

**BASAVARAJESWARI GROUP OF INSTITUTIONS**  
**BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT**



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(Recognized by Govt. of Karnataka, approved by AICTE, New Delhi & Affiliated to  
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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**A Mini-Project Report**

**On**

**“PAPER PLANE GAME”**

A report submitted in partial fulfilment of the requirements for the  
MINI PROJECT OF COMPUTER GRAPHICS LABORATORY (18CSL67)

**Submitted By**

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**Visvesvaraya Technological University**

**Belagavi, Karnataka 2022-2023**

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**CERTIFICATE**

This is to certify that the MINI PROJECT of COMPUTER GRAPHICS LABORATORY entitle **“PAPER PLANE GAME”** has been successfully presented by **SANTOSH.S** bearing USN **3BR20CS149** and **SANKINA.SUKRUTHA** bearing USN **3BR20CS148** students of VI semester B.E for the partial fulfilment of the requirements for the award of **Bachelor Degree in Computer Science and Engineering** of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAVI during the academic year 2022-2023.

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External viva

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1. \_\_\_\_\_

2.

Signature of HOD

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Signature with date

## **ACKNOWLEDGEMENT**

The satisfactions that accompany the successful completion of our mini project on “**PAPER PLANE GAME**” would be incomplete without the mention of people who made it possible, whose noble gesture, affection, guidance, encouragement and support crowned my efforts with success. It is our privilege to express our gratitude and respect to all those who inspired us in the completion of our mini-project.

We are extremely grateful to our Guides **Mr. Usman K and Mrs. Lakshmi Sharma** for their noble gesture, support co-ordination and valuable suggestions given in completing the mini-project. We also thank **Dr. R.N. Kulkarni**, H.O.D. Department of CSE, for his co-ordination and valuable suggestions given in completing the mini-project. We also thank Principal, Management and non-teaching staff for their co-ordination and valuable suggestions given to us in completing the mini-project.

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## **CHAPTER -1:**

### **INTRODUCTION**

The Paper Plane OpenGL Project is an exciting that combines computer graphics and interactive simulation to create a captivating virtual experience. This project utilizes the power of OpenGL, a widely-used graphics library, to render stunning 3D visuals and simulate the flight of a paper plane. By implementing realistic physics and interactive controls, users can immerse themselves in the world of paper aviation, exploring a virtual environment and experiencing the thrill of launching and a paper plane.

### **1.1 PROBLEM STATEMENT**

To design and develop paper plane game using OpenGL.

### **1.2 OBJECTIVES**

1. To design a visually realistic paper plane game.
2. To build a view with respect to game to provide good experience to the users.

## **CHAPTER -2:**

### **SYSTEM REQUIREMENTS AND SPECIFICATIONS**

#### **2.1 SOFTWARE REQUIREMENTS**

- Operating System: Windows-98/x p/vista/win7.
- Graphics package: OpenGL.
- Programming language: C++ using OpenGL.

#### **2.2 HARDWARE REQUIREMENTS**

- Processor: i3.
- Hard Disk: 100GB.
- RAM: 1GB.

## CHAPTER -3:

### IMPLEMENTATION

#### 3.1 FUNCTION/METHOD DESCRIPTION

1. **Void Init ()**: Initializes the OpenGL settings, such as the background colour and the projection matrix.
2. **void draw Score (char \*text)**: Draws the score on the screen using OpenGL's bitmap fonts.
3. **void draw Game Over Text ()**: Draws the "Game Over" text on the screen using OpenGL's bitmap fonts.
4. **Void keyboard (unsigned char key, int x, int y)**: Handles the keyboard input from the user. It is responsible for moving the plane up or down and restarting the game.
5. **void plane ()**: Draws the paper plane on the screen using OpenGL's primitive shapes.
6. **void box ()**: Draws the box obstacle on the screen using OpenGL's primitive shapes.
7. **void my Display ()**: The main display function that is called by OpenGL to render the scene. It clears the screen, calls the functions to draw the plane, box, score, and game over text, and flushes the rendering pipeline.
8. **void my Init ()**: Initializes the OpenGL settings for the window, such as the background and the projection matrix.
9. **Int main (int argc, char\*\*argv)**: The main function of the program. It initializes the OpenGL window and call back functions, sets up the initial settings, and enters the main event loop.

### 3.2 RESULTS (SCREEN SHOTS OF THE OUTPUT)

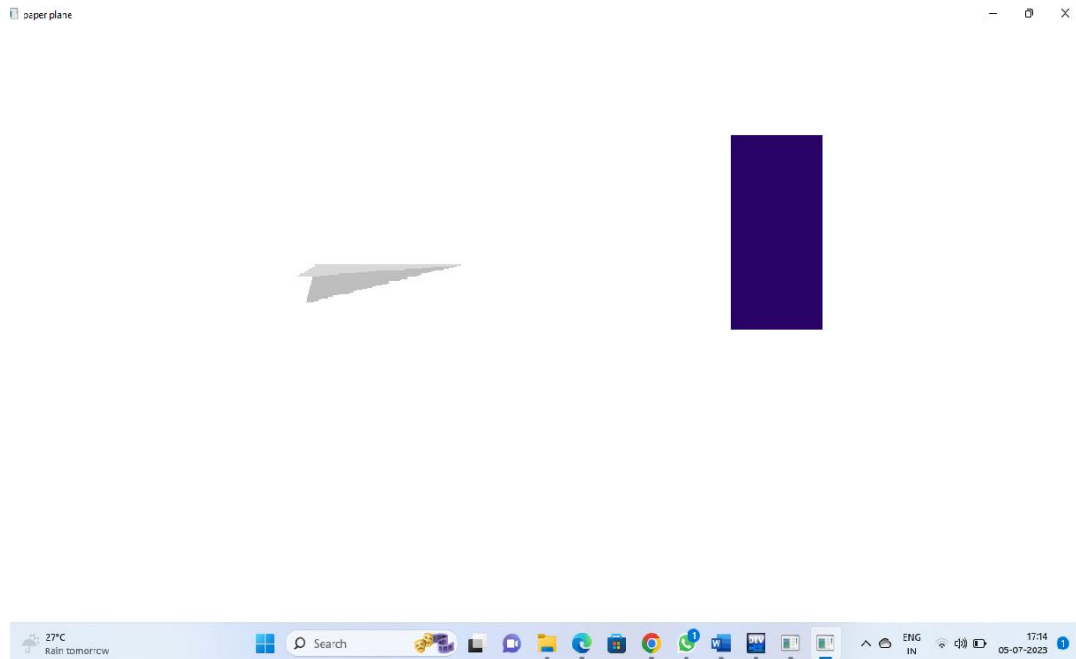


FIG 3.2.1: Press s key for down



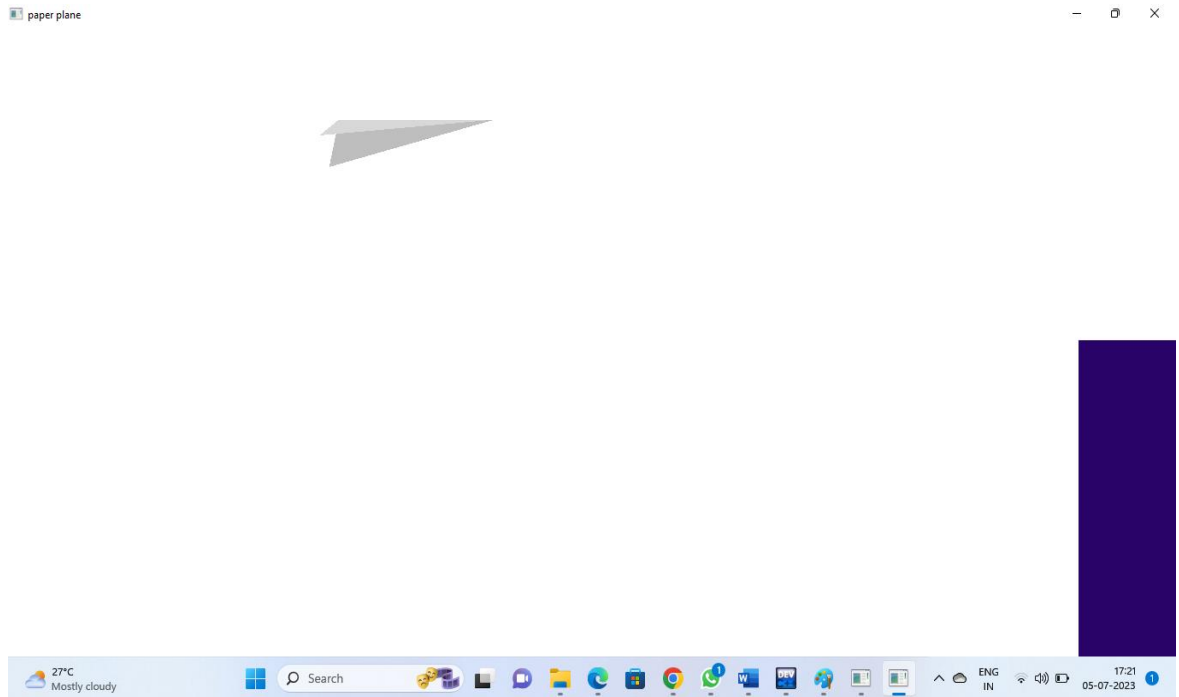


FIG 3.2.2: Press w key for up

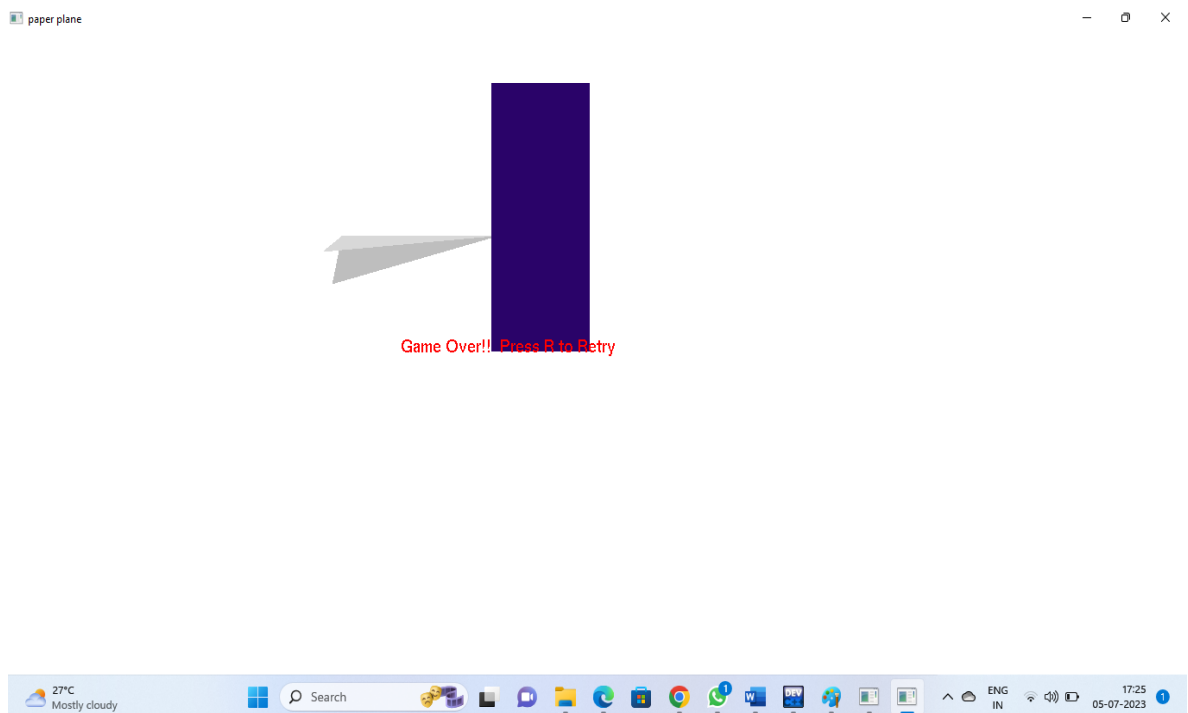


FIG 3.2.3: Game over press R to retry

## **CHAPTER -4**

### **CONCLUSION**

The project's implementation involved several key steps. Firstly, a 3D model of the paper plane was created using geometric primitives such as triangles and quadrilaterals. These primitives were then transformed and textured to give the plane a realistic appearance. Lighting techniques, such as shading and reflections, were also applied to enhance the visual quality of the model.