

IT5512- WEB TECHNOLOGY LAB-SESSION-7

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JAVA GRAPHICAL USER INTERFACE USING SWING

1)AIM:

To write a GUI java program to display the calendar of the given year and month

PROGRAM CODE:

```
import javax.swing.*;
import javax.swing.table.JTableHeader;
import java.awt.*;
import java.awt.FlowLayout;
import java.awt.GridLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.Calendar;
import java.util.HashMap;

class CalendarFrame extends JFrame{
    public CalendarFrame(){
        this.getContentPane().setBackground(Color.MAGENTA);
        this.setDefaultCloseOperation(EXIT_ON_CLOSE);
        this.setTitle("Calendar GUI App");
```

```

        ImageIcon imagelcon = new ImageIcon("D:\\Interview\\Java
Swings\\SwingPrograms\\src\\Images\\Calendar.png");

        this.setIconImage(imagelcon.getImage());

        this.setVisible(true);
    }
}

public class CalendarProject implements ActionListener {

    private static CalendarFrame frame = new CalendarFrame();
    private static JButton submit = new JButton();
    private static JPanel buttonPanel = new JPanel();
    private static JPanel monthPanel = new JPanel();
    private static JLabel monthLabel = new JLabel();
    private static JTextField monthField = new JTextField();
    private static final JPanel yearPanel = new JPanel();
    private static JLabel yearLabel = new JLabel();
    private static JTextField yearField = new JTextField();
    private static JPanel inputPanel = new JPanel();

    public static void setButton(CalendarFrame frame,JPanel inputPanel){

        submit.setText("Submit");
        submit.setFocusable(false);
        submit.addActionListener(new CalendarProject());
        submit.setFont(new Font("Consolas" , Font.ITALIC,20));
        submit.setSize(50,50);
        submit.setBackground(new Color(0xC36839));
        submit.setForeground(Color.WHITE);
        buttonPanel.setLayout(new FlowLayout());
    }
}

```

```

    buttonPanel.add(submit);
    buttonPanel.setPreferredSize(new Dimension(500,50));
    buttonPanel.setBackground(new Color(0x6ECB63));
    inputPanel.add(buttonPanel,BorderLayout.SOUTH);
}

public static void setMonthField(CalendarFrame frame , JPanel inputPanel){
    monthLabel.setVerticalAlignment(JLabel.CENTER);
    monthField.setPreferredSize(new Dimension(200,40));
    monthPanel.setLayout(new FlowLayout(FlowLayout.CENTER));
    monthLabel.setText("Enter the month :");
    monthLabel.setFont(new Font("Consolas" , Font.ITALIC,20));
    monthField.setFont(new Font("Consolas" , Font.BOLD,20));
    monthField.setBackground(new Color(0x86340A));
    monthField.setForeground(Color.WHITE);
    monthPanel.add(monthLabel);
    monthPanel.add(monthField);
    monthPanel.setPreferredSize(new Dimension(500,40));
    monthPanel.setBackground(Color.ORANGE);
    inputPanel.add(monthPanel,BorderLayout.CENTER);
}

public static void setYearField(CalendarFrame frame,JPanel inputPanel){
    yearField.setPreferredSize(new Dimension(200,40));
    yearPanel.setLayout(new FlowLayout(FlowLayout.CENTER));
    yearLabel.setText("Enter the year :");
    yearField.setFont(new Font("Consolas" , Font.BOLD,20));
    yearField.setBackground(new Color(0x86340A));

```

```

yearField.setForeground(Color.WHITE);
yearLabel.setFont(new Font("Consolas" , Font.ITALIC,20));
yearPanel.add(yearLabel);
yearPanel.add(yearField);
yearPanel.setPreferredSize(new Dimension(500,100));
yearPanel.setBackground(Color.PINK);
inputPanel.add(yearPanel,BorderLayout.NORTH);
}

public static void setHeader(CalendarFrame frame){
    inputPanel.setLayout(new GridLayout(3,1));
    inputPanel.setPreferredSize(new Dimension(100,200));
    frame.setLayout(new BorderLayout(0,10));
    frame.add(inputPanel,BorderLayout.NORTH);
    setYearField(frame , inputPanel);
    setMonthField(frame,inputPanel);
    setButton(frame,inputPanel);
}

```

@Override

```

public void actionPerformed(ActionEvent e) {
    if(e.getSource() == submit) {
        String monthValue = monthField.getText();
        String yearValue = yearField.getText();
        //System.out.println("Month Value is :"+ monthValue + " and year value is :"+ yearValue);
        if(monthValue.length() == 0 || yearValue.length() == 0){

```

```
JOptionPane.showMessageDialog(null,"Empty Value Please Enter !!!","Invalid Value",JOptionPane.QUESTION_MESSAGE);  
}
```

```
else if ((Integer.parseInt(monthValue) >= 1 && Integer.parseInt(monthValue) <= 12) &&  
yearValue.length() == 4) {
```

```
    HashMap<Integer, Integer> monthDay = new HashMap<>();
```

```
    monthDay.put(1, 31);
```

```
    monthDay.put(2, 28);
```

```
    monthDay.put(3, 31);
```

```
    monthDay.put(4, 30);
```

```
    monthDay.put(5, 31);
```

```
    monthDay.put(6, 30);
```

```
    monthDay.put(7, 31);
```

```
    monthDay.put(8, 31);
```

```
    monthDay.put(9, 30);
```

```
    monthDay.put(10, 31);
```

```
    monthDay.put(11, 30);
```

```
    monthDay.put(12, 31);
```

```
    int yy = Integer.parseInt(yearValue);
```

```
    int mm = Integer.parseInt(monthValue);
```

```
//    System.out.println("The year is " + yy + " month is " + mm);
```

```
    String []dy = {"SUN", "MON", "TUE", "WED", "THU", "FRI", "SAT"};
```

```
    ArrayList<String> days = new ArrayList<>(Arrays.asList("SUN", "MON", "TUE", "WED",  
"THU", "FRI", "SAT"));
```

```
    Calendar cal = Calendar.getInstance();
```

```
    cal.set(yy, mm - 1, 1);
```

```

String [][]mat = new String[6][7];
String startDay = days.get(cal.get(Calendar.DAY_OF_WEEK)-1);
//      System.out.println(startDay);
int col = 0;
int row = 0;
for(; col < days.indexOf(startDay) ; col++){
    mat[row][col] = " ";
}
int indexToDays = days.indexOf(startDay);
boolean set = true;
for(int i = 1 ; i <= monthDay.get(10) ; i++){
    if(col == 6){
        mat[row][col] = String.valueOf(i);
        row ++;
        col = 0;
    }
    else{
        mat[row][col] = String.valueOf(i);
        col++;
    }
}

//      System.out.println();

//      for(int i = 0 ; i < mat.length ; i++){
//          for(int j = 0 ; j < mat[i].length ; j++){

```

```

//          System.out.print(mat[i][j] + " ");
//      }
//          System.out.println();
//      }

JTable table = new JTable(mat,dy);
table.setBounds(30, 40, 200, 100);
table.setRowHeight(50);
table.setBackground(Color.ORANGE);
JTableHeader header = table.getTableHeader();
header.setPreferredSize(new Dimension(100,74));
header.setBackground(new Color(0xFF8243));
header.setForeground(Color.WHITE);
JPanel outputPanel = new JPanel();
outputPanel.setBackground(Color.MAGENTA);
outputPanel.setPreferredSize(new Dimension(300,200));
JScrollPane sp = new JScrollPane(table);
sp.setSize(new Dimension(300,150));
outputPanel.add(sp);
frame.add(outputPanel,BorderLayout.CENTER);

}

else if(yearValue.length() != 4){
    JOptionPane.showMessageDialog(null,"Invalid Year value Please enter a 4 digit number
!!!","Invalid Value",JOptionPane.QUESTION_MESSAGE);
}

```

```

else if(!(Integer.parseInt(monthValue) >= 1 && Integer.parseInt(monthValue) <= 12)){
    JOptionPane.showMessageDialog(null,"Invalid Month value Please enter a value
between 1 and 12","Invalid Value",JOptionPane.QUESTION_MESSAGE);
}

}

}

public static void main(String[] args) {
    setHeader(frame);
}
}

```

OUTPUT:

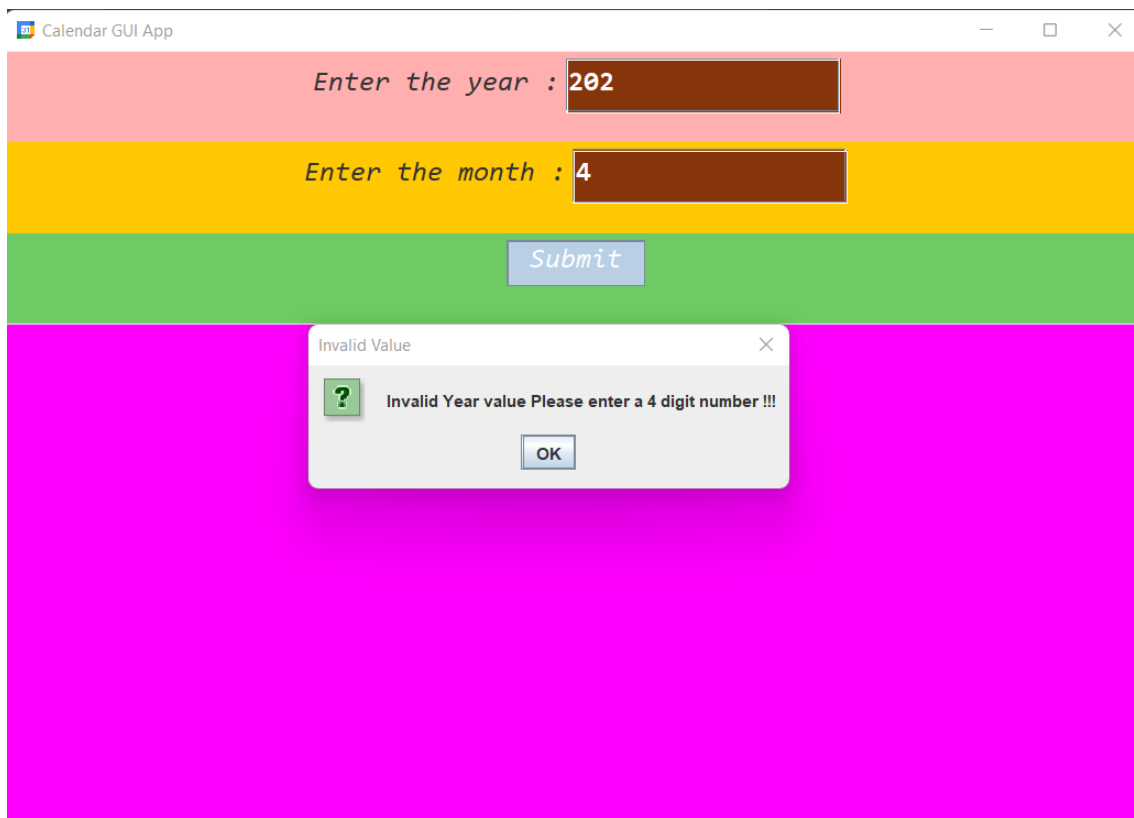
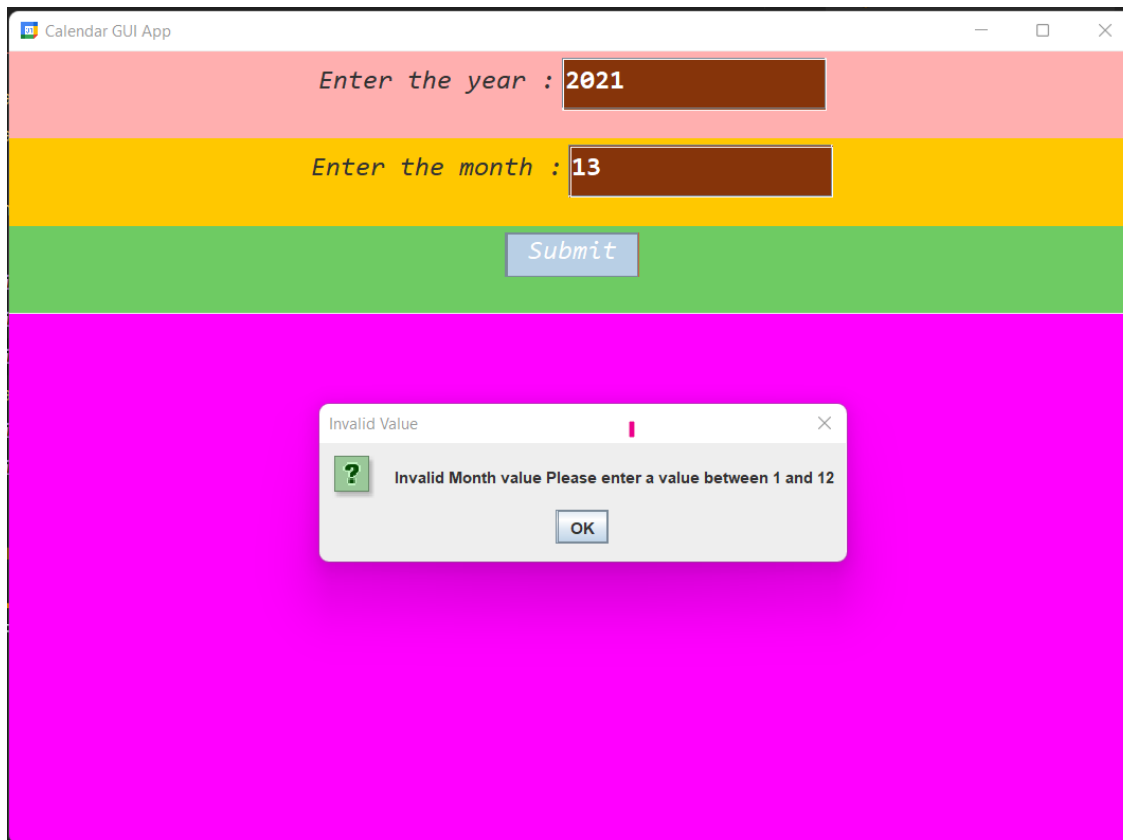
Calendar GUI App

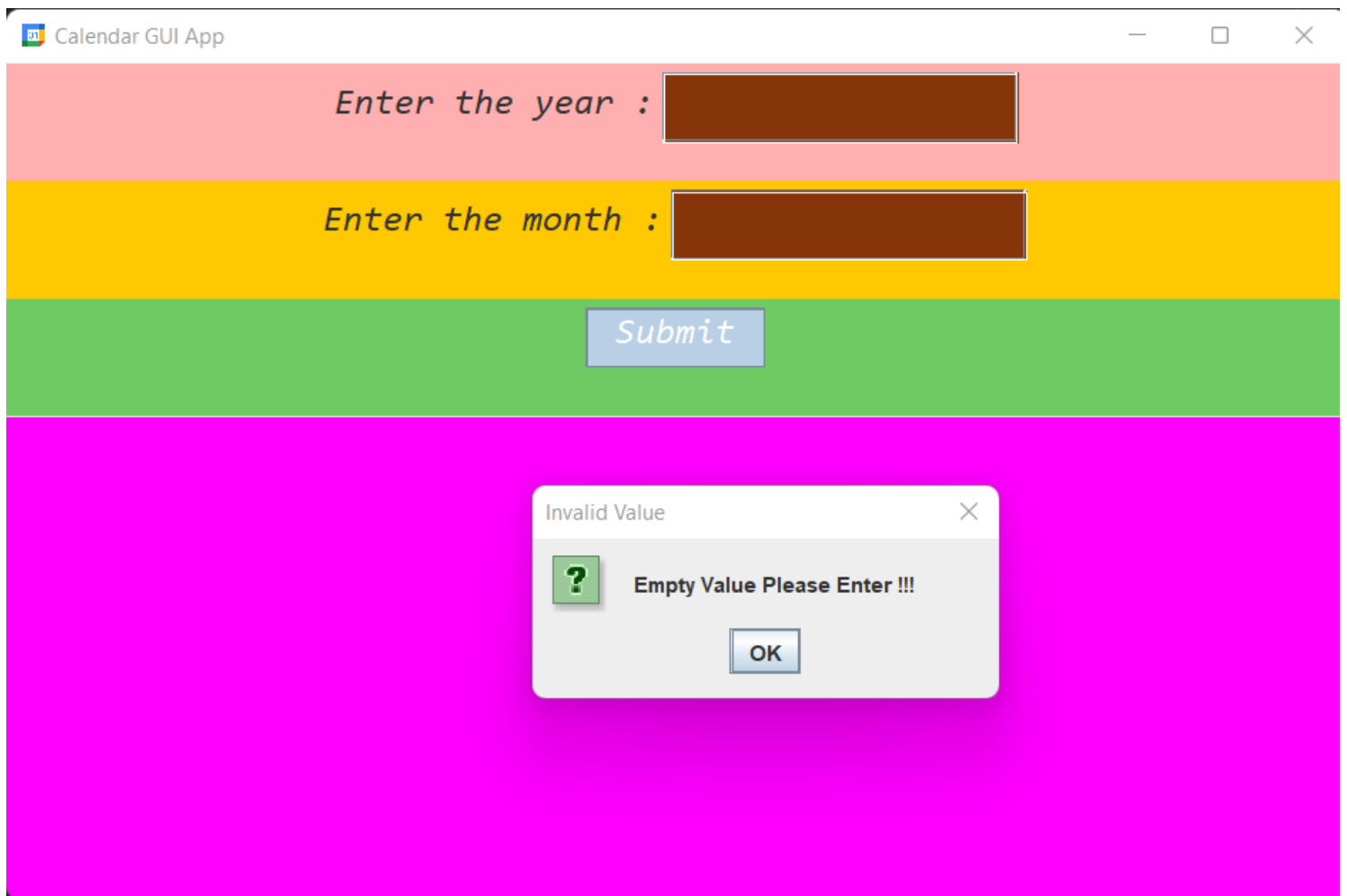
Enter the year : 2021

Enter the month : 10

Submit

SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						





RESULT :Thus simple GUI program using Java is executed successfully.