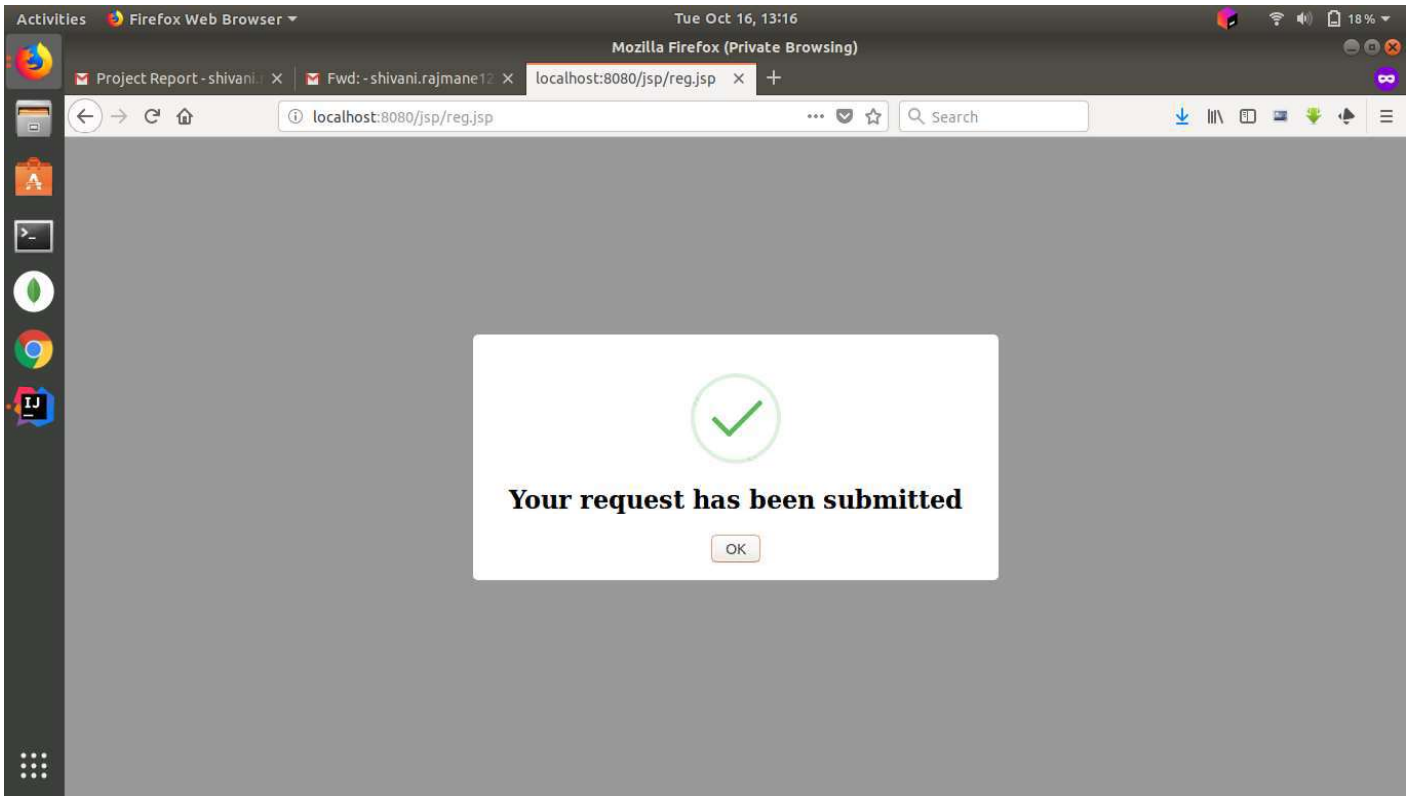

Activities
Firefox Web Browser
Tue Oct 16, 13:07
Booking - Mozilla Firefox (Private Browsing)
Project Report - shivani
Fwd: - shivani.rajmane12
Booking
localhost:8080/booking.jsp
Search
INFRASTRUCTURE ALLOCATION
Search Labs by Date : 16/10/2018
Show 10 entries
Search:
Lab Name
Capacity
From
To
A1-003
25
13:00:00
15:00:00
A2-301
40
11:15:00
01:15:00
A3-303
25
09:00:00
11:00:00
Showing 1 to 3 of 3 entries
Previous
1
Next

Fig : 4.4.1

4.5 Error Messages / Alerts Design



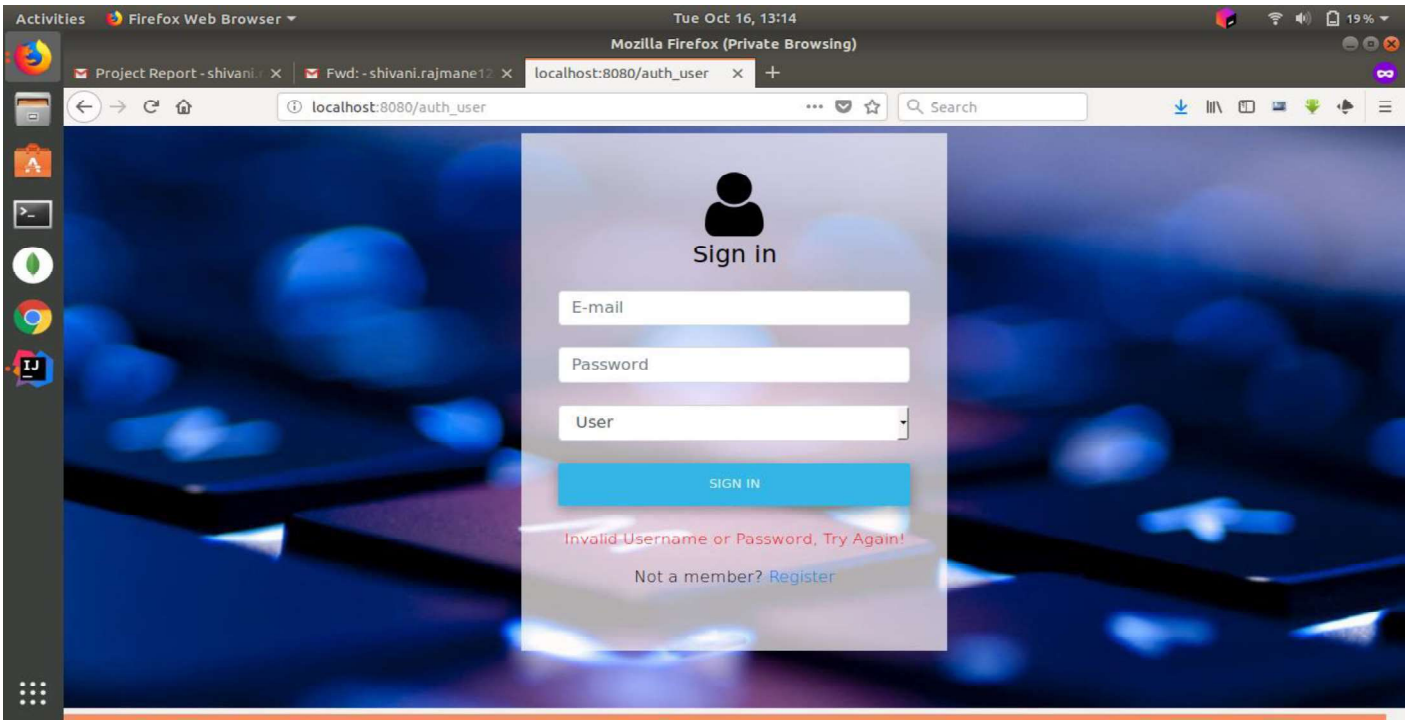


Fig : 4.5.1

4.6 Test Case Design : V Model

One of the major handicaps of waterfall STLC model was that, defects were found at a very later state of the development process, since testing was done at the end of the development cycle. It became very challenging and costly to fix the defects since it were found at a very later stage. To overcome this problem, a new development model was introduced called the “V Model” V model is now one of the most widely used software development process. Introduction of V model has actually proved the implementation of testing right from the requirement phase. V model is also called as verification and validation model. To understand the V model, let’s first understand what is verification and validation
in software.
Verification: Verification is a static analysis technique. In this technique testing is done without executing the code. Examples include – Reviews, Inspection and walkthrough.
Validation: Validation is a dynamic analysis technique where testing is done by executing the code. Examples include functional and non-functional testing techniques.

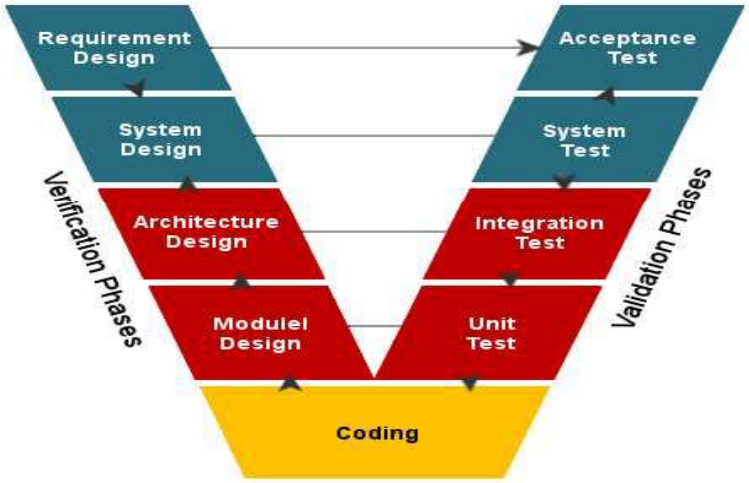


Fig: 4.6.1

5. System Implementation

5.1 Hardware and Software Platform description

- Hardware Requirements :
  1. Ram 4GB.
  2. 512 GB Hard Disk (Minimum)
  3. Screen size : Variable screen size is handled by application.

- Software Requirements
  1. Java JDK
  2. Mysql Database
  3. Tomcat
  4. Command Prompt for Remote access.

5.2 Tools used

1. Intellij IDEA Ultimate
2. MySQL

5.3 System Verification and Testing (Test Case Execution)

Table : 5.3.1

Sr.No	Test Case Id	Test Objectives	Prerequi -sites	Steps	Input Data	Expected Results	Actual Results	Results
1	TC001	Login Button Functionality	Website should be loaded properly	Enter user id and password	User Id and password	Should redirect to the next page	Successfully redirected	Pass
2	TC002	Login Page Functionality	Website should be loaded properly	Enter user id and password	User id and password	Should show error if wrong id or password entered	Showed wrong input status	Pass

3	TC003	Signup page	Load the sign up page	-	Enter the correct details as per required fields	Show dialog box and redirect to login page	Successfully redirected	Pass
4	TC004	Details of infrastructure should be displayed when searched by date	Load the labs	-	Enter the correct date	Show the table with the available infrastructure.	Successfully displayed	Pass
5	TC005	View the status of requests made.	Load the history	-	-	Show the status according to pending/confirmed/rejected requests	Successfully displayed	Pass

5.4 Future work / Extension

1.Can be used by Training and placement centre.
2. Can be extended to classrooms also.

6. Conclusion

The objective of the system is to automate the procedure of requesting and confirming the infrastructure instead of doing the manual work. This would help to reduce time, cost in terms of printing papers. The information related to available time of the infrastructure can be seen prior and can be planned accordingly.