LONDON METROPOLITAN UNIVERSITY

ITAHARI INTERNATIONAL COLLEGE

Module Code & Module Title

CS5004NT Emerging Programming Platforms and Technologies

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Title (Where Required):

Year and Semester

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Group Name: L2C2 - D			
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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a marks of zero will be awarded.

Acknowledgement

After the numerous effort and hardships, we have succeeded in the final outcome of our group coursework. However, to end the project, we required a lot of guidance from several people and we would be very thankful to them.

First of all, we would like to express our special thanks of gratitude to our module leader Dhruba Sen and lecturer Pradhumna Dhungana for providing valuable guidance and importance knowledge to achieve the major goal of the coursework. They also realize us the necessity of time management to finish the project in a limited time frame.

Secondly, we would also like to thank Itahari International College and London Metropolitan University for providing high quality education and golden opportunity to do this coursework which really helps to develop enhancing skills and carrier in upcoming days. We would also like to give big thanks to our parents for their love, care and financial support.

And lastly, we would like to thank our friends and all those helping hands who helped us in any way to end our assignment. This coursework would not been complete without their enormous help. Whenever we were in need, they were there behind.

Abstract

The provided group coursework to us is of module Emerging Programming Platform and Technology which is about developing the Java based Information System of a Hotel management using NetBeans IDE. The system is made using GUI based application containing number of predefined components such as frame, panels, labels, text fields, combo box, menu bar and buttons. The System stores, adds, searches and displays all the table details about the Hotel management. Similarly, project also made a proposal of the system that gives overview and functioning of the entire hotel. This information system GUI has many features like, Text Fields to write a text, radio buttons for range levels, combo box and check box for selecting categories, hotel details for storing and displaying the available room and menu bar with file and help option. Here, the search method is also used to search the hotel room based on price using binary search algorithm. Thereby, report also describes the use of binary search algorithm, searching process of system and methods creation. Likewise, report also describe the functioning of each button and testing approaches to show the evidence of each of them.

Overall, coursework was finished without any obstacles and in a limited time frame for the ease of the company and customers to store and display service details.

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Proposal

Title: Oyo Hotel and Lodge

The Information system will be of Oyo Hotel and Lodge.

Description of the system

The proposed system will be of Oyo Hotel and Lodge where managers can set different categories of rooms like a single, double, twin, triple, presidential suite. The manager can choose attach bathroom or not. After completion of this system, it will eliminate manual keeping of record and every record will be kept in the database. Searching records will be fast accurate and easy.

The system will contain many features like an advanced search option which allows the user to search room based on its price. If there is more than one room having the same price, then it will display only the first room otherwise it will display a suitable error message. The manager can see the room, room category, and price. The further feature can be added according to hotel need.

The main focus on developing this application will be on user-friendly GUI, user experience and simple to use. In this way, the system will be created.

List of Data

Table 1: List of data

Room Id	It will hold the unique value of each room which will be easy for identification
Room Name	It will hold the value of room name
Room Category	The room category will offered single, double, twin, triple, quad room
Attach bathroom	User can choose attach bathroom room or not
price	The price of the room
Range	The range of the price low medium and high

List of features

- The room can be searched by its price. If two or more room have the same price only the first matching item is shown.
- Total number of room category can be searched from combobox.
- It will have the menu bar where user can see help submenu that will tell how to use the system.
- Only valid customer data is added to the table otherwise it will show a suitable error message.
- Manager can choose Room category and attach bathroom.
- The UI of the system will be user friendly and interactive.
- It is used to store and display the data in tabular format.

1. Individual Task

The coursework given to us was of Emerging Program Platforms and Technologies which should be done in a group. The module leader requested to form 3 or 4 members for the completion of coursework. Afterwards, each of us formed the group members and everyone participating actively. The member of us includes Milan Katwal, Girija Tamang and Pujan Prasai. Each of us divided the task equally and completed in time. The below table contains the task completed by each member:

Member Name	Task completed
Milan Katwal	Coding for sorting, Flowchart, Pseudocode, Method description
Girija Tamang	Coding for Validation, Binary search description, Testing, User Manual
Pujan Prasai	Proposal, Creating Graphical User Interface (GUI), Introduction, Conclusion, Coding for Searching

2. Introduction

The coursework given to us is of Emerging Program Platforms and Technologies module that is about the advancement of an organization's Java-based information system. The coursework is divided into task A, task B and task C in three parts. Task A requires us to create a plan that includes an overview of our method, resources and technologies used to implement the program. Likewise, in task B programming code is implemented in NetBeans IDE to run a system. At last, task C is done for documentation purpose showing the evidence of testing, method descriptions of the class, illustration of binary search algorithm and to show the steps and procedures of the programs.

Firstly, understanding the java is a high-level programming language that is generally used for developing and running the applications with the use of numerous syntax and commands. Java Code is used to develop various application using NetBeans IDE.

NetBeans is the easiest, most user friendly and versatile open source software used for developing java application. And here, the given coursework is provided to us for storing, displaying and searching the various services and facilities of an Organization using java programming language in a NetBeans IDE. NetBeans is used for building a GUI, to write a text and to edit a code, check out the bugs, compile and to debugs the programs.

Likewise, here Java Swing is used for building Graphical User Interface (GUI). Java swing is a platform independent and lightweight component that includes a rich set of widgets. It is built on the top of AWT (Abstract Windowing Toolkit) API and acts as replacement of AWT API. (www.javatpoint.com, 2019)

Now, going through the project, GUI was created by containing variety of predefined components along with frame, panels, labels, text fields, menu bar and buttons. This information system GUI has many features like, Text Fields to write a text, radio buttons for range levels, combo box for selecting room category and check box for selecting attach bathroom, hotel details for storing and displaying the available room and menu bar with file and help option. Similarly, system used Listener methods that

receives the event and responds to them when the user presses the buttons. Likewise, Application method for performing work to the user. For this we also import built in and user defined packages to inherit their behavior which are declared in another packages.

Overall, the main objective of this Coursework is to provide a highly efficient technique to store and display service details of a hotel.

3. Binary Search Algorithm

Binary search is an efficient algorithm for finding the specific value from a sorted list of items or array. Binary search searches for a specific value by comparing the middle most item of the collection. The index of that item is returned, if the value of the item is matched. If the middle item is greater than the searched item, the item will be checked in the sub-array to the left of the middle array. If not, the item will be checked in the sub-array to the right of the middle array. This process continues on the sub-array until the value is found or the interval is empty. If the search ends with the remaining half being empty, the target value is not in the array.

Binary Search is applicable to the sorted sequence or large size list. **In the worst case**, binary search runs in logarithmic time, making comparisons of **O(log n)**, where **n** is the number of elements in the list, **O** is Big O notation, and **log** is the logarithm. The time complexity of **O(log n)** makes it very fast compared to other sorting algorithms. The only drawback is that the array or list of elements has to be sorted to operate on the binary search algorithm. This search algorithm operates on the divide and conquers principle. However, binary search be used to solve a wider range of problems, such as finding the next-smallest or next-largest element in the array relative to the target, even if it is not present in the array.

How Binary Search Works?

It is mandatory for the target array to be sorted for a binary search to work. The process of binary searching is given with a pictorial example. The G given below is a sorted array and let us assume that we need to search for a value ’85’ location using a binary search.

G = [1,10,25,40,55,70,85,100,115,130,150]

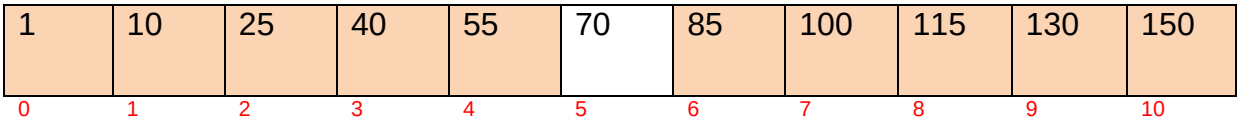
1	10	25	40	55	70	85	100	115	130	150
0	1	2	3	4	5	6	7	8	9	10

First, we determine half of the array by using this formula:

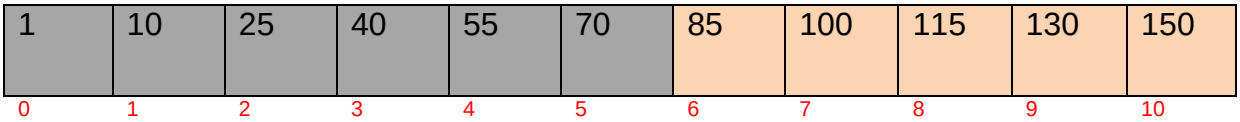
Mid value =low + (high – low) / 2

Here, 0+(10-0) / 2 = 5.

So, 5 is the mid of the array G.



Now, comparing the value stored at index 5 with the value being searched. We find that the value at index 5 is 70, which doesn't match with the search value 85. We have a sorted array, so we know that the target value must be in the upper portion of the array because the searching value is greater than 70.



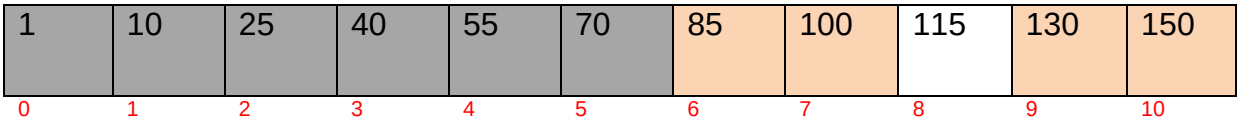
We change our low to mid + 1 and find the new mid value again.

low = mid value + 1

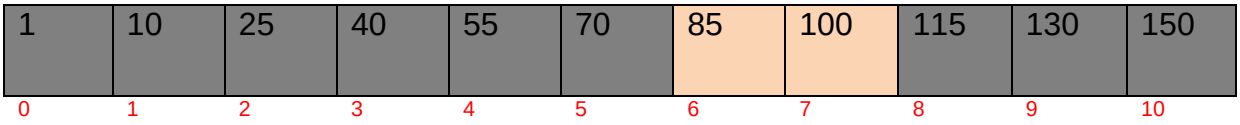
mid value = low + (high - low) / 2

mid value = 6 + (10-6) /2 = 8

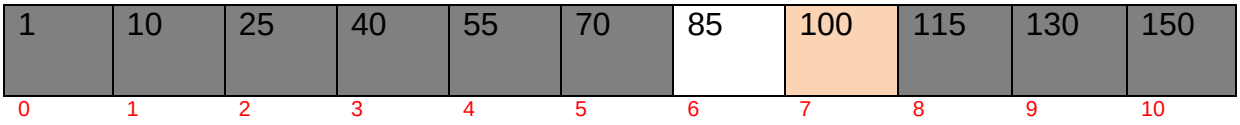
Now, new mid value is 8. We compare the value stored at index 8 with our target value 85.



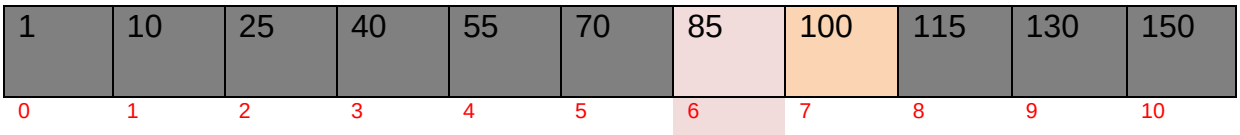
The value stored at index 8 doesn't match and its value is more than searching value. Therefore, from this index 8, the value must be in the lower part.



Again, we calculate the mid value. mid value = 6.



Now, comparing the value stored at index 6 with our target value 85. The value was matched.



We conclude that the target value 85 is stored at index 6 of array G.

Algorithm

Step 1: SET low = 1 and high = n

Step 2: Read the search element from the user

Step 3: if value matches with the user search element, return the mid values

Step 4: If search value is less, set low to be one larger than the guess value

STEP 5: if guess it high, set high to be one smaller than the guess

STEP 6: go back to step 2

Pseudocode

```
Begin

    FUNCTION binarySearch(ArrayList<Hotel> list, int low, int high, int value)

        IF low<=high

            SET mid = (low+high)/2

            IF list(mid) == value

                Return price found

            ELSE IF list(mid) > value

                Return binarySearch(list, low, mid-1, value)

            ELSE

                return binarySearch(list, mid+1, high, value)

        ELSE

            Return price not found

END
```

Flowchart

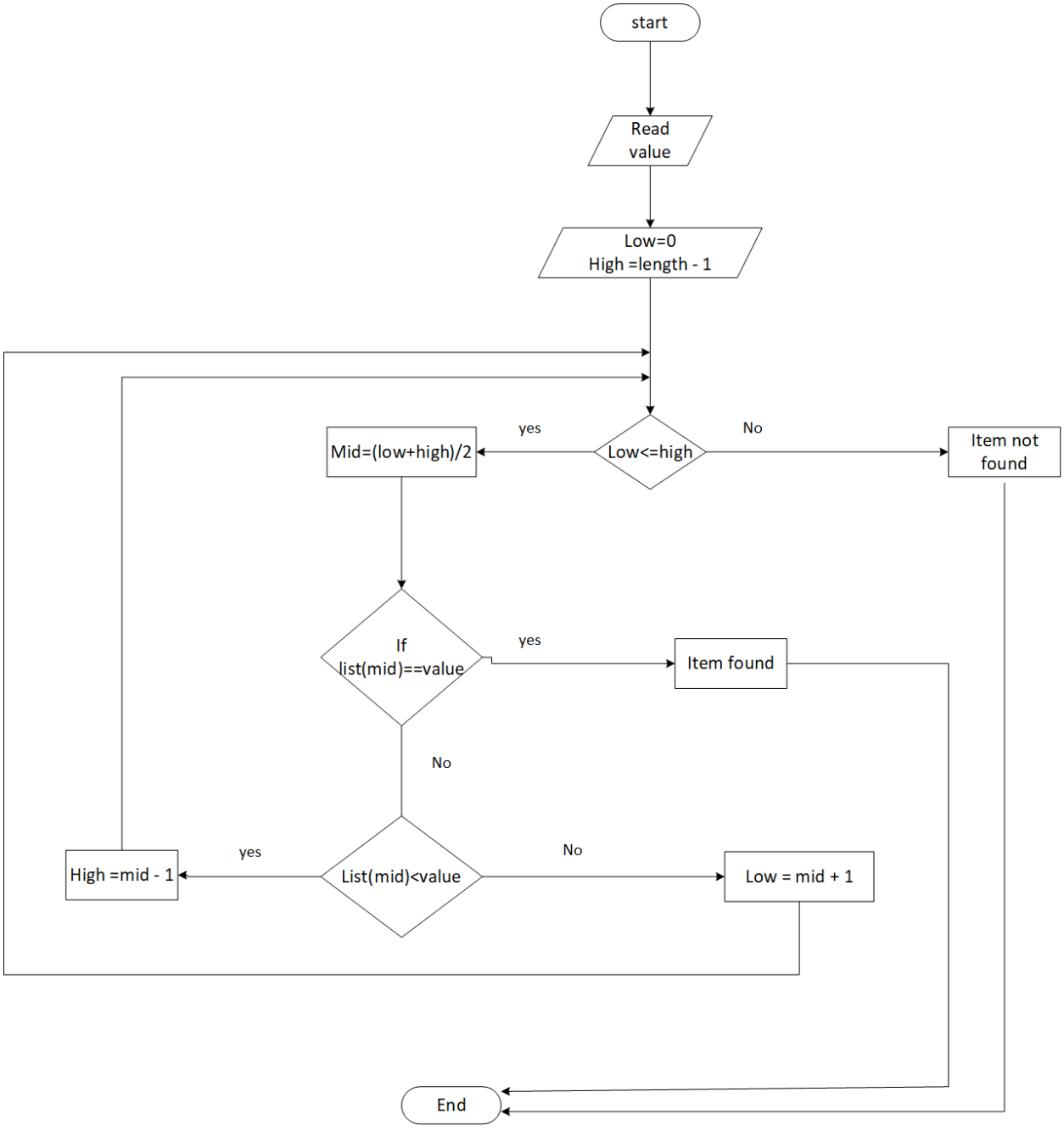


Figure 1:Flowchart of Binary Search Algorithm.

4. Method Description

S. N	Access Modifier	Return Type	Method Description
1	Private	void	btnExitActionPerformed(java.awt.event.ActionEvent evt) This method popup a window showing are you sure you want to exit the program or not. This method is triggered when user click on the exit button.
2	Private	Void	btnPriceSrchActionPerformed(java.awt.event.ActionEvent evt) This method is used to search the price by using binary search algorithm. This method is triggered when user search the price
3	Private	void	btnCateSearchActionPerformed(java.awt.event.ActionEvent evt) This method is used to find the number of room category and their name. This method is triggered when user click the category button
4	Private	void	btnBookActionPerformed(java.awt.event.ActionEvent evt) This method is used to add room and check validation. This method is triggered when user click the add room button
5	Private	void	btnClearActionPerformed(java.awt.event.ActionEvent evt) This method is used to clear all the text field. This method is triggered when user click the clear button
6	private	void	jMenuItem1 ActionPerformed(java.awt.event.ActionEvent evt) This method is used to open the existing pdf file. This method is triggered when user click open file from menu bar

7	Private	void	jMenuItem3 ActionPerformed(java.awt.event.ActionEvent evt) This method is used to exit from the program. This method is triggered when user click exit from the menu bar.
8	Private	void	jMenuItem4 ActionPerformed(java.awt.event.ActionEvent evt) This method is used to open the manual of hotel. This method is triggered when user click manual from the menu bar.
9	Public	void	sort() This method is used to sort the price in selection algorithm. btnPriceSrchActionPerformed function is called.
10	private	int	binarySearch(ArrayList<Hotel> list, int low, int high, int value) This method is used to find the price by using binary search algorithm.

5. User Manual

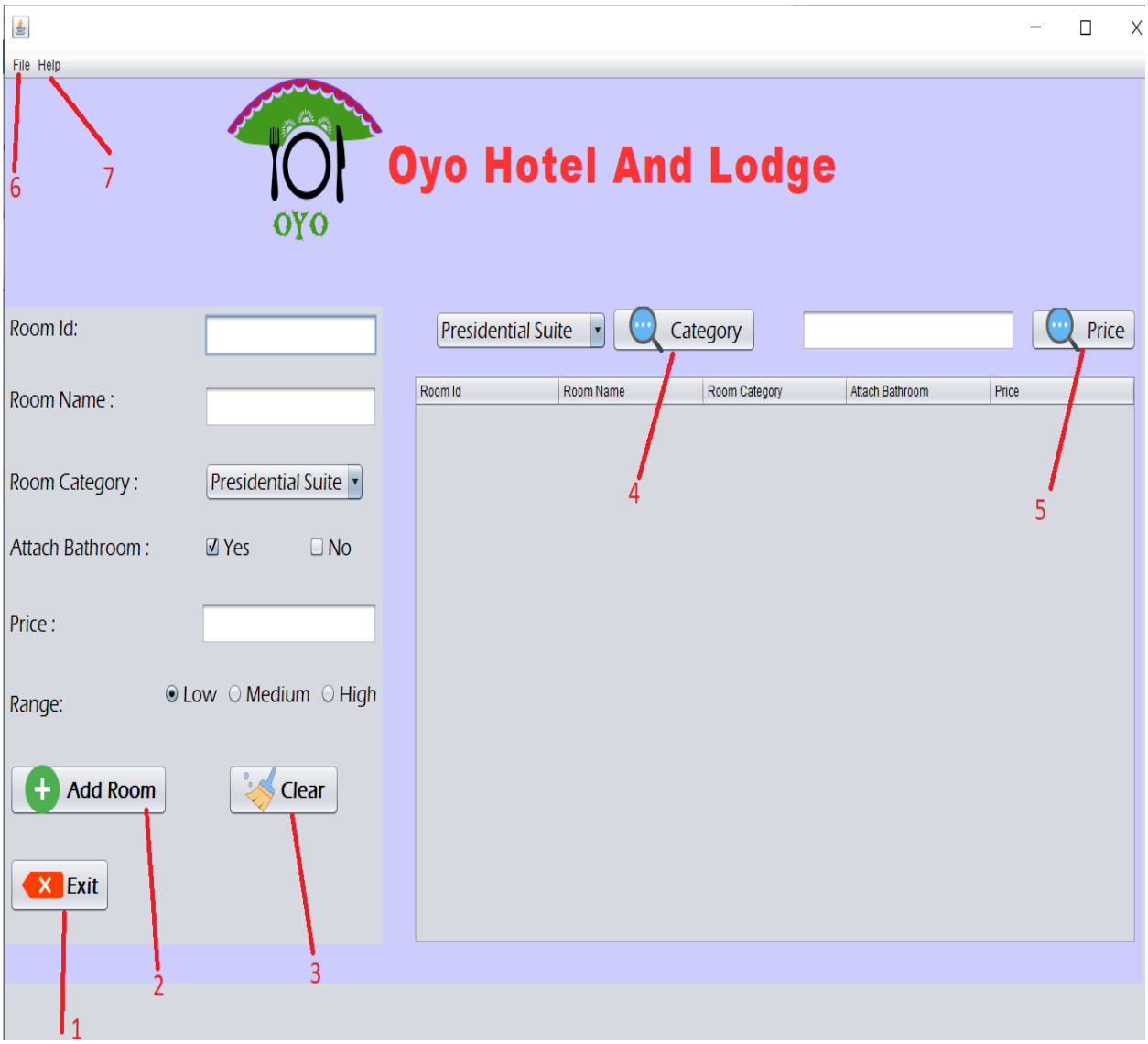


Figure 2:User Manual.

Table 2: user manual of the system

Number	Description
1.	This button is used to close the running system. When this button is pressed, appropriate dialogue box will pop up with yes and no option, if yes is chosen the system get closed otherwise the system remains running.
2.	This button is used to add the details of room in the table. An appropriate data must be inserted in the text fields such as price must be integer value, room id must be unique etc, the room details will be added otherwise error message will be displayed in the dialogue box.
3.	This button clears all the room details data inserted in the text filed.
4.	This button is used to search category information of room from table of the system. It displays the proper information in dialogue box.
5.	This button displays the information of room according to the searched price. When this button is pressed with proper search price, appropriate dialogue box will pop up with available room details or without room details.
6.	The function of this menu from menu bar is to provide the details of menu items like, **open** for opening the file and **exit** for closing the system.
7.	The function of this menu is to display file which contain manual information about the system.

6. Testing

6.1. Test scenario A: Running program on NetBeans

Table 3:Running Program on NetBeans.

Action	We compiled and run our code in NetBeans
Expected Result	We expected that our code will run without any error and GUI will be shown
Actual Result	The actual result was as expected. The code ran without any error and GUI is displayed.
Test Result	The test was successful.

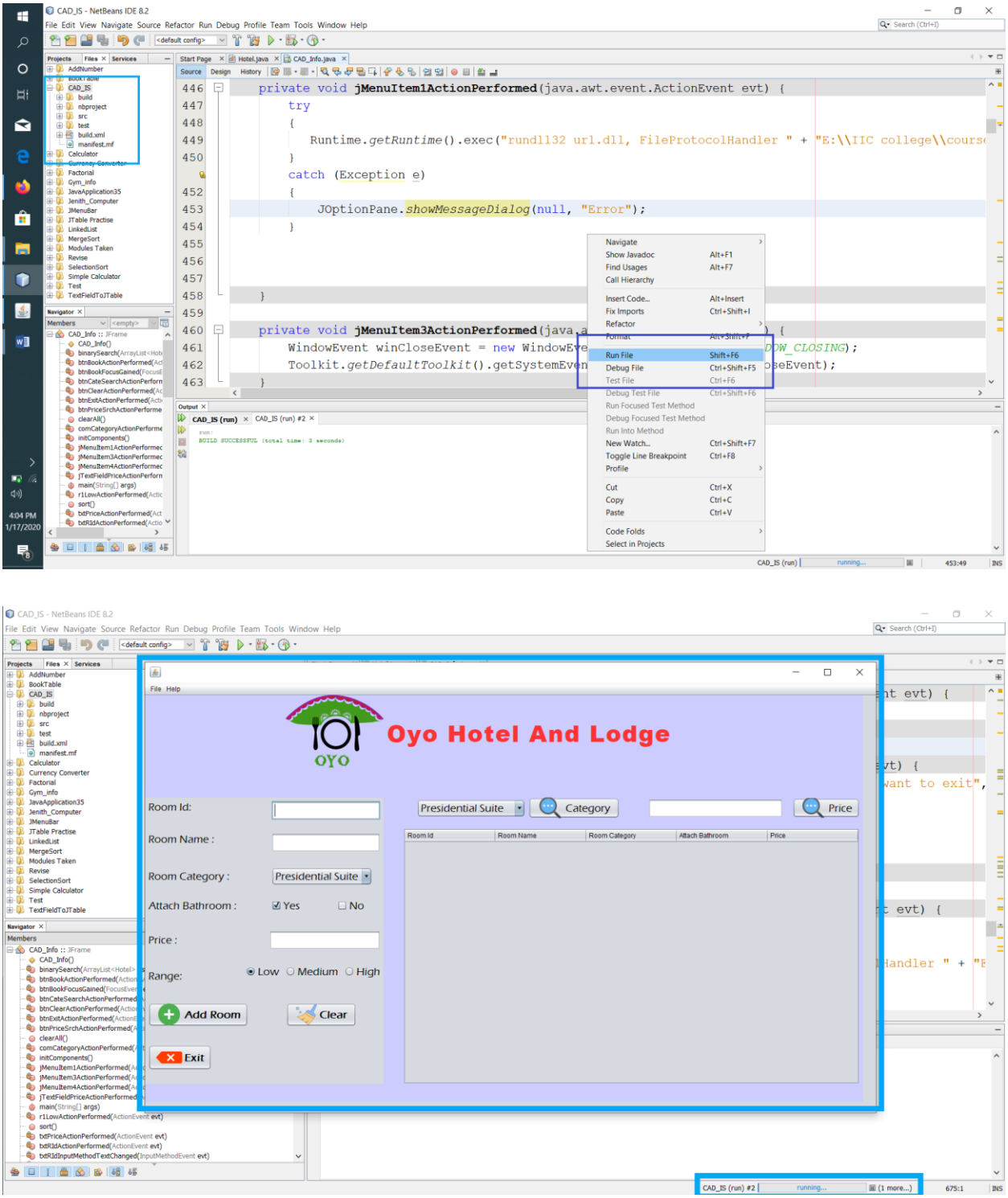


Figure 3: Running Program on NetBeans.

6.2. Test scenario B: Functionality of the program

6.2.1 Adding room details to the table

Table 4: Adding room details to the table.

Action	The values are inserted in the text fields and add button is pressed to add the values to table.
Expected Result	We expected that when add button is pressed the values should add and display in the table without any error.
Actual Result	Values are added and displayed in table without any error.
Test Result	The test was successful.

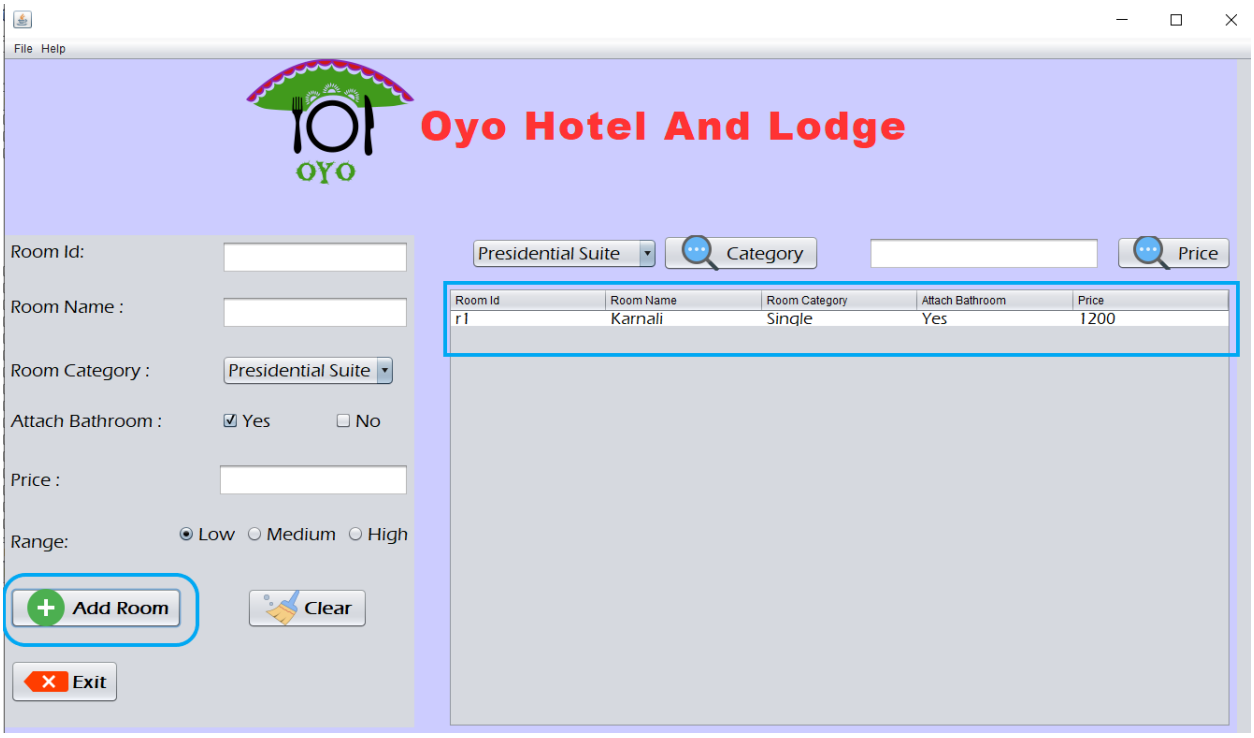


Figure 4: Adding room details to the table.

6.2.2 Searching for rooms based on price.

Table 5: Searching room based on price.

Action	We searched the room details according to the room price
Expected Result	We expected that the appropriate dialogue box will pop up with useful information of that price range
Actual Result	The actual result was as expected. The search was successful because the proper details was shown in dialogue box.
Test Result	The test was successful.

Figure 5: Searching room based on price.

6.2.3 Searching room details based on category

Table 6:Searching room details based on category

Action	We searched the room details according to the room category
Expected Result	We expected that the appropriate dialogue box will pop up with useful information of room category available in table
Actual Result	The actual result was as expected. The search was successful because the proper details of room category was shown in dialogue box.
Test Result	The test was successful.

.

Figure 6:Searching room details based on category.

6.2.4 Opening the file from menu bar

Table 7: Opening the file from menu bar.

Action	We opened file from menu bar from our GUI.
Expected Result	We expected that the open file will open a document file.
Actual Result	The actual result was as expected. The document file was opened.
Test Result	The test was successful.

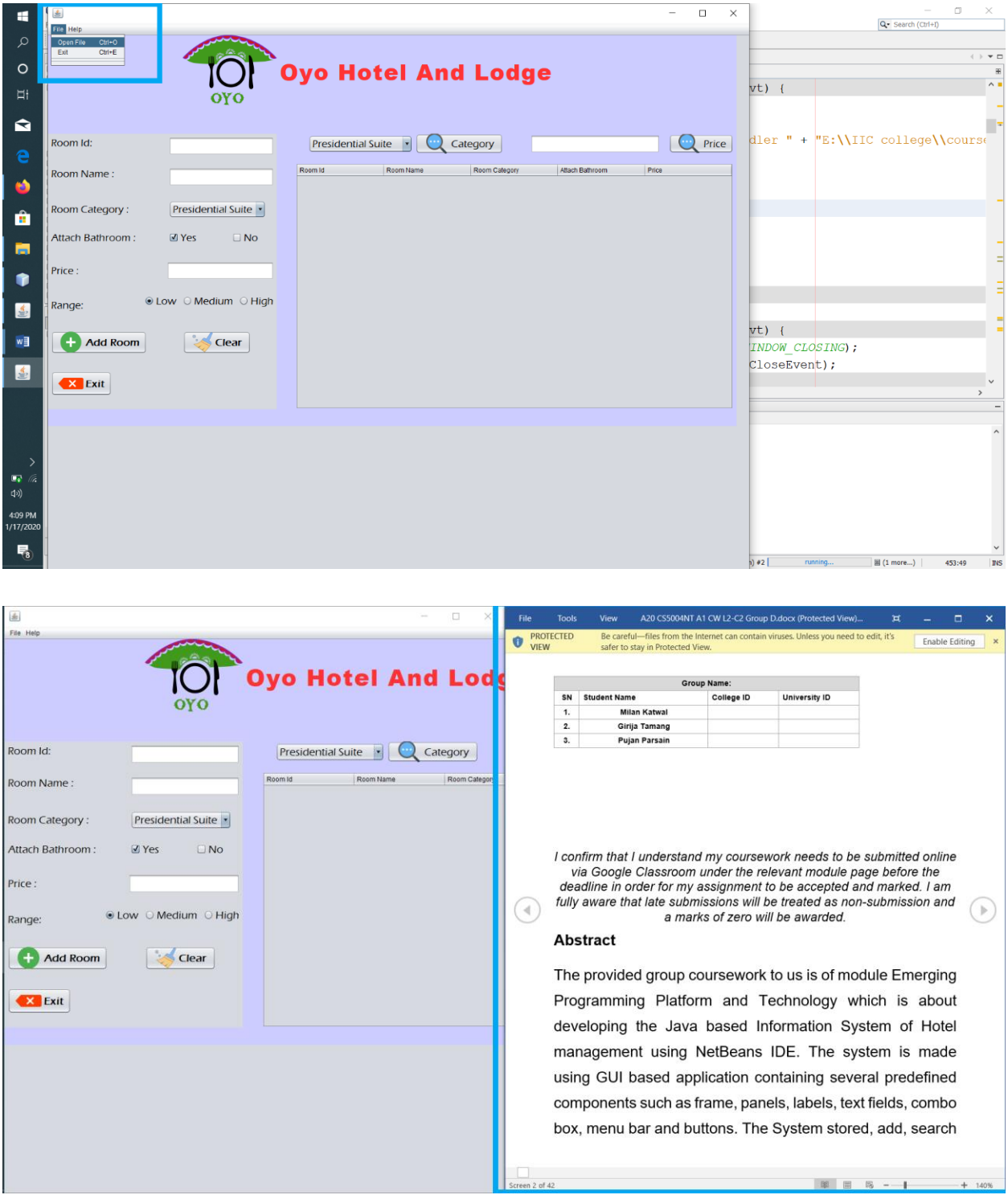


Figure 7: Opening the file from menu bar.

6.2.5 Opening the help file from help menu.

Table 8: Opening the help file from help menu.

Action	We opened file from help menu.
Expected Result	We expected that the help file will open.
Actual Result	The actual result was as expected. The document file was opened.
Test Result	The test was successful.

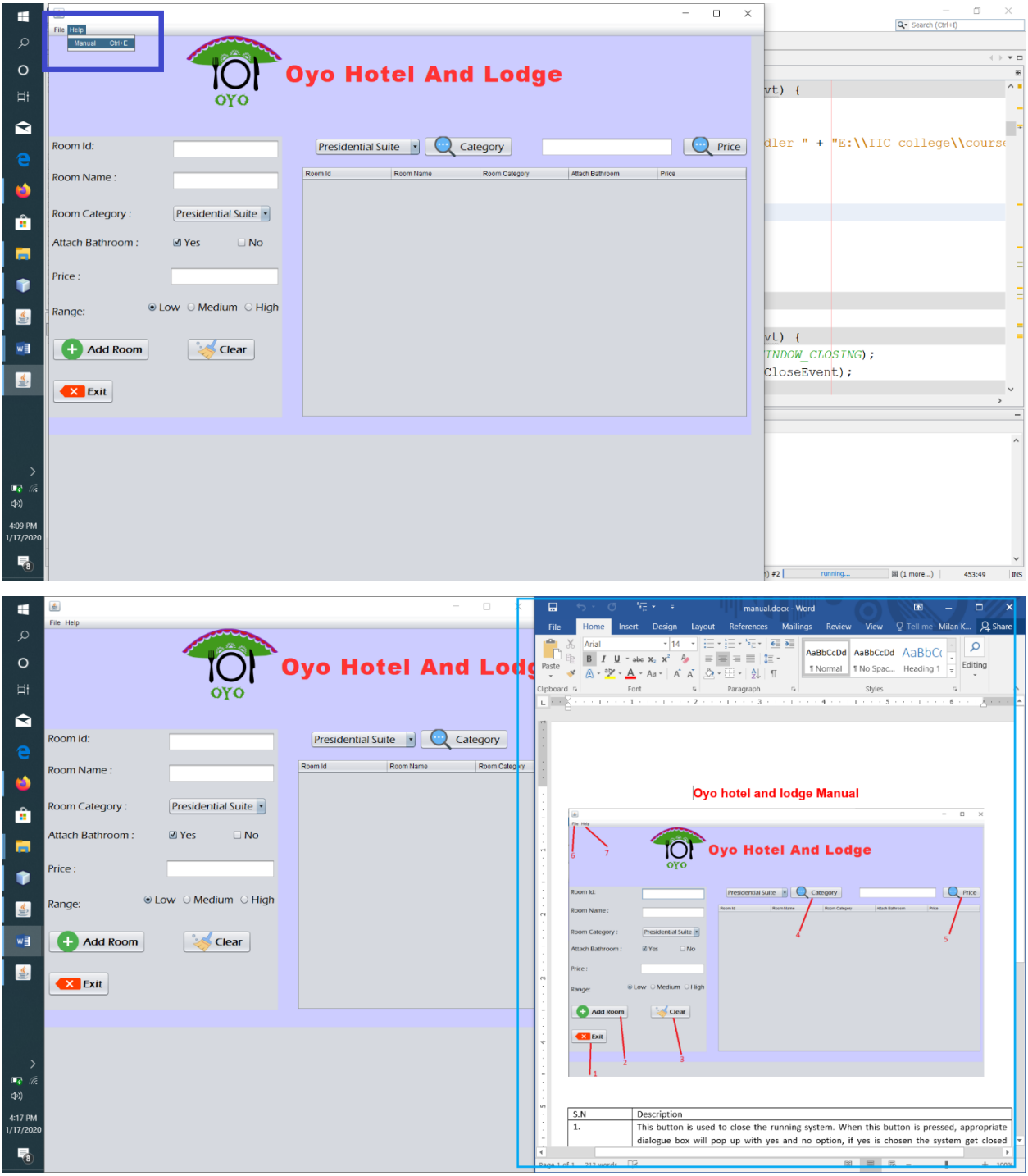


Figure 8: Opening the help file from help menu.

6.3. Test scenario C: Validation of the program

6.3.1 Add button is pressed in the beginning without giving information.

Table 9: Add button is pressed in the beginning without giving information.

Action	When add room button is pressed in the beginning.
Expected Result	We expected that error will be displayed.
Actual Result	The actual result was as expected. Error was shown.
Test Result	The Test was successful

Figure 9: Add button is pressed in the beginning without giving information.

6.3.2 Add button is pressed while price text filed was empty.

Table 10: Add button is pressed while price text filed was empty.

Action	While inserting the value the price text field was left unfilled.
Expected Result	We expected that the input will be unsuccessful, and the input error will be displayed.
Actual Result	The actual result was as expected. The insert was unsuccessful because the price text field was left unfilled.
Test Result	The Test was successful

Figure 10: Add button is pressed while price text filed was empty.

6.3.3 When add button is pressed while room id is same.

Table 11: When add button is pressed while room id is same

Action	While adding the room details in the table with same room id.
Expected Result	We expected that the appropriate dialogue box will pop up with useful information and data will not add in table.
Actual Result	The actual result was as expected. The adding details was successful, and the proper information was shown in dialogue box.
Test Result	The test was successful.

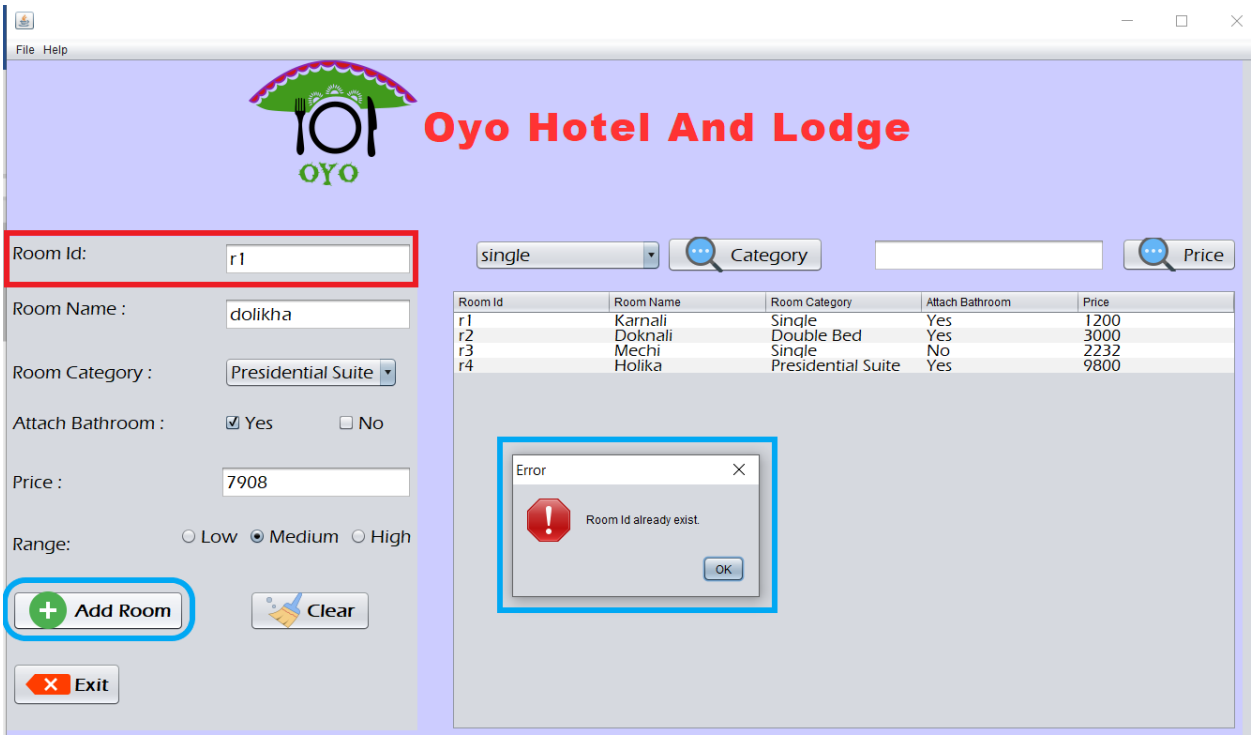


Figure 11: When add button is pressed while room id is same.

6.3.4 When search button is pressed with string values in search text field.

Table 12: When search button is pressed with string values in search text field

Action	In the search text field string value was written instead of integer.
Expected Result	We expected that the appropriate dialogue box will pop up with useful information and data search will be unsuccessful.
Actual Result	The actual result was as expected. The search was unsuccessful because the input value was string instead of integer.
Test Result	The test was successful.

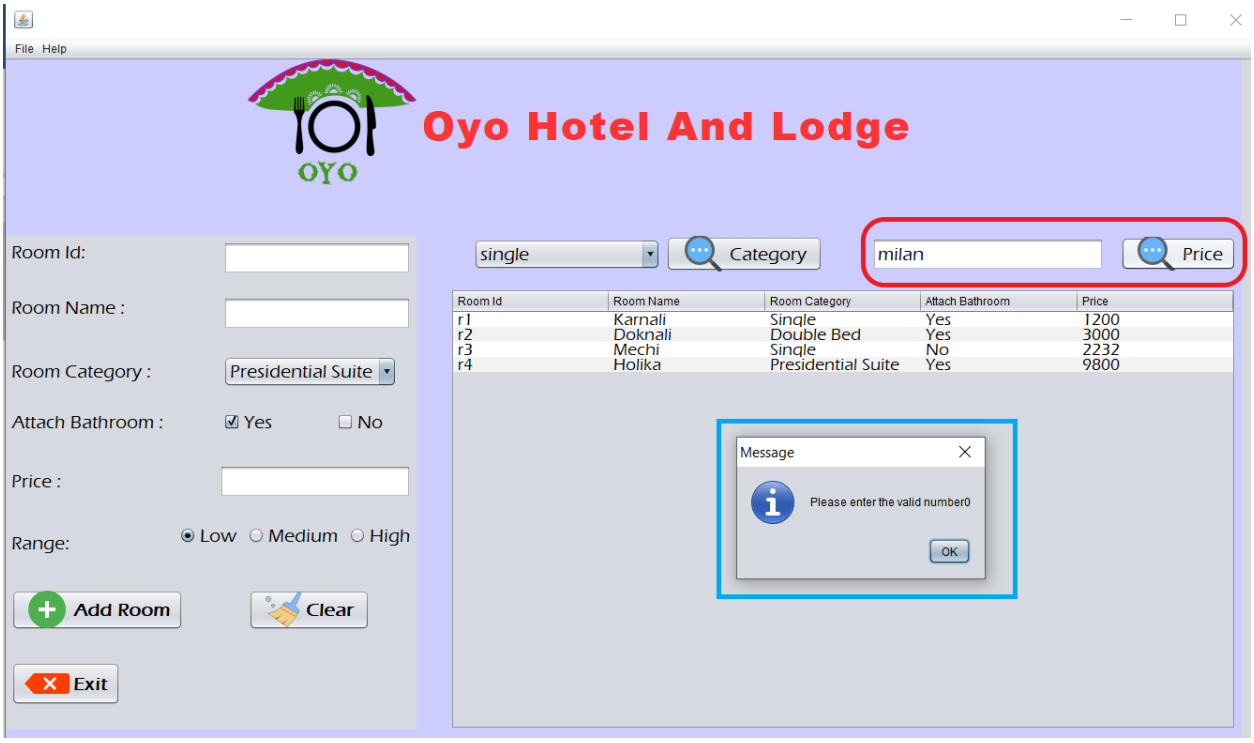


Figure 12: When search button is pressed with string values in search text field.

6.3.5 Add button is pressed while price text filed with string values.

Table 13: Add button is pressed while price text filed with string values

Action	While inserting the value the price text field was filled with string values.
Expected Result	We expected that the input will be unsuccessful, and the input error will be displayed.
Actual Result	The actual result was as expected. The insert was unsuccessful because the price text field was filled with string values.
Test Result	The Test was successful

Figure 13: Add button is pressed while price text filed with string values.

7. Conclusion

At last, finally project of hotel management system is developed facing numerous efforts and challenges from all the group members. Firstly, we were quite nervous and had difficulties to understand the main goal of the coursework. But thereafter, regular discussions with module lecturer, collaboration within the group, research on different sites and hard work are the key factors for solving the problems. As all the task was divided amongst the members of the team, each of us shared our specific knowledge to finish the coursework successfully.

Lately, we came to know much more about the java swing and java awt package. Thereby, we make an outlook of GUI adding various labels, text fields to the panels and panels to the frame. Similarly, we also tested GUI application's visual elements, such as text, buttons, to validate their expected performance as well their functional accuracy. For this, different methods are declared, and various conditions are checked using try catch. Similarly, we also came to know about sorting and searching algorithms techniques. And all of this were done in using NetBeans IDE application.

So, in this way without any major problem the coursework was completed within limited time frame. Implementing this project helps to stores, adds and searches all the information of Hotel in an effective way. We hope this coursework will also help other learners who want to learn java and are beginners in java and wants to learn about swing GUI, binary search, Array, etc. Finishing this coursework builds our self-dependency and critical thinking in upcoming modules. And also, our skills in researching were more polished.

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www.javatpoint.com. (2019). *Java Swing Tutorial - javatpoint*. [online] Available at: https://www.javatpoint.com/java-swing [Accessed 16 Dec. 2019].

9. Appendix

CAD_INFO CLASS

```
import java.awt.Toolkit;

import java.awt.event.WindowEvent;

import java.util.ArrayList;

import java.util.Collections;

import javax.swing.JOptionPane;

import javax.swing.table.DefaultTableModel;


/*

 * To change this license header, choose License Headers in Project Properties.

 * To change this template file, choose Tools | Templates

 * and open the template in the editor.

 */


/**

 *

 * @author Girija Tamang
```

```
 */
public class CAD_Info extends javax.swing.JFrame {
    private ArrayList <Hotel> list = new ArrayList<>();


    /**
     * Creates new form CAD_Info
     */
   public Table 14: Add button is pressed while price text filed with string values
 () {
        initComponents();
    }


    /**
     * This method is called from within the constructor to initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is always
     * regenerated by the Form Editor.
     */
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {
```

```
buttonGroup1 = new javax.swing.ButtonGroup();
jTextField4 = new javax.swing.JTextField();
buttonGroup2 = new javax.swing.ButtonGroup();
rangeRadioGroup = new javax.swing.ButtonGroup();
buttonGroup3 = new javax.swing.ButtonGroup();
jPanel2 = new javax.swing.JPanel();
jScrollPane2 = new javax.swing.JScrollPane();
tblHotel = new javax.swing.JTable();
jLabel4 = new javax.swing.JLabel();
btnPriceSrch = new javax.swing.JButton();
jLabel8 = new javax.swing.JLabel();
jPanel1 = new javax.swing.JPanel();
comRCategory = new javax.swing.JComboBox();
jLabel2 = new javax.swing.JLabel();
btnClear = new javax.swing.JButton();
jLabel5 = new javax.swing.JLabel();
txtRName = new javax.swing.JTextField();
jLabel1 = new javax.swing.JLabel();
jLabel3 = new javax.swing.JLabel();
txtRId = new javax.swing.JTextField();
txtPrice = new javax.swing.JTextField();
```

```
btnBook = new javax.swing.JButton();

jLabel6 = new javax.swing.JLabel();

chkYes = new javax.swing.JCheckBox();

chkNo = new javax.swing.JCheckBox();

r1Low = new javax.swing.JRadioButton();

r2Medium = new javax.swing.JRadioButton();

r3High = new javax.swing.JRadioButton();

jLabel7 = new javax.swing.JLabel();

btnExit = new javax.swing.JButton();

jTextFieldPrice = new javax.swing.JTextField();

btnCateSearch = new javax.swing.JButton();

comCategory = new javax.swing.JComboBox();

jMenuBar1 = new javax.swing.JMenuBar();

jMenu1 = new javax.swing.JMenu();

jMenuItem1 = new javax.swing.JMenuItem();

jMenuItem3 = new javax.swing.JMenuItem();

jSeparator2 = new javax.swing.JPopupMenu.Separator();

jSeparator1 = new javax.swing.JPopupMenu.Separator();

jMenu2 = new javax.swing.JMenu();

jMenuItem4 = new javax.swing.JMenuItem();
```

```
        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setBackground(new java.awt.Color(255, 51, 51));

        jPanel2.setBackground(new java.awt.Color(204, 204, 255));
        jPanel2.setForeground(new java.awt.Color(255, 0, 51));

        tblHotel.setFont(new java.awt.Font("Eras Medium ITC", 0, 18)); // NOI18N
        tblHotel.setModel(new javax.swing.table.DefaultTableModel(
            new Object [][] {

            },
            new String [] {
                "Room Id", "Room Name", "Room Category", "Attach Bathroom", "Price"
            }
        ) {
            boolean[] canEdit = new boolean [] {
                false, false, false, false, false
            };

            public boolean isCellEditable(int rowIndex, int columnIndex) {
                return canEdit [columnIndex];
```

```
        }
    });
    jScrollPane2.setViewportView(tblHotel);

    jLabel4.setIcon(new
javax.swing.ImageIcon(getClass().getResource("/pic/oyo.png"))); // NOI18N

    btnPriceSrch.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
    btnPriceSrch.setIcon(new javax.swing.ImageIcon("E:\\IIC
college\\coursework\\java\\program\\CAD_IS\\src\\pic\\search new.png")); // NOI18N
    btnPriceSrch.setText("Price");
    btnPriceSrch.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            btnPriceSrchActionPerformed(evt);
        }
    });

    jLabel8.setFont(new java.awt.Font("Arial Black", 1, 42)); // NOI18N
    jLabel8.setForeground(new java.awt.Color(255, 51, 51));
    jLabel8.setText("Oyo Hotel And Lodge");

    jPanel1.setForeground(new java.awt.Color(255, 0, 0));
```

```
        comRCategory.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        comRCategory.setModel(new  javax.swing.DefaultComboBoxModel(new  String[]  { "Presidential Suite", "Single", "Double Bed", "Twin", "Triple", "Villa" }));

        jLabel2.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        jLabel2.setText("Room Name :");

        btnClear.setFont(new java.awt.Font("Eras Medium ITC", 1, 20)); // NOI18N
        btnClear.setIcon(new                                javax.swing.ImageIcon("E:\\IIC college\\coursework\\java\\program\\CAD_IS\\src\\pic\\clear yes.png")); // NOI18N
        btnClear.setText("Clear");
        btnClear.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                btnClearActionPerformed(evt);
            }
        });

        jLabel5.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        jLabel5.setText("Attach Bathroom :");

        txtRName.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
```

```
jLabel1.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
jLabel1.setText("Room Id:");

jLabel3.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
jLabel3.setText("Room Category :");

txtRId.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
txtRId.addInputMethodListener(new java.awt.event.InputMethodListener() {
    public void caretPositionChanged(java.awt.event.InputMethodEvent evt) {
    }
    public void inputMethodTextChanged(java.awt.event.InputMethodEvent evt) {
        txtRIdInputMethodTextChanged(evt);
    }
});
txtRId.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        txtRIdActionPerformed(evt);
    }
});
```

```
        txtPrice.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        txtPrice.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                txtPriceActionPerformed(evt);
            }
        });

        btnBook.setFont(new java.awt.Font("Eras Medium ITC", 1, 20)); // NOI18N
        btnBook.setIcon(new javax.swing.ImageIcon("E:\\IIC college\\coursework\\java\\program\\CAD_IS\\src\\pic\\add.png")); // NOI18N
        btnBook.setText("Add Room");
        btnBook.addFocusListener(new java.awt.event.FocusAdapter() {
            public void focusGained(java.awt.event.FocusEvent evt) {
                btnBookFocusGained(evt);
            }
        });
        btnBook.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                btnBookActionPerformed(evt);
            }
        });
```

```
jLabel6.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
jLabel6.setText("Price :");

buttonGroup2.add(chkYes);
chkYes.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
chkYes.setSelected(true);
chkYes.setText("Yes");

buttonGroup2.add(chkNo);
chkNo.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
chkNo.setText("No");

rangeRadioGroup.add(r1Low);
r1Low.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
r1Low.setSelected(true);
r1Low.setText("Low");
r1Low.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        r1LowActionPerformed(evt);
    }
```

```
        });

        rangeRadioGroup.add(r2Medium);
        r2Medium.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        r2Medium.setText("Medium");

        rangeRadioGroup.add(r3High);
        r3High.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        r3High.setText("High");

        jLabel7.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        jLabel7.setText("Range:");

        btnExit.setFont(new java.awt.Font("Eras Medium ITC", 1, 20)); // NOI18N
        btnExit.setIcon(new javax.swing.ImageIcon("E:\\IIC college\\coursework\\java\\program\\CAD_IS\\src\\pic\\icons8-clear-symbol-48.png")); // NOI18N
        btnExit.setText("Exit");
        btnExit.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                btnExitActionPerformed(evt);
            }
```

```
        });

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addContainerGap()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()
                        .addComponent(jLabel7)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                        .addComponent(r1Low)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                        .addComponent(r2Medium)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
```

```
                .addComponent(r3High))
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addComponent(jLabel6)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(txtPrice,  javax.swing.GroupLayout.PREFERRED_SIZE,
204, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addComponent(jLabel1)
                .addComponent(jLabel2))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING, false)
                .addComponent(comRCategory,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
                .addComponent(txtRId,
javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.DEFAULT_SIZE, 200, Short.MAX_VALUE)

                .addComponent(txtRName,
javax.swing.GroupLayout.Alignment.TRAILING)

                .addGroup(jPanel1Layout.createSequentialGroup()

                    .addComponent(chkYes)


.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

                    .addComponent(chkNo)

                    .addGap(30, 30, 30))))

            .addGroup(jPanel1Layout.createSequentialGroup()


.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)

                .addGroup(jPanel1Layout.createSequentialGroup()

                    .addComponent(btnBook)

                    .addGap(70, 70, 70)

                    .addComponent(btnClear,
javax.swing.GroupLayout.PREFERRED_SIZE,                    129,
javax.swing.GroupLayout.PREFERRED_SIZE))

                .addComponent(jLabel3)

                .addComponent(jLabel5)
```

```
                    .addComponent(btnExit))
                .addGap(0, 0, Short.MAX_VALUE)))
            .addContainerGap())
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addContainerGap()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent(jLabel1)
                    .addComponent(txtRId, javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(24, 24, 24)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent(jLabel2)
                    .addComponent(txtRName, javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
            .addGap(28, 28, 28)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)

                .addComponent(jLabel3)

                .addComponent(comRCategory,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))

            .addGap(26, 26, 26)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)

                .addComponent(jLabel5)

                .addComponent(chkNo)

                .addComponent(chkYes))

            .addGap(34, 34, 34)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)

                .addComponent(jLabel6)

                .addComponent(txtPrice,      javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(37, 37, 37)
                    .addComponent(jLabel7))
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(29, 29, 29)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                        .addComponent(r3High)
                        .addComponent(r2Medium)
                        .addComponent(r1Low))))
            .addGap(38, 38, 38)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(btnBook,     javax.swing.GroupLayout.PREFERRED_SIZE, 43, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(btnClear,     javax.swing.GroupLayout.PREFERRED_SIZE, 43, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 34, Short.MAX_VALUE)
```

```
            .addComponent(btnExit, javax.swing.GroupLayout.PREFERRED_SIZE, 46, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(26, 26, 26))
        );

        jTextFieldPrice.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        jTextFieldPrice.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jTextFieldPriceActionPerformed(evt);
            }
        });

        btnCateSearch.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        btnCateSearch.setIcon(new javax.swing.ImageIcon("E:\\IIC college\\coursework\\java\\program\\CAD_IS\\src\\pic\\search new.png")); // NOI18N
        btnCateSearch.setText("Category");
        btnCateSearch.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                btnCateSearchActionPerformed(evt);
            }
        });
```

```
        comCategory.setFont(new java.awt.Font("Eras Medium ITC", 0, 20)); // NOI18N
        comCategory.setModel(new javax.swing.DefaultComboBoxModel(new String[] { "Presidential Suite", "single", "Double Bed", "Twin", "Triple", "Villa" }));
        comCategory.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                comCategoryActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(
            jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(jPanel2Layout.createSequentialGroup()
                        .addContainerGap(248, Short.MAX_VALUE)
                        .addComponent(jLabel4, javax.swing.GroupLayout.PREFERRED_SIZE, 190, javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
            .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)

            .addGroup(jPanel2Layout.createSequentialGroup()

                .addComponent(jLabel8)

                .addGap(0, 0, Short.MAX_VALUE))

            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()

                .addGap(0, 30, Short.MAX_VALUE)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING, false)

                    .addComponent(jScrollPane2,
javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.PREFERRED_SIZE,                    838,
javax.swing.GroupLayout.PREFERRED_SIZE)

                    .addGroup(jPanel2Layout.createSequentialGroup()

                        .addGap(25, 25, 25)

                        .addComponent(comCategory,
javax.swing.GroupLayout.PREFERRED_SIZE,                    199,
javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                    .addComponent(btnCateSearch,
javax.swing.GroupLayout.PREFERRED_SIZE,                    167,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                    .addComponent(jTextFieldPrice,
javax.swing.GroupLayout.PREFERRED_SIZE,                    247,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addGap(18, 18, 18)
                    .addComponent(btnPriceSrch)))))
            .addContainerGap())
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addComponent(jLabel4,      javax.swing.GroupLayout.PREFERRED_SIZE,
134, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGroup(jPanel2Layout.createSequentialGroup()
```

```
                .addGap(25, 25, 25)
                .addComponent(jLabel8,  javax.swing.GroupLayout.PREFERRED_SIZE,
89, javax.swing.GroupLayout.PREFERRED_SIZE)))
            .addGap(54, 54, 54)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addComponent(jPanel1,      javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGroup(jPanel2Layout.createSequentialGroup()

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                    .addComponent(comCategory,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(btnCateSearch,
javax.swing.GroupLayout.PREFERRED_SIZE,                    38,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(btnPriceSrch,
javax.swing.GroupLayout.PREFERRED_SIZE,                    36,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jTextFieldPrice,
javax.swing.GroupLayout.PREFERRED_SIZE,
```

```
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(18, 18, 18)
                .addComponent(jScrollPane2,
javax.swing.GroupLayout.PREFERRED_SIZE,                    470,
javax.swing.GroupLayout.PREFERRED_SIZE)))
            .addGap(32, 32, 32))
        );


        jMenu1.setText("File");


jMenuItem1.setAccelerator(javax.swing.KeyStroke.getKeyStroke(java.awt.event.KeyEv
ent.VK_O, java.awt.event.InputEvent.CTRL_MASK));
        jMenuItem1.setText("Open File");
        jMenuItem1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jMenuItem1ActionPerformed(evt);
            }
        });
        jMenu1.add(jMenuItem1);
```

```
jMenuItem3.setAccelerator(javax.swing.KeyStroke.getKeyStroke(java.awt.event.KeyEvent.VK_E, java.awt.event.InputEvent.CTRL_MASK));
        jMenuItem3.setText("Exit");
        jMenuItem3.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jMenuItem3ActionPerformed(evt);
            }
        });
        jMenu1.add(jMenuItem3);
        jMenu1.add(jSeparator2);
        jMenu1.add(jSeparator1);

        jMenuBar1.add(jMenu1);

        jMenu2.setText("Help");

jMenuItem4.setAccelerator(javax.swing.KeyStroke.getKeyStroke(java.awt.event.KeyEvent.VK_E, java.awt.event.InputEvent.CTRL_MASK));
        jMenuItem4.setText("Manual");
        jMenuItem4.addActionListener(new java.awt.event.ActionListener() {
```

```
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jMenuItem4ActionPerformed(evt);
        }
    });
    jMenu2.add(jMenuItem4);

    jMenuBar1.add(jMenu2);

    setJMenuBar(jMenuBar1);

    javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
    getContentPane().setLayout(layout);
    layout.setHorizontalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(0, 24, Short.MAX_VALUE))
    );
    layout.setVerticalGroup(
```

```
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(0, 329, Short.MAX_VALUE))
        );


        pack();
    }// </editor-fold>


    private void jMenuItem1ActionPerformed(java.awt.event.ActionEvent evt) {
        try
        {
          Runtime.getRuntime().exec("rundll32 url.dll, FileProtocolHandler " + "E:\\IIC
college\\coursework\\java\\A20 CS5004NT A1 CW L2-C2 Group D.docx" );
        }
        catch (Exception e)
        {
            JOptionPane.showMessageDialog(null, "Error");
        }
```

```
    }

    private void jMenuItem3ActionPerformed(java.awt.event.ActionEvent evt) {
        WindowEvent winCloseEvent = new WindowEvent(this, WindowEvent.WINDOW_CLOSING);
        Toolkit.getDefaultToolkit().getSystemEventQueue().postEvent(winCloseEvent);
    }

    private void jTextFieldPriceActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }


    private void btnBookActionPerformed(java.awt.event.ActionEvent evt) {
        try
        {
            String roomId,roomName,rCategory,aBathroom;
            int price;
            aBathroom="Yes";
```

```
roomId = txtRId.getText().trim();

roomName = txtRName.getText().trim();

rCategory = (String)comRCategory.getSelectedItem();

price = Integer.parseInt(txtPrice.getText());


if(chkYes.isSelected())

{


    aBathroom = "Yes";

}

if(chkNo.isSelected())

{

    aBathroom = "No";

}


if(( r1Low.isSelected() && price>4000) || (r1Low.isSelected() && price<1000))

{


   JOptionPane.showMessageDialog(null,"Price range is between 1000 and 4000","ERROR",JOptionPane.ERROR_MESSAGE);

}
```

```
else if((r2Medium.isSelected() && price>9000 || (r2Medium.isSelected() && price<4000)))
{
   JOptionPane.showMessageDialog(null,"Price range is between 4000 and 8000","ERROR",JOptionPane.ERROR_MESSAGE);
}
else if(r3High.isSelected() && price>17000)
{
   JOptionPane.showMessageDialog(null,"Price is in the range upto 15000","ERROR",JOptionPane.ERROR_MESSAGE);
}
else if(roomId.length()==0)
{
   JOptionPane.showMessageDialog(null,"Room id cannot be null","ERROR",JOptionPane.ERROR_MESSAGE);
}
else
{
   boolean flag = false;
   if(tblHotel.getRowCount()==0)
   {
      flag = true;
```

```
        }
        else if(tblHotel.getRowCount()>0)
        {
            for(Hotel s:list)
            {
                if(s.getRoomId().equals(roomId))
                {
                    flag = false;
                    JOptionPane.showMessageDialog(rootPane,"Room Id already exist.","Error",JOptionPane.ERROR_MESSAGE);
                    break;
                }
                else
                {
                    flag = true;
                }

            }
        }

        if(flag)
```

```
            {
                DefaultTableModel model = (DefaultTableModel) tblHotel.getModel();
                    model.addRow(new
Object[]{roomId,roomName,rCategory,aBathroom,price});
                    Hotel object = new Hotel(roomId,roomName,rCategory,price);
                    list.add(object);
                    clearAll();

            }
          }
       }
       catch(Exception e)
       {
          JOptionPane.showMessageDialog(rootPane,"Enter                    right
value","Error",JOptionPane.ERROR_MESSAGE);
       }
   }

   public void clearAll()
   {
      txtRId.setText("");
      txtRName.setText("");
```

```
        txtPrice.setText("");
        comRCategory.setSelectedIndex(0);
        chkYes.setSelected(true);
        r1Low.setSelected(true);
    }

    private void btnBookFocusGained(java.awt.event.FocusEvent evt) {
        // TODO add your handling code here:
    }

    private void txtPriceActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }

    private void txtRIdActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }

    private void btnClearActionPerformed(java.awt.event.ActionEvent evt) {
        clearAll();
    }
```

```
    public void sort()
    {
        for(int i=0;i<list.size();i++)
        {
            int min=i;
            for(int j=min+1; j<list.size();j++)
            {
                if(list.get(j).getPrice() < list.get(min).getPrice())
                {
                    min = j;
                }
            }
            Collections.swap(list,i,min);
        }

    }

    private void btnPriceSrchActionPerformed(java.awt.event.ActionEvent evt) {
        try
        {
```

```
        if(!jTextFieldPrice.equals(""))
        {
            sort();
            int start = Integer.parseInt(jTextFieldPrice.getText());
            int result = binarySearch(list, 0, list.size()-1, start);
            if(result == -1){
                JOptionPane.showMessageDialog(rootPane,"unsuccess","price not found",JOptionPane.INFORMATION_MESSAGE);
             }
            else
            {
                JOptionPane.showMessageDialog(null, "Room id:"+" "+list.get(result).getRoomId()+
                    "\n"+"Room name :"+" "+ list.get(result).getRoomName()+"\n"+
                      "Room category: "+list.get(result).getRoomCategory()+"\n"+
                      "price: "+list.get(result).getPrice(),
                   "Search Result",+JOptionPane.INFORMATION_MESSAGE);
             }
        }
        else
        {
```

```
            JOptionPane.showMessageDialog(null, "Please enter the price"+JOptionPane.ERROR_MESSAGE);
        }
    }
    catch(NumberFormatException e)
    {
        JOptionPane.showMessageDialog(null, "Please enter the valid number" + JOptionPane.ERROR_MESSAGE);
    }
  }

  private int binarySearch(ArrayList<Hotel> list, int low, int high, int value){
    if(low<=high){
        int mid = (low+high)/2;
        if(list.get(mid).getPrice() == value){
            return mid;
        } else if(list.get(mid).getPrice() > value){
            return binarySearch(list, low, mid-1, value);
        }
        else{
            return binarySearch(list, mid+1, high, value);
        }
```

```
        }else{
            return -1;
        }
    }
    private void btnCateSearchActionPerformed(java.awt.event.ActionEvent evt) {
        try
        {
            String search = comCategory.getSelectedItem().toString();
            ArrayList<Hotel> match = new ArrayList<>();
            String msg = "";
            for(Hotel i: list)
                {
                    if(i.getRoomCategory().equalsIgnoreCase(search))
                      {
                       match.add(i);
                       msg += i.getRoomName() +" ";
                       }


                }
            JOptionPane.showMessageDialog(null,"There are "+ match.size()+ " number of categories found. They are: "+msg);
```

```
        }
        catch(Exception e)
        {

        }
    }

    private void r1LowActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }

    private void txtRIdInputMethodTextChanged(java.awt.event.InputMethodEvent evt) {
        // TODO add your handling code here:

    }

    private void comCategoryActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }
```

```
    private void btnExitActionPerformed(java.awt.event.ActionEvent evt) {

        int close = JOptionPane.showConfirmDialog(rootPane, "Do you want to exit", "Confirm",JOptionPane.YES_NO_OPTION);

        if(close == JOptionPane.YES_NO_OPTION)

        {

            System.exit(0);

        }

    }


    private void jMenuItem4ActionPerformed(java.awt.event.ActionEvent evt) {

        try

        {

          Runtime.getRuntime().exec("rundll32 url.dll, FileProtocolHandler " + "E:\\IIC college\\coursework\\java\\final\\manual.docx" );

        }

        catch (Exception e)

        {

            JOptionPane.showMessageDialog(null, "Error");

        }


    }
```

```
    /**
     * @param args the command line arguments
     */
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
         * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {
```

```
java.util.logging.Logger.getLogger(CAD_Info.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {
java.util.logging.Logger.getLogger(CAD_Info.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(CAD_Info.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(CAD_Info.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new CAD_Info().setVisible(true);
            }
        });
```

```
    }


    // Variables declaration - do not modify
    private javax.swing.JButton btnBook;
    private javax.swing.JButton btnCateSearch;
    private javax.swing.JButton btnClear;
    private javax.swing.JButton btnExit;
    private javax.swing.JButton btnPriceSrch;
    private javax.swing.ButtonGroup buttonGroup1;
    private javax.swing.ButtonGroup buttonGroup2;
    private javax.swing.ButtonGroup buttonGroup3;
    private javax.swing.JCheckBox chkNo;
    private javax.swing.JCheckBox chkYes;
    private javax.swing.JComboBox comCategory;
    private javax.swing.JComboBox comRCategory;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JLabel jLabel6;
```

```
    private javax.swing.JLabel jLabel7;
    private javax.swing.JLabel jLabel8;
    private javax.swing.JMenu jMenu1;
    private javax.swing.JMenu jMenu2;
    private javax.swing.JMenuBar jMenuBar1;
    private javax.swing.JMenuItem jMenuItem1;
    private javax.swing.JMenuItem jMenuItem3;
    private javax.swing.JMenuItem jMenuItem4;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JScrollPane jScrollPane2;
    private javax.swing.JPopupMenu.Separator jSeparator1;
    private javax.swing.JPopupMenu.Separator jSeparator2;
    private javax.swing.JTextField jTextField4;
    private javax.swing.JTextField jTextFieldPrice;
    private javax.swing.JRadioButton r1Low;
    private javax.swing.JRadioButton r2Medium;
    private javax.swing.JRadioButton r3High;
    private javax.swing.ButtonGroup rangeRadioGroup;
    private javax.swing.JTable tblHotel;
    private javax.swing.JTextField txtPrice;
```

```
    private javax.swing.JTextField txtRId;
    private javax.swing.JTextField txtRName;
    // End of variables declaration
}
```

POJO CLASS

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */


/**
 *
 * @author Milan dada
 */
public class Hotel {
    private int price;
    private String aBathroom;
    private String roomId;
    private String roomName;
    private String roomCategory;


    public Hotel(String roomId,String roomName,String roomCategory,int price)
    {
        this.price =price;
```

```
        this.aBathroom = aBathroom;
        this.roomId = roomId;
        this.roomName = roomName;
        this.roomCategory = roomCategory;
    }
    public int getPrice()
            {
                return price;
            }
    public String getABathroom()
    {
        return aBathroom;
    }
    public String getRoomId()
    {
        return roomId;
    }
    public String getRoomName()
    {
        return roomName;
    }
```

```
    public String getRoomCategory()
    {
        return roomCategory;
    }
}
```