

TESTING OF GEM HOSPITAL COIMBATORE SWE2005-SOFTWARE TESTING SLOT-B2+TB2

J-COMPONENT PROJECT

GROUP PROJECT
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UNDER GUIDANCE OF PRASANNA M

1. PROBLEM STATEMENT

Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the hospital management infrastructure. Often information (on forms) is incomplete, or does not follow management standards.

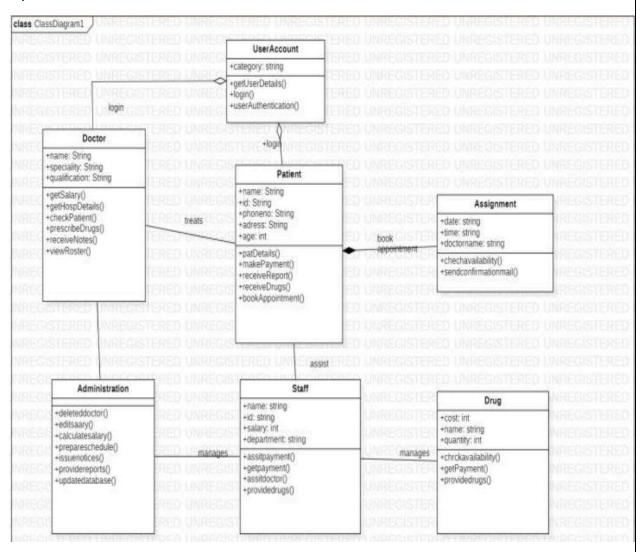
- Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost.
- A significant part of the operation of any hospital involves the acquisition, management and timely retrieval of great volumes of information.
- A user-friendly system allowing easy booking of consultation and a method of payment for the same is not readily available.
- The patient might show fear if he is uncertain about the qualification of the doctors that are treating him, this could be avoided by allowing him to find a doctor of his liking and see into their details.
- The patient is not able to look into patient details regarding his insurance or how will he reach the hospital.
- The patient should be able to look into the department that the hospital has, at the same time which facilities it provides All of this information must be managed in an efficient and cost wise method so that an institution's resources may be effectively utilized SMS will automate the management of the hospital making it more efficient and error free. It aims at standardizing data, consolidating data ensuring data integrity and reducing inconsistencies

Modules for the system:

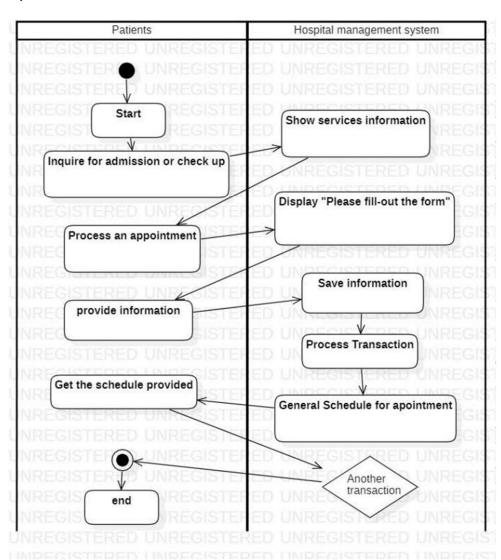
- 1). Consultation module
- 2).Payment module
- 3). Find doctor module
- 4). Patient details module
- 5). Department/Facilities module

2. UML DIAGRAMS

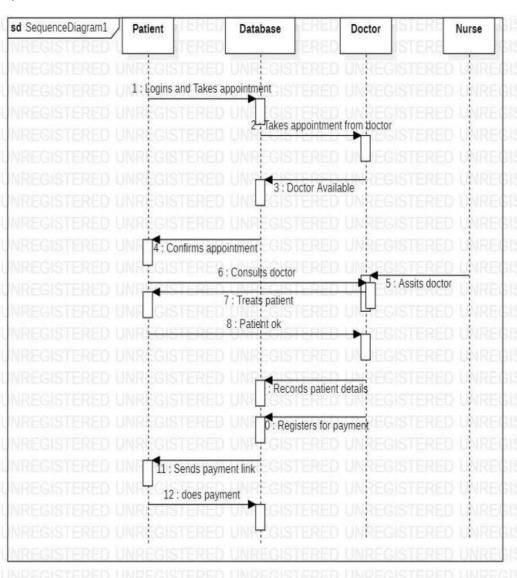
A) CLASS DIAGRAM



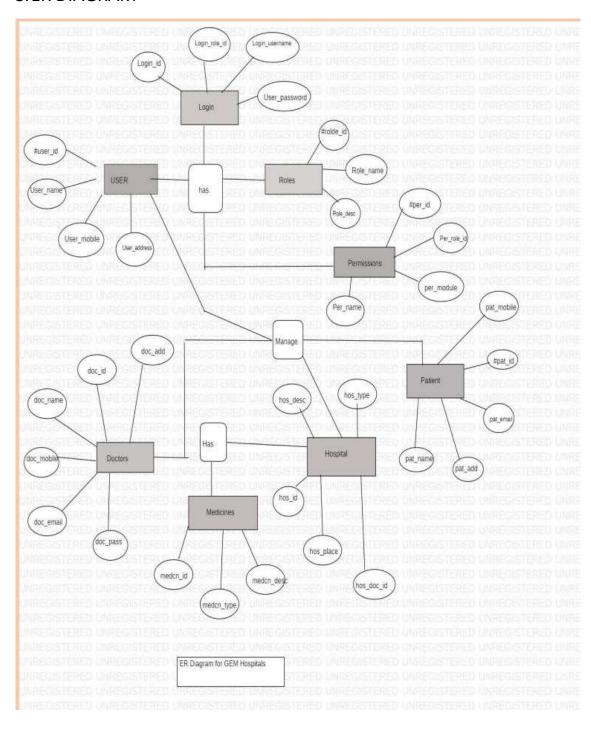
B) ACTIVITY DIAGRAM



C) SEQUENCE DIAGRAM



3.ER DIAGRAM



Database tables

User: This table is responsible for user related details like his name, id, mobile number and address

Login: This table contains login information. Each user HAS login details

Roles: This table contain roles description and name. Each user HAS some role

Permission: This table indicated the permission user might have. Each use HAS

some role

Patient: This table contains information regarding the patient. Patients are MANAGED by the doctors and hospitals

Doctors: This table contains information regarding the doctor. Doctor are MANAGED by the hospital and MANAGE the patients

Hospital: This table has the hospital details. The hospital MANAGES its doctors and patients and HAS medicines that it provides its patients.

Medicines: This table has information about the medicine and its type. It is owned by the hospital.

4 TEST PLAN DOCUMENT

4.1. TEST PLAN IDENTIFIER

GEM HOSPITAL COIMBATORE WEBSITE- V 1.0

4.2. INTRODUCTION

The main purpose of the test plan for the Gem Hospital Coimbatore Website is to discuss the testing details of the use cases of the Gem Hospital Coimbatore Website. The software project test plan also describes the objective, scope and approach of the software testing effort for the Gem Hospital Coimbatore Website project. The test plan for the Gem Hospital Coimbatore Website also indicates the personnel responsible for each task and also specifies the risks associated with the test plan.

4.2.1 OBJECTIVES

The main objectives of the test plan for the Gem Hospital Coimbatore Website are as follows:

- To identify the features of the system that will be tested.
- To identify and define all the activities necessary to prepare for and conduct the testing process on the Gem Hospital Coimbatore Website
- To define the pass/fail criteria for each item that will be tested
- To identify the deliverables of the testing phase.
- To define any suspension criteria and resumption techniques
- To discuss the testing techniques being used to test the Gem Hospital Coimbatore Website.

4.2.2 REFERENCES

The following references have been used in the preparation of the Test Plan document for the Gem Hospital Coimbatore Website:

- IEEE Standard for Software Test Documentation Std 829-1998
- The Way of the Web Tester
- https://www.wearedevelopers.com/magazine/how-to-create-a-testplan-for-software-testing
- gem hospitals Coimbatore official website

4.2.3 DEFINITIONS

The following are some of the terms and definitions that are related to the test plan of the Gem Hospital Coimbatore Website:

- Pass/Fail criteria: Decision rules that are used to determine whether a software item passes or fails a test.
- Test: A collection of one or more test cases
- Test Item: A software item that is an objective of testing.
- Test Plan: A document describing the scope, approach, resources and schedule of the intended testing activities.
- Test Summary Report: A document summarizing the testing activities and results.
- Testing: The process of analysing a software item to detect the differences between the existing and required conditions.

4.3. TEST ITEMS

This section of the test plan lists all the items of the Gem Hospital Coimbatore Website project that will be tested:

- Book online consultation
- Payment
- Search doctor's details
- Search facility's details
- Search department details
- Get patients information
- Search events

4.4. APPROACH

This section of the test plan describes the overall approach for testing the Gem Hospital Coimbatore Website project. The approach followed for testing the Gem Hospital Coimbatore Website ensures that the major features of the

project are adequately tested. All testing will be done with the help of selenium tool and Junit tool.

4.4.1 UNIT TESTING

The Unit Testing is a test that tests each single module of the software to check for errors. This is mainly done to discover errors in the code of the Gem Hospital Coimbatore Website. The main goal of the unit testing would be to isolate each part of the program and to check the correctness of the code. In the case of the Gem Hospital Coimbatore Website, all the web forms and the other webpages will be tested. There are many benefits for this unit testing:

- The unit testing facilitates change in the code.
- It allows testing to be done in a bottom up fashion.

At the same time, unit testing has some disadvantages such as, it might not identify each and every error in the system.

4.4.2 INTEGRATION TESTING

In Integration Testing, the individual software modules are combined and tested as a whole unit. The integration testing generally follows unit testing where each module is tested as a separate unit. The main purpose of the integration testing is to test the functional and performance requirements on the major items of the project.

All the modules of the project developed individually would be combined together and tested as a whole system in the integration testing.

4.4.3 ACCEPTANCE TESTING

This testing is generally performed when the project is nearing its end. This test mainly qualifies the project and decides if it will be accepted by the users of the system. The users or the customers of the project are responsible for the test.

4.4.4 SYSTEM TESTING

The system testing is mainly done on the whole integrated system to make sure that the project that has been developed meets all the requirements. The test cases for the system testing will be the combination of unit and integration tests.

4.5. TEST CASES

The following are the test cases for the Gem Hospital Coimbatore Website:

- 4.5.1 TEST CASE 1 booking consultation
- •Incorrect Input: Incorrect username, email id, phone no., no selection of doctors or department, location.
- Pass Criteria: An appropriate message should be generated to indicate that an invalid entries have been done has been typed.
- •Correct Input: The correct input would be a valid name, email id, phone no. with some selection of city, department and doctor. Filling symptoms is not mandatory
- Pass Criteria: The user should be directed to the webpage which tells the customer about the payment info
- 4.5.2 TEST CASE 2 Payment
- •Incorrect Input: wrong selection of payment option, invalid user details, OTP.
- Pass Criteria: An appropriate message should be generated to the user saying that he has entered the details (like card no., CVV) and the number of tries left.
- •Correct Input: The correct input would a correct format entered by the customer into the input fields and the user is shown a pop up which tells him that the payment is successful
- Pass Criteria: The pass criteria for this test case would be a successful payment with a message that tells the user that the payment has been successful
- 4.5.3 TEST CASE 3 search doctor's details
- •Incorrect Input: not navigating to the 'our doctors' button
- Pass Criteria: Treated with all the required information regarding the required doctor.
- Correct Input: navigating through 'our doctor' section to the required doctor.
- Pass Criteria: if the required doctor details are shown then the test case has been passed
- 4.5.4 TEST CASE 4 search facility's details
- •Incorrect Input: not navigating to the 'facility' button

- Pass Criteria: Treated with all the required information regarding the required facility and its availability.
- •Correct Input: navigating through 'facility' section to the required facility.
- Pass Criteria: if the required facility details are shown but they are there then the test case has been passed
- 4.5.5 TEST CASE 5 Search department details
- •Incorrect Input: not navigating to the 'departments' button
- Pass Criteria: Treated with all the required information regarding the required department
- Correct Input: navigating through 'department' section to the required department.
- Pass Criteria: if the required department details are shown but they are there then the test case has been passed
- 4.5.6 TEST CASE 6 Get patients information
- •Incorrect Input: not navigating to the 'Patient's information' button
- Pass Criteria: Treated with all the required information of the patient in concern.
- •Correct Input: navigating through 'Patient's information' section to the required patient.
- Pass Criteria: if the required details of the patient are shown but they are there then the test case has been passed
- 4.5.7 TEST CASE 7 search events
- Incorrect Input: special characters not recognized by the search bar
- Pass Criteria: events related to the searched terms pop up.
- •Correct Input: keywords that might relate to the event of concern.
- Pass Criteria: if the even of concern is available and found the test case is passed.
- 4.6. PASS OR FAIL CRITERIA

The test cases executed on the Gem Hospital Coimbatore Website will pass if they meet the specific requirements mentioned in the Vision document of the project. A test case is said to fail, if the desired functionality is not satisfied by the system.

4.7. SUSPENSION CRITERIA AND RESUMPTION REQUIREMENTS

4.7.1 SUSPENSION CRITERIA

Testing for all the dependant features will be suspended if a test case fails. The failed testcase will be logged onto the test log which contains the description for the error.

4.7.2 RESUMPTION REQUIREMENT

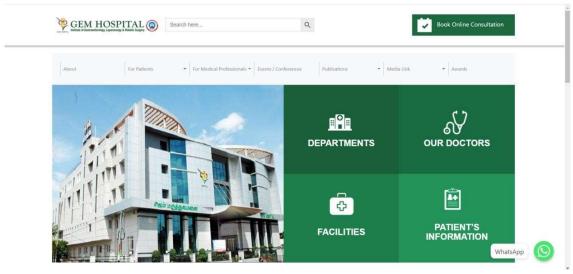
The test cases which are not dependent on the case where the bug is reported will be executed in parallel with the bug fixing. Once the failed test case has been taken note of and has been identified and fixed then the testing for the failed test case will resume.

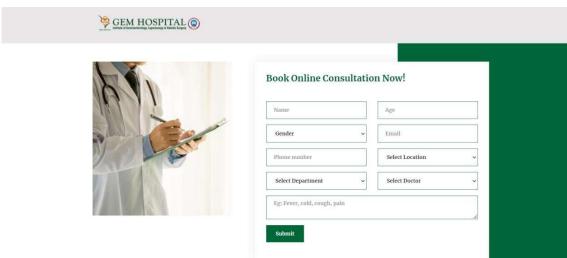
4.8. TEST DELIVERABLES

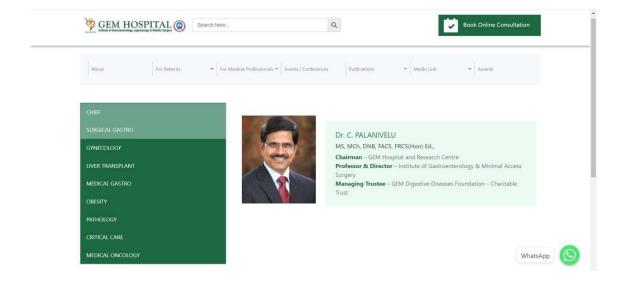
The following documents will be produced after the testing phase for the Gem Hospital Coimbatore Website has been completed.

- •Test Plan
- Test Cases
- Test Log

5. UI of the site















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GEM Hospital & Research institute pvt ltd boasts of a full-fledged travel desk that offers all its international patients



Insurance

The facility of cashless hospitalization offers immense benefit to patients. It provides the right to insured patient



International Patients

Our international patient service (IPS) always ensures of providing premium quality service to make it a soothing experience overall.





Centres of Excellence

























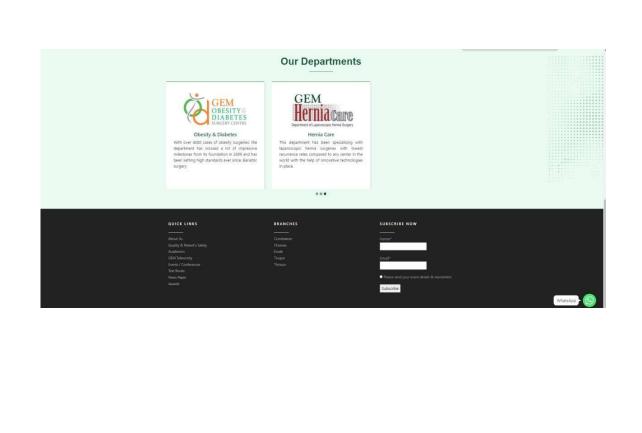












6.TEST CASE DESIGN:

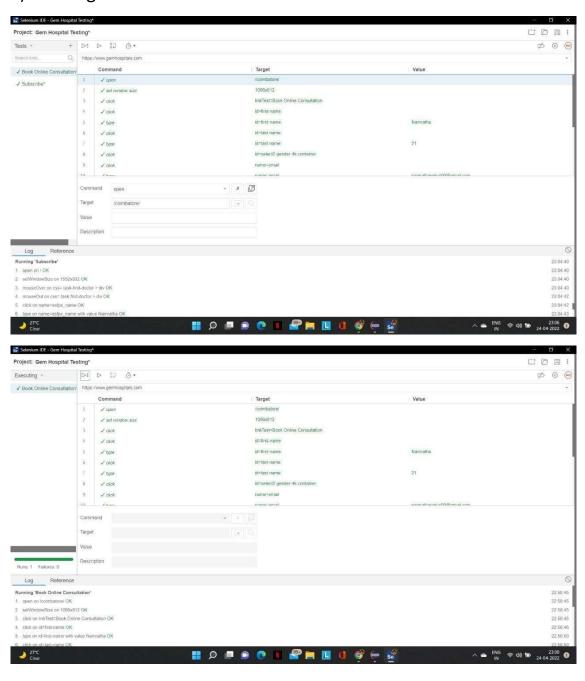
Test Scenario No	Test Scenario Name	Test Scenario Description
TS001	Verification of Booking Consulation Module	To Verify user/patient can able to book a Consulation
TS002	Verfication of Payment Module	To Verify user/patient can able to pay the consulation fees
TS003	Verfication of Find Doctor Module	To Verify user/patient can able see Doctor Details
TS004	Verfication of Patient details Module	To Verify user/patient can able see Patient information
TS005	Verfication Facility's Details Module	To Verify user/patient can able to see Faclity provides to Patient
TS006	Verfication Search Department Details Module	To Verify user/patient can able to see all the departments

Test Case No	Test Description	Input	Actual Result	Expected Result	Status	Tester Name
TC001	To,verify wheather user can able to book a consulation	Name:Aditya Age:20	Submitted	Submitted	Pass	Aditya Sinha
TC002	To,verify wheather user can able to book a consulation	Phone no:8299885 Location:Coimbatore	Error in phone no number should have 10 number	Invalid phone no	Pass	Aditya Sinha
TC003	To, Verify User can able to pay the consulation fees	Payment method:Paytm	Redirect to Payment site	Redirect to paytment site	Pass	Aditya Sinha
TC004	To, Verify User can able to pay the consulation fees	Payment method:Google pay	Not Redirect to payment site	Redirect to paytment site	Pass	Aditya Sinha
TC005	To,Verify user can able to see Doctor details	Click Our doctor functionality	Navigate to the page Where Details of the doctor is present	Navigate to the page Where Details of the doctor is present	Pass	Aditya Sinha
TC006	To,Verify user can able to see Doctor details	Click Our doctor functionality	Page is not opened	Navigate to the page Where Details of the doctor is present	Pass	Aditya Sinha
TC007	To,Verify user can able to see patient information	Click Patient Information Functionality	Navigate to the page Where Details of the Patient is present	Navigate to the page Where Details of the Patient is present	Pass	Aditya Sinha
TC008	To, Verify user can able to see patient information	Click Patient Information Functionality	Page is not opened	Navigate to the page Where Details of	Pass	Aditya Jha

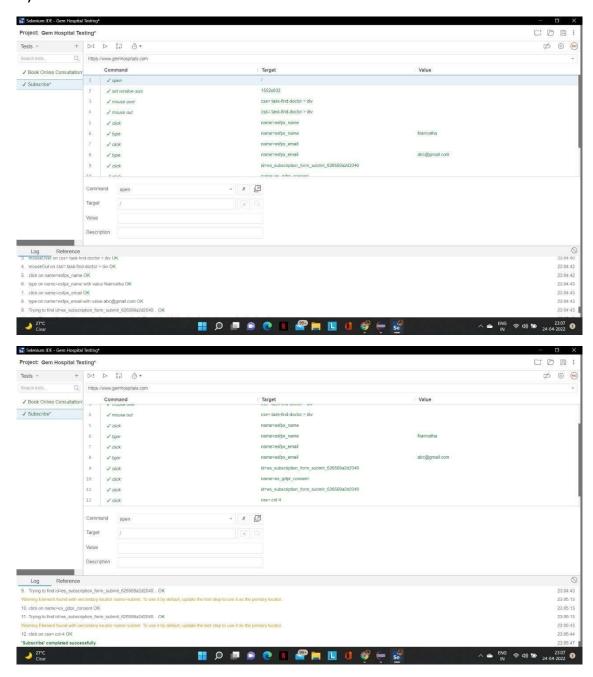
				the Patient is		
				present		
TC009	To,Verify user can able to see Facilty available	Click on Facilites Functionlity	Navigate to the page Where all the Functionlity of the Hospital is present	Navigate to the page Where all the Functionlity of the Hospital is present	Pass	Aditya Jha
TC010	To,Verify user can able to see Facilty available	Click on Facilites Functionlity	Page is not opened	Navigate to the page Where all the Functionlity of the Hospital is present	Pass	Aditya Jha
TC011	To ,Verify user can able to see department details	Click on Department Functionlity	Navigate to Our Departments page	Navigate to Our Departments page	Pass	Aditya Jha
TC012	To ,Verify user can able to see department details	Click on Department Functionlity	Error in page opening	Navigate to Our Departments page	Pass	Aditya Jha

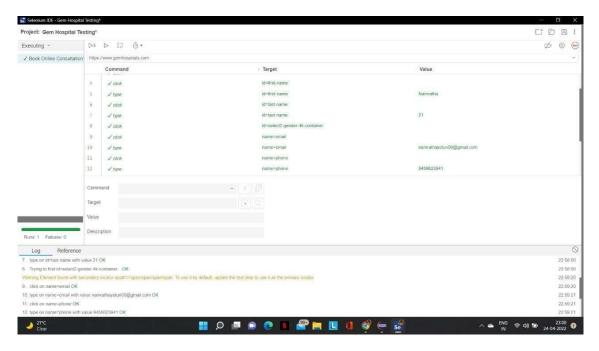
7. Selenium automated testing

a) booking online consultation



b)subscribe module





8. MODULE SIMULATION IN JAVA

CODE:

Module code

```
import java.util.*;
import java.awt.*;
import javax.swing.*;
import java.awt.event.*;
import java.io.*;
public class module {
    public static boolean isNumeric(String strNum) {
        if (strNum == null) {
            return false;
        }
        try {
            double d = Double.parseDouble(strNum);
        } catch (NumberFormatException nfe) {
            return false;
        }
        return false;
    }
}
```

```
}
    return true;
  }
  public static boolean correctdoc(String dep,String dname)throws IOException
    String[][] s={{"Chief","Prof Palanivelu C|chief"},{"Obesity","Dr Baby
Narayanan | Obesity" | , {"Surgical Gastro", "Dr Waseem Ahmed | SG" | , {"Medical Gastro", "Dr. P
Praveen Raj | MG"}, {"Gynecology", "Dr Jayanth Leo XL | Gynecology"}, {"Liver Transplant", "Dr S
Asokan | LT" }, {"Anaesthesiology", "Dr T K Rajesh | Anesthesiology" }, {"liver and multi-organ
Transplant", "Dr S Srivatsasn Gurumurthy"}, {"general surgeon", "Dr Pinak
DasGupta | GS"}, {"general surgeon", "Dr Ajay G Pai | GS"}, {"nephrology", "Dr Srinivasan
Muthukrishnan | nephrology" }};
    int l=s.length;
    for(int i=0;i<1;i++)
    {
      if(dep.compareTo(s[i][0])==0\&&dname.compareTo(s[i][1])==0)
      return true;
    }
    return false;
  }
  public static void check(String n,String age,String gender,String email,String pno,String
city, String dep, String dname, String Tarea)
  {
    try{
    if(n.compareTo("Name")==0)
      throw new Exception("Enter name");
    }
    if(!(isNumeric(age)))
      throw new Exception("Enter proper Age");
```

```
}
if(gender.compareTo("Gender")==0)
  throw new Exception("Select gender");
if(!(email.indexOf('@')!=-1\&email.indexOf('@')!=0\&email.indexOf(".com")!=-1))
  throw new Exception("invalid Email");
}
if(!(isNumeric(pno)&&pno.length()==10))
  throw new Exception("invalid phone number");
}
if(city.compareTo("City")==0){
  throw new Exception("Select City");
}
if(dep.compareTo("Department")==0)
  throw new Exception("Select Department");
if(dname.compareTo("Select doctor")==0)
  throw new Exception("Select doctor");
}
if(!(correctdoc(dep,dname)))
  throw new Exception("Doctor and department do not match");
}
```

```
System.out.println(n);
    System.out.println(age);
    System.out.println(gender);
    System.out.println(email);
    System.out.println(pno);
    System.out.println(city);
    System.out.println(dep);
    System.out.println(dname);
    System.out.println(Tarea);
    FileWriter fw=new FileWriter("db.txt",true);
    BufferedWriter bw=new BufferedWriter(fw);
    PrintWriter pw=new PrintWriter(bw);
    pw.println(n+" "+age+" "+gender+" "+email+" "+pno+" "+city+" "+dep+" "+dname+"
"+Tarea);
    pw.close();
    bw.close();
    fw.close();
 }
  catch(Exception e)
    System.out.println(e);
 }
  public static void main(String args[]){
       Scanner sc=new Scanner(System.in);
       System.out.println("enter choice");
       char ch=sc.nextLine().charAt(0);
       if(ch==1)
       {
```

```
module obj=new module();
    JFrame J=new JFrame("module");
    J.setLayout(new BorderLayout());
    J.setContentPane(new JLabel(new ImageIcon("D:/programming/java/a.png")));
    J.setLayout(new FlowLayout());
    JButton b=new JButton("Submit");
    JTextField f1=new JTextField("Name");
    JTextField f2=new JTextField("Age");
    String[] s3 = { "Gender", "Male", "Female" };
    JComboBox f3=new JComboBox(s3);
    JTextField f4=new JTextField("Email");
    JTextField f5=new JTextField("Phone number");
    String[] s6={"City","Chennai","Coimbatore"};
    JComboBox f6=new JComboBox(s6);
    String[] s7={"Department", "Chief", "Obesity", "Surgical Gastro", "Medical
Gastro", "Gynecology", "Liver Transplant", "Anaesthesiology", "liver and multi-organ
Transplant", "general surgeon", "nephrology"};
    JComboBox f7=new JComboBox(s7);
    String[] s8={"Select doctor","Prof Palanivelu C|chief","Dr Baby Narayanan|Obesity","Dr
Waseem Ahmed SG", "Dr. P Praveen Raj MG", "Dr Jayanth Leo XL Gynecology", "Dr S
Asokan LT", "Dr T K Rajesh Anesthesiology", "Dr S Srivatsasn Gurumurthy", "Dr Pinak
DasGupta | GS", "Dr Srinivasan Muthukrishnan | nephrology", "Dr Ajay G Pai | GS" };
    JComboBox f8=new JComboBox(s8);
    JTextArea f9=new JTextArea("Eg:Cold,Fever,Pain");
    f1.setBounds(300, 200, 150, 30);
    f2.setBounds(500,200,150, 30);
    f3.setBounds(300,250,150, 30);
    f4.setBounds(500,250,150, 30);
    f5.setBounds(300,300,150, 30);
    f6.setBounds(500,300,150, 30);
```

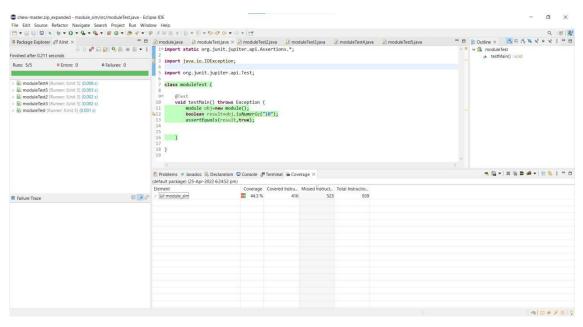
```
f7.setBounds(300, 350, 150, 30);
f8.setBounds(500,350,250,30);
f9.setBounds(300,400,400,90);
b.setBounds(450, 500, 120, 20);
J.add(b);
J.add(f1);
J.add(f2);
J.add(f3);
J.add(f4);
J.add(f5);
J.add(f6);
J.add(f7);
J.add(f8);
J.add(f9);
J.setSize(800,600);
J.getContentPane().setLayout(null);
J.setVisible(true);
b.addActionListener(new ActionListener(){
  public void actionPerformed(ActionEvent e){
    try
    {
      String n=f1.getText();
      String age=f2.getText();
      String gender=(String) f3.getSelectedItem();
      String email=f4.getText();
      String pno=f5.getText();
      String city=(String)f6.getSelectedItem();
      String dep=(String)f7.getSelectedItem();
```

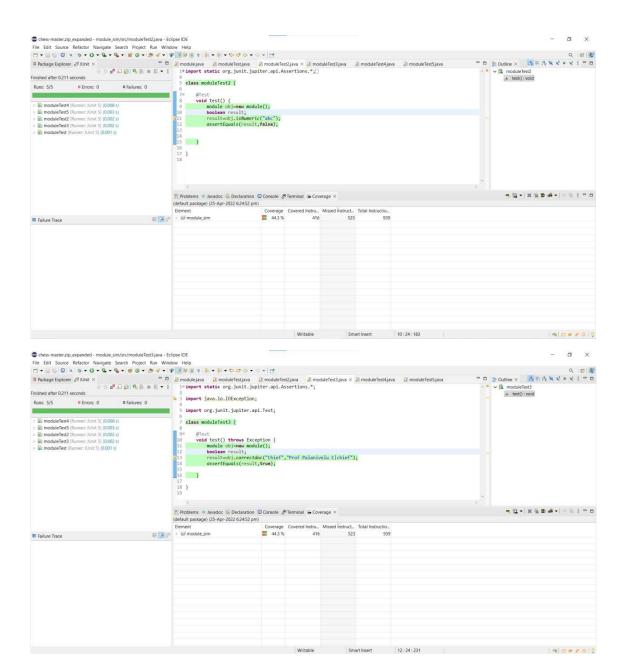
```
String dname=(String)f8.getSelectedItem();
        String Tarea=f9.getText();
        check(n,age,gender,email,pno,city,dep,dname,Tarea);
      }
      catch(Exception f)
        System.out.println(f);
      }
      }});
      }
     else
     {
            String n=sc.nextLine();
    String age=sc.nextLine();
    String gender=sc.nextLine();
    String email=sc.nextLine();
    String pno=sc.nextLine();
    String city=sc.nextLine();
    String dep=sc.nextLine();
    String dname=sc.nextLine();
    String Tarea=sc.nextLine();
    check(n,age,gender,email,pno,city,dep,dname,Tarea);
     }
}
```

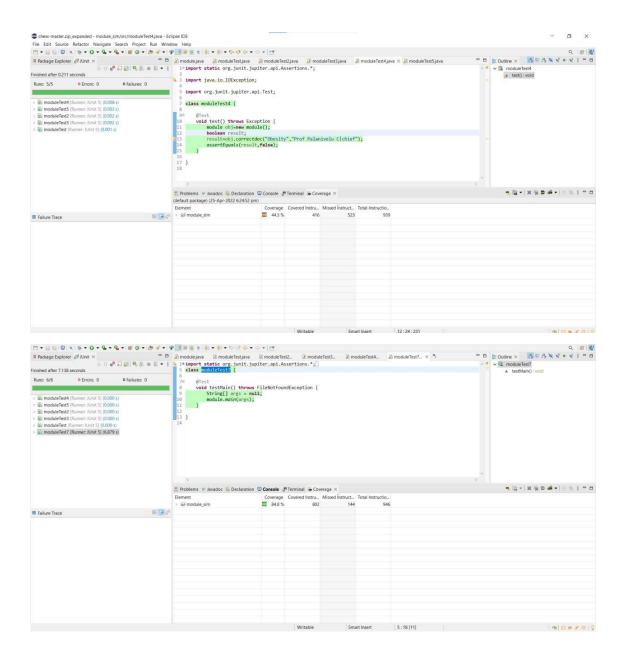


Fig: module simulation screenshot

9. testing through junit



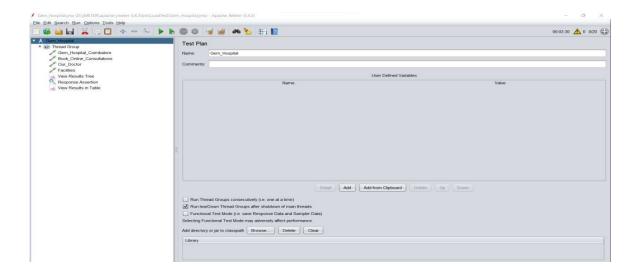


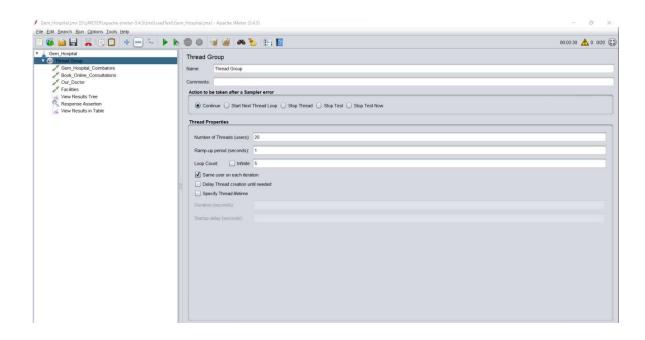


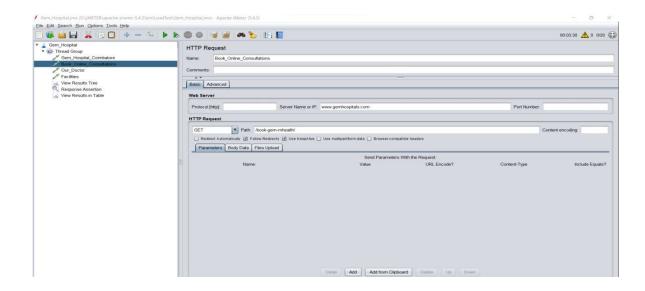
TOTAL COVERAGE =84.8%

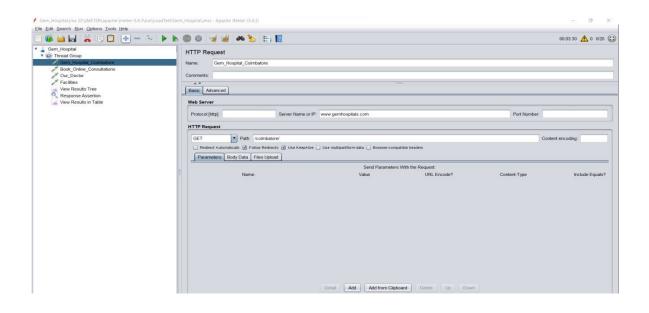
10. JMETER NON FUNCTIONAL TESTING

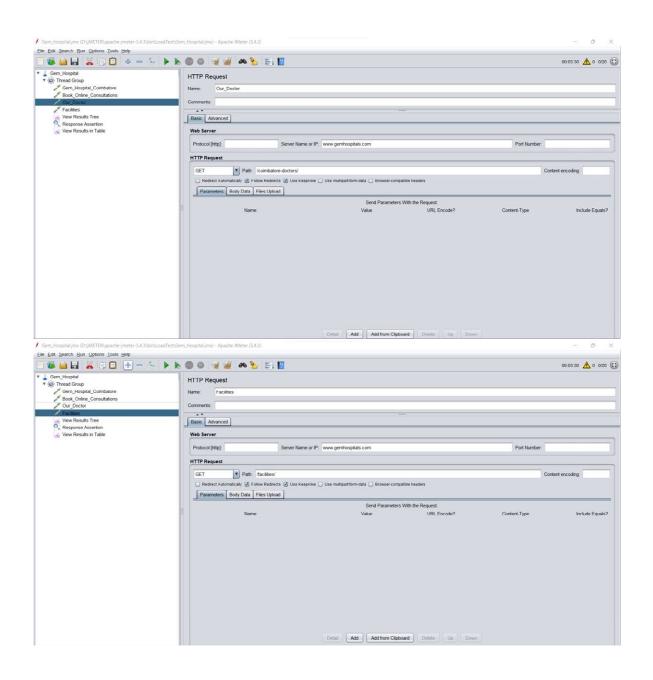
LOAD TESTING:

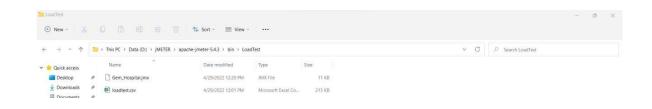




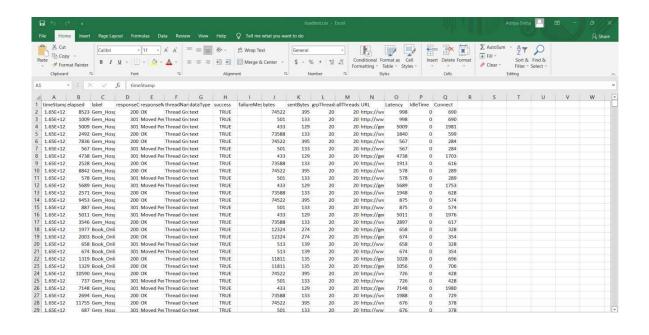




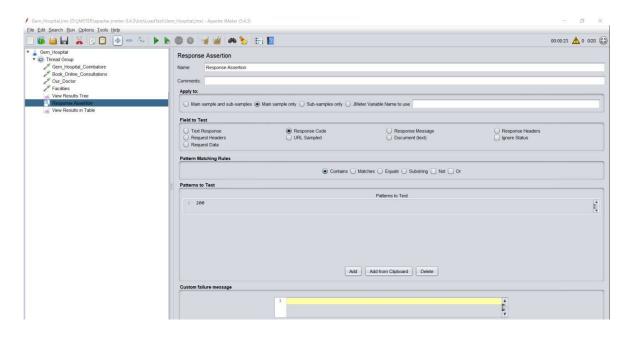


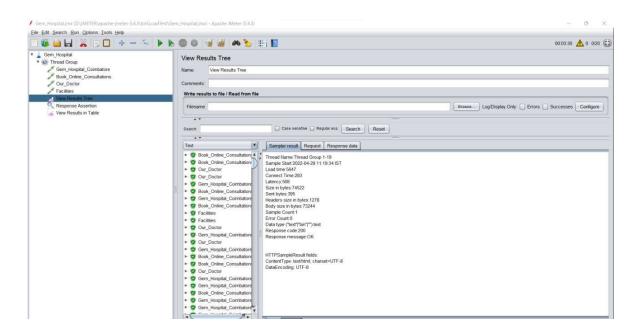


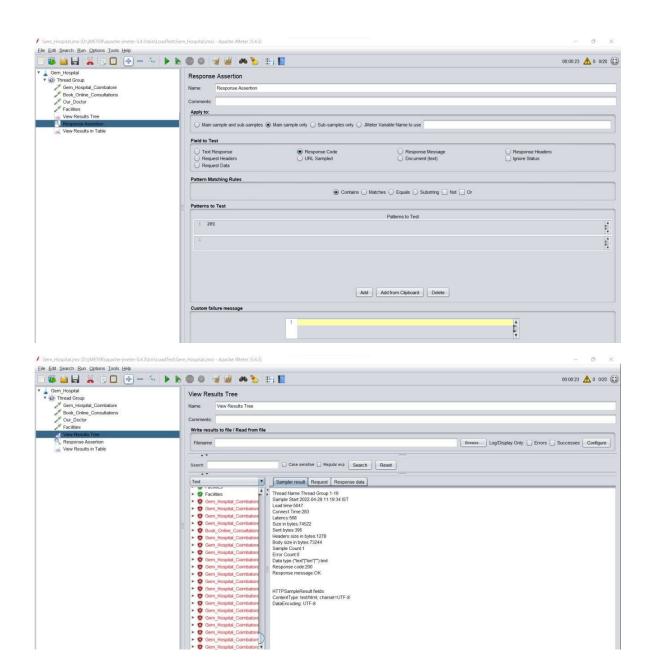
```
D:\METER\apache-jmeter-5.4.3\bin\pjmeter -n -t \jMETER\apache-jmeter-5.4.3\bin\LoadTest\Gem_Hospital.jmx -1 \jMETER\apache-jmeter-5.4.3\bin\LoadTest\loadTest\Gem_Hospital.jmx -1 \jMETER\apache-jmeter-5.4.3\bin\LoadTest\loadTest\Gem_Hospital.jmx \rightarrow for eated the tree successfully using \jMETER\apache-jmeter-5.4.3\bin\LoadTest\Gem_Hospital.jmx \rightarrow for eated for eated
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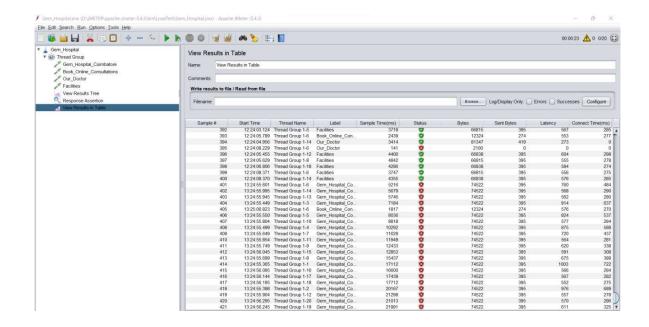


STRESS TESTING:









11.1 TEST LOG REPORT

Test Case Log

Test Name	e :	Unit Testing and	Unit Testing and Integration Testing			
Test Case	Author:	Describe the Test	Case Author I	Name		
Tester Nai	me:	Aditya Sinha				
Project ID	/ Name:	Testld1426				
Date Teste	ed:	22-04-2022	22-04-2022			
Test Case ID	Test Objectiv ID	Category /e	Condition	Expected Results	Actual Results	Requirement ID
Describe the Test Case ID	Describe the ID from the Test Plan	Test Category e.g. (Edit,	Describe the Specific Test Condition	Describe the Specific Results Expected on Executing the Condition	Record "Pass" or "Fail"	Describe the ID which Traces Back to the Specific Requirement
1423	1423-01	Unit Testing	Date should be in dd-	18-04-2022	Pass	1423

			mm-yyyy format			
1423	1423-02	Unit Testing	Date should be in dd- mm-yyyy format	12-14-2022	Fail	1423
1424	1424-01	Unit Testing	Time should be in 24 hr format	15:30	Pass	1424
1424	1424-02	Unit Testing	Time should be in 24 hr format	26:25	Fail	1424
1425	1425-01	Integration Testing	Day should be greater than today	27-04-2022	Pass	1425
1425	1425-02	Integration Testing	Day should be greater than today	26-04-2022	Fail	1425
1426	1426-01	Integration Testing	Time should be greater than current time	10:00 am	Pass	1426
1426	1426-02	Integration Testing	Time should be greater than current time	09:00 am	fail	1426

11.2 TEST INCIDENT REPORT

Category	Details
Test Incident ID	<testid466610></testid466610>
Test Case ID	<testid466610-01></testid466610-01>
Test Incident Date	<22-04-2022>
Test Incident Time	<10:00 am>
Tester name	<aditya sinha=""></aditya>
Tester Phone	<1234567789>

Incident Description 1:

Category	Details
Medical report file could not be uploaded.	<file file="" format="" in="" not="" supported=""></file>
When we are uploading medical report documents for doctor verification user getting the error.	<file correct="" format="" in="" not="" was=""></file>
Failed software.	<gem hospitals="" software=""></gem>
Denial of service	<service for="" legitimate="" unavailable="" users=""></service>
Software cannot able to give requested information	<server able="" not="" respond="" to="" was=""></server>
Description Prepared By	<aditya sinha=""></aditya>
Date	<22-04-2022>

Incident Resolution 1:

Category	Details
Incident Referred to	<aditya jha=""></aditya>
Date	<27-04-2022>
Incident determined to be the result of	<software error=""></software>
If "Program Error" has been selected, name program or module	<server problem=""></server>
Impact/severity level determined to be	<high></high>
Description of all resolution activities	<shutting address="" down="" ip="" particular="" that=""></shutting>
Resolution Prepared By	<aditya sinha=""></aditya>
Date	<23-04-2022>
Payment cannot able to process	<payment failed=""></payment>
Insufficient balance.	<payment balance="" due="" failed="" low="" to="" was=""></payment>
No problem with software.	<gem hospitals="" software=""></gem>
No attack was happened	<payment balance="" didn't="" for="" happened="" low="" saving="" users="" with=""></payment>
Software can able to give requested information	<server perfectly="" responds=""></server>
Description Prepared By	<aditya sinha=""></aditya>
Date	<18-04-2022>

Incident description 2:

Incident resolution 2:

Category	Details
Incident Referred to	<aditya jha=""></aditya>
Date	<27-04-2022>
Incident determined to be the result of	<cli>side error></cli>
If "Program Error" has been selected, name program or module	< client problem>
Impact/severity level determined to be	<high></high>
Description of all resolution activities	<shutting down="" payment="" process="" the=""></shutting>
Resolution Prepared By	<aditya sinha=""></aditya>
Date	<23-04-2022>