JAVA PROJECT REPORT

(Project Term January-May 2023)

CREATION OF FLAPPY BIRD

Submitted By:

NILIMP RATHORE 12105761

CSE-310

Under the guidance of

MR. RANJITH A. KUMAR

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

We hereby declare that the project work entitled CREATION OF FLAPPY BIRD is an authentic record of our own work carried out as requirements of JAVA Project for the award of BTech degree in COMPUTER SCIENCE AND ENGINEERING from Lovely Professional University, Phagwara, under the guidance of MR. RANJITH A. KUMAR during January to May term 2023. All the information furnished in this capstone project report is based on our own intensive work and is genuine.

Name: NILIMP RATHORE

Registration Number: 12105761

(Nilimp Rathore)

Date: 20 April 2023

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INTRODUCTION

Flappy Bird used to be a mobile game in initial stage that gained widespread popularity in early 2014. Developed by Dong Nguyen, a Vietnamese game developer, it quickly became a viral sensation, with millions of downloads and countless hours spent by players trying to beat their high scores.

The simple yet addictive gameplay combined with the retro graphics and challenging difficulty level made it an instant hit. However, it also caused controversy due to its perceived similarity to other popular games, as well as its alleged plagiarism of graphics and sound effects from other sources.

In this report, we'll delve deeper into the history and development of Flappy Bird, explore its gameplay mechanics and design elements, and explore its impact on the mobile gaming industry and popular culture. We'll also discuss the controversy surrounding the game, as well as its legacy and continued influence on the gaming landscape.

The project features are as follows:

- Consists of infinite score.
- Consists of speed level increment.
- Auto restart with simple click.

MERITS:

- Upgradation of Response time of a human mind.
- Entertainment purposes and Enjoyment with score making competitions.

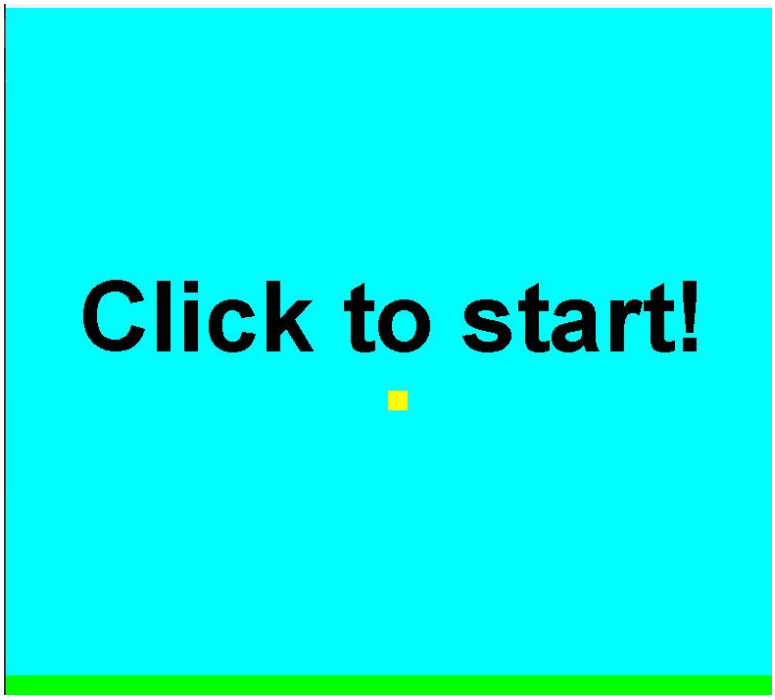
PROPOSED TECHNIQUE

1. **J-Frames:** J-FRAMES is a UI toolkit for building GUI applications in JAVA, while J-FRAMES is a class in the SWING toolkit that provides a top-level container for creating GUI application in JAVA.

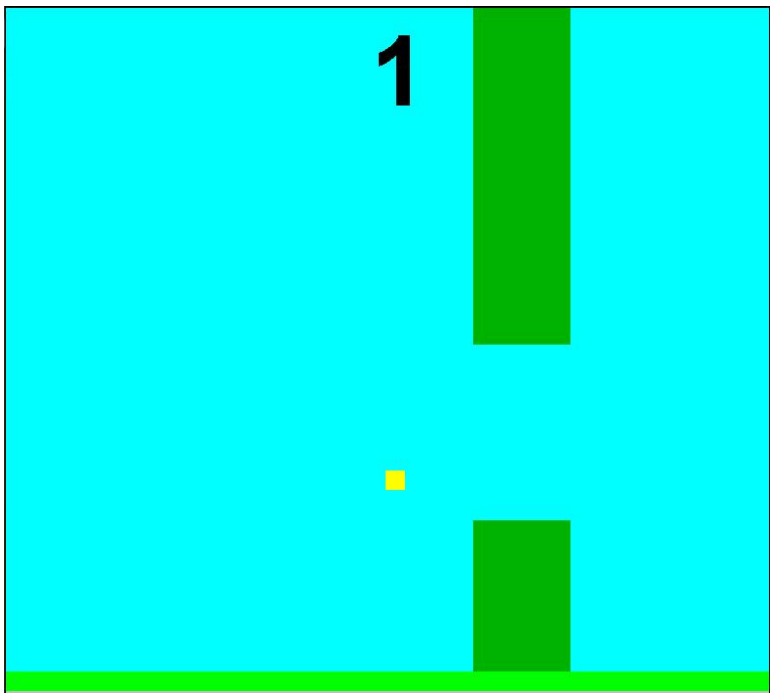
   A Graphics object encapsulates state information needed for the basic rendering operations that Java supports. This state information includes the following properties:

   - The Component object on which to draw.
   - A translation origin for rendering and clipping coordinates.
   - The current clip.
   - The current color.
   - The current font.

MODULE 1: START FACE



MODULE 2: PLAYING FACE



MODULE 3: GAME OVER FACE

GAME FRAME CODE:

```java
package flappyBird;

import java.awt.Color;
import java.awt.Font;
import java.awt.Graphics;
import java.awt.Rectangle;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.awt.event.KeyEvent;
import java.awt.event.KeyListener;
import java.awt.event.MouseEvent;
import java.awt.event.MouseListener;
import java.util.ArrayList;
import java.util.Random;

import javax.swing.JFrame;
import javax.swing.Timer;

public class FlappyBird implements ActionListener, MouseListener, KeyListener
{

    public static FlappyBird flappyBird;

    public final int WIDTH = 800, HEIGHT = 800;

    public Renderer renderer;

    public Rectangle bird;

    public ArrayList<Rectangle> columns;

    public int ticks, yMotion, score;

    public boolean gameOver, started;

    public Random rand;

    public FlappyBird()
    {
        JFrame jframe = new JFrame();
        Timer timer = new Timer(20, this);

        renderer = new Renderer();
        rand = new Random();

        jframe.add(renderer);
        jframe.setTitle("Flappy Bird");
        jframe.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        jframe.setSize(WIDTH, HEIGHT);
        jframe.addMouseListener(this);
        jframe.addKeyListener(this);
        jframe.setResizable(false);
        jframe.setVisible(true);

```

```
        bird = new Rectangle(WIDTH / 2 - 10, HEIGHT / 2 - 10, 20, 20);
        columns = new ArrayList<Rectangle>();

        addColumn(true);
        addColumn(true);
        addColumn(true);
        addColumn(true);

        timer.start();
    }

    public void addColumn(boolean start)
    {
        int space = 300;
        int width = 100;
        int height = 50 + rand.nextInt(300);

        if (start)
        {
            columns.add(new Rectangle(WIDTH + width + columns.size() * 300, HEIGHT - height - 120, width, height));
            columns.add(new Rectangle(WIDTH + width + (columns.size() - 1) * 300, 0, width, HEIGHT - height - space));
        }
        else
        {
            columns.add(new Rectangle(columns.get(columns.size() - 1).x + 600, HEIGHT - height - 120, width, height));
            columns.add(new Rectangle(columns.get(columns.size() - 1).x, 0, width, HEIGHT - height - space));
        }
    }

    public void paintColumn(Graphics g, Rectangle column)
    {
        g.setColor(Color.green.darker());
        g.fillRect(column.x, column.y, column.width, column.height);
    }

    public void jump()
    {
        if (gameOver)
        {
            bird = new Rectangle(WIDTH / 2 - 10, HEIGHT / 2 - 10, 20, 20);
            columns.clear();
            yMotion = 0;
            score = 0;

            addColumn(true);
            addColumn(true);
            addColumn(true);
            addColumn(true);

            gameOver = false;
        }

```

RENDERER DISPLAY CODE:

```java
package flappyBird;


import java.awt.Graphics;

import javax.swing.JPanel;

public class Renderer extends JPanel
{

    private static final long serialVersionUID = 1L;

    @Override
    protected void paintComponent(Graphics g)
    {
        super.paintComponent(g);

        FlappyBird.flappyBird.repaint(g);
    }

}
```

CONCLUSION

In this report, we've got tested the history of Flappy Bird, its gameplay mechanics, and the motives for its sudden popularity and eventual elimination from the app shops. We additionally analyzed the effect that Flappy Bird had on the mobile gaming industry and its legacy these days. One of the main motives for Flappy Bird's achievement changed into its accessibility. The recreation turned into smooth to apprehend but hard to grasp, which made it attractive to each casual and hardcore game enthusiasts. Its simple pictures additionally meant that the game could be performed on a extensive variety of mobile gadgets. However, the surprising reputation of Flappy Bird also brought about controversy and complaint, with a few accusing the sport of being too addictive and selling a way of life of immediate gratification. This, mixed with the strain that the sport's success placed on its creator, led to Nguyen's choice to get rid of the game from the app stores. Despite its short lifespan, Flappy Bird's effect on the cell gaming industry can't be overstated. The game inspired infinite clones and imitators, and its impact can nonetheless be seen in many popular cell games today. In conclusion, Flappy Bird changed into a mobile recreation that captured the attention of millions of gamers worldwide in early 2014. Its success turned into due to its simple but addictive gameplay and accessibility, however additionally led to controversy and grievance. Despite its brief lifespan, Flappy Bird's legacy can still be felt within the mobile gaming enterprise today.