PROJECT REPORT

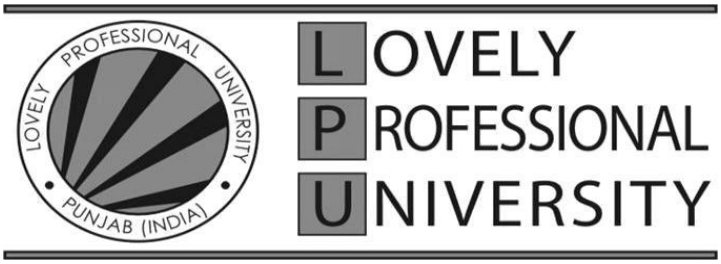
(Project Term Jan - Apr, 2023)

DIGITAL-CLOCK

Submitted by

NAME OF STUDENTS	REGISTRATION NUMBER	SECTION	GROUP
Sai Madhav	**12111544**	**K21YK**	**2**
Naga venkat	**12111413**	**K21YK**	**1**
Mohammad Ismail	**12106199**	**K21YK**	**2**

School of Computer Science and Engineering



DECLARATION

We hereby declare that the project work entitled “DIGITAL -CLOCK” is an authentic record of our own work carried out in B.Tech degree in Computer Science and Engineering from Lovely Professional University, Phagwara, under the guidance of Ms. Chandani Bhasin , during Jan to Mar 2023. All the information furnished in this project report is based on our own intensive work and is genuine.

Attributes of the Digital clock -:

1. Time would be showed to the user as 24 hours time format
2. Month and year were also added in this project

2. objective of the Clock -:
To make a match with time running around.

ACKNOWLEDGEMENT

We take this opportunity to present our votes of thanks to all those guidepost who really acted as lightening pillars to enlighten our way throughout this project that has led to successful and satisfactory completion of this study.

We are really grateful to Chandani Mam for providing us with an opportunity to undertake this project and providing us with all the facilities. I am highly thankful to mam for her active support, valuable time and advice, whole-hearted guidance, sincere cooperation and pains-taking involvement during the study and in completing the assignment of preparing the said project within the time stipulated.

Lastly, I am thankful to all those, particularly the various friends , who have been instrumental in creating proper, healthy and conductive environment and including new and fresh innovative ideas for us during the project, without their help, it would have been extremely difficult for us to prepare the project in a time bound framework**.**

INDEX

INTRODUCTION

A digital clock project in Java can be a great way to learn about the basics of programming, user interfaces, and working with date and time in Java. In this project, you will create a graphical user interface (GUI) that displays the current time in a digital clock format.

OBJECTIVE

The objective of a digital clock in Java is to create a graphical user interface that displays the current time in a digital format. The digital clock serves as a useful application for users who need to keep track of time while working on a computer or mobile device. The digital clock project in Java also serves as a learning opportunity for beginners to learn about programming, user interface design, and working with date and time in Java.

FEASIBILITY STUDY

Every project would be feasible, if provided with unlimited resources and unlimited time. But unfortunately, the development of computer-based system of game is more likely plagued by a security of resources and difficult time constraint. It is both necessary and prudent to evaluate the feasibility of the project at the earliest possible time. During software engineering we concentrate our attention on four primary area of interest. The techniques used in conducting an initial investigation and feasibility study are very similar but the objectives are not so.

The major objectives of feasibility study are to further define the problem and to determine the best way to solve it. The typical primary objectives are:

- A centralized database will be developed.
- Runtime operating decision-making will be eliminated.
- Unnecessary control procedure will be automated.
- The minimum of paper work should be produced.

The output produced by the system should be in a usable format

Requirement of project

Hardware and Software Requirements of Project

Hardware Requirement:

Here is the recommended hardware requirement for this software to run efficiently.

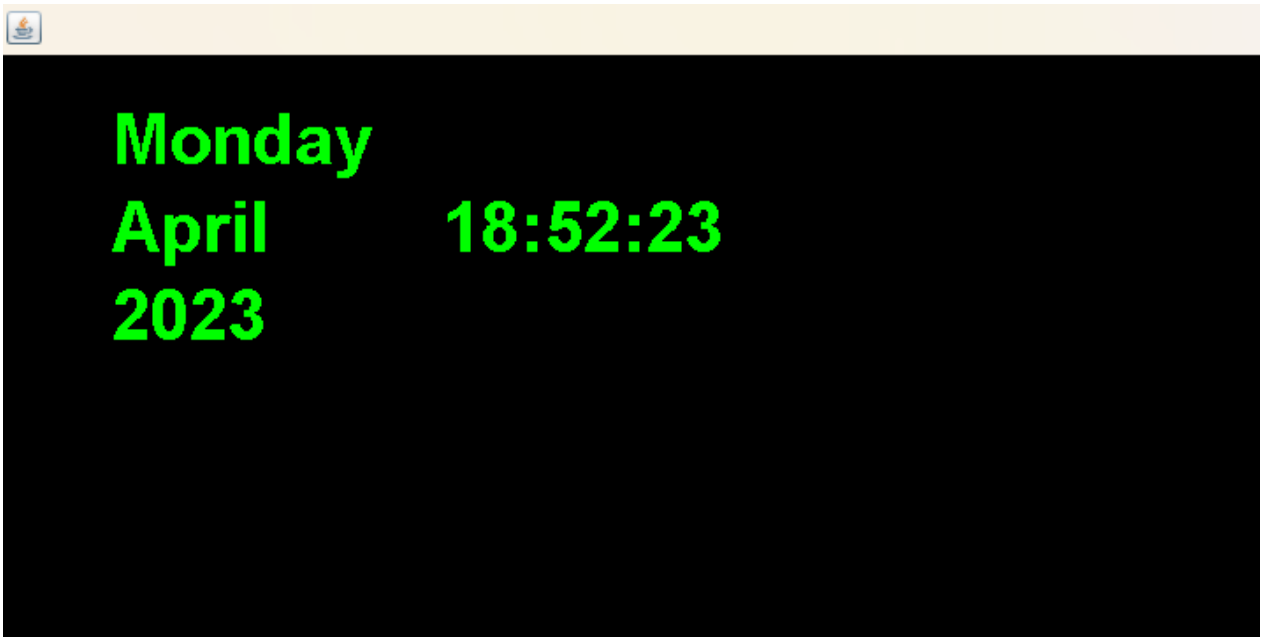
1) Intel core i5 or higher processor
2) 10 MB RAM
3) 15 MB free hard disc space
4) SVGA monitors / Laptops
5) Printer (Optional)

Software Requirement:

This software comes under application software. So the necessary software for this is

1) Windows operating system family.
2) JDK
3) Sqlite3 or any other database

Status of the project



Project File Structure

1. Start by creating a new Java project in your preferred Integrated Development Environment (IDE) such as Eclipse or IntelliJ.

2. Create a new Java class called "DigitalClock" that will serve as the main class for your project.
Import the necessary Java libraries to work with date and time. For example, you can import java.util.Date and java.text.SimpleDateFormat.

3. Create a new JFrame object to serve as the main window for your GUI. Set its size, title, and other properties as desired.
4. Create a new JLabel object to display the current time. Set its font, size, and position on the JFrame as desired.
5. Create a new Timer object that will update the JLabel with the current time every second. Use the Timer's ActionListener interface to define what happens each time the timer fires.
6. In the ActionListener implementation, get the current date and time using the java.util.Date class. Format the date and time as a string using the SimpleDateFormat class.
7.Set the text of the JLabel to the formatted date and time string.

8.Run the project and test your digital clock GUI. You should see the current time displayed on the JLabel, with the text updating every second.

Bibliography

The matter contained in this project has been taken from the given links:-

* how to think like a computer scientist by allen downey, jeffrey elkner, chris

https://www.tutorialspoint.com/java/java_gui_programming.html

https://readthedocs.org/projects/java-guide/downloads/pdf/latest.html

CODE:-

```
import java.awt.Color;
import java.awt.Dimension;
import java.awt.Font;
import java.awt.Graphics;
import java.time.LocalDate;
import java.time.LocalTime;
import java.time.format.DateTimeFormatter;
import java.util.concurrent.TimeUnit;
import javax.swing.JFrame;
import javax.swing.JPanel;

public class DigitalClock {
public static void main(String[] args) throws InterruptedException {
JFrame frame = new JFrame();
ClockPanel panel = new ClockPanel();
frame.add(panel);
frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frame.pack();
frame.setLocationRelativeTo(null);
frame.setVisible(true);
while (true) {
LocalTime time = LocalTime.now();
LocalDate date = LocalDate.now();
String formattedTime = time.format(DateTimeFormatter.ofPattern("HH:mm:ss"));
String formattedWeekday = date.format(DateTimeFormatter.ofPattern("EEEE"));
String formattedMonth = date.format(DateTimeFormatter.ofPattern("MMMM"));
String formattedYear = date.format(DateTimeFormatter.ofPattern("yyyy"));
panel.setTime(formattedWeekday, formattedMonth, formattedYear, formattedTime);
TimeUnit.SECONDS.sleep(1);
panel.repaint();
}
}
}
```

```
class ClockPanel extends JPanel {
private String time;
private String weekday;
private String month;
private String year;

public ClockPanel() {
setPreferredSize(new Dimension(400, 190));
setBackground(Color.BLACK);
setFont(new Font("Arial", Font.BOLD, 32));
setForeground(Color.GREEN);
}

 public void setTime(String weekday, String month, String year, String time) {
 this.weekday = weekday;
 this.month = month;
 this.year = year;
 this.time = time;
 }

 @Override
  protected void paintComponent(Graphics g) {
  super.paintComponent(g);
  g.setColor(Color.GREEN);
  g.setFont(new Font("Arial", Font.BOLD, 32));
  g.drawString(weekday, 50, 50);
  g.drawString(month, 50, 90);
  g.drawString(year, 50, 130);
  g.drawString(time, 200, 90);
  g.setColor(Color.WHITE);
  g.drawLine(0, 0, getWidth(), 0);
  g.drawLine(0, 0, 0, getHeight());
  g.drawLine(0, getHeight() - 1, getWidth(), getHeight() - 1);
  g.drawLine(getWidth() - 1, 0, getWidth() - 1, getHeight());
  }
  }
```

Github link:- https://github.com/LNSIKHCSM

Gantt chart:

We planned our project according to the Gantt chart as follows:

Sr. No.	Task	Start	Finish	Duration (in Days)
1	Understanding current system	27-01-2023 3	-01-2023	5
2	Information gathering	2-02-2023 6-	2-2023	5
3	Database design	2-10-2022 31	-10-2022	4
4	Form design	01-11-2022	02-11-2022	2
5	Coding	03-11-2022	05-11-2022	3
6	Testing	06-11-2022	08-11-2022	3
7	Implementation	09-11-2022	10-11-2022	2