



## Dukey Bird Game Using Python

*Aneesh Kashyap T A<sup>1</sup>, Pavan C<sup>2</sup>, Roopashree C S<sup>3</sup>*

<sup>1</sup>Student, BCA, Bengaluru City University, BMS College of Commerce and Management, Bengaluru

<sup>2</sup>Student, BCA, Bengaluru City University, BMS College of Commerce and Management, Bengaluru

<sup>3</sup>Assistant Professor, BCA, Bengaluru City University, BMS College of Commerce and Management, Bengaluru

### ABSTRACT:

The game is a side-scroller where the player controls a bird, attempting to fly between rows of obstacles without hitting them. The objective is to direct a flying bird, named Dukey, who moves continuously to the right, between sets of Mario-like pipes. If the player touches the pipes, they lose. Dukey briefly flaps upward each time that the player clicks the button if the button is not tapped, Dukey falls because of gravity; each pair of pipes that he navigates between earns the player a single point.

The Dukey Bird game with three modes was implemented using Python programming language. The game utilizes the Pygame library, which provides functionality for game development.

The following are the three modes included in the game:

**Classic Mode:** In this mode, we have shown the original flappy bird game, here obstetrical and flying bird are same as the original.

**Desert Mode:** In this mode, we have shown different bird with desert background and desert atmosphere.

**Forest Mode:** In this mode, we have shown different bird with forest background and forest atmosphere.

Keywords: **Dukey Bird, pipes**

### Introduction:

The Dukey Bird game is a replica of flappy bird game popular side-scrolling mobile game that gained immense popularity due to its addictive and challenging nature. In this report, we present the development of a Dukey Bird game using Python programming language. The game includes three different modes to provide variety and keep the players engaged. Here we will discuss the game mechanics, implementation details, and future enhancements.

**Game Mechanics:** The objective of the Dukey Bird game is to navigate a bird through a series of obstacles without hitting them. The bird automatically moves forward, and the player can make it flap its wings to gain upward momentum and avoid collisions. The game ends if the bird collides with any obstacle or falls to the ground. The player's score is determined by the number of obstacles successfully passed.

**Implementation Details:** The Dukey Bird game with three modes was implemented using Python programming language. The game utilizes the Pygame library, which provides functionality for game development.

The following are the three modes included in the game:

- **Classic Mode:** In this mode, we have shown the original flappy bird game, here obsticals and flying bird are same as the original.
- **Desert Mode:** In this mode, we have shown different bird with desert background and desert atmosphere.
- **Forest Mode:** In this mode, we have shown different bird with forest background and forest atmosphere.

### Methodology:

The game development process involved the following key steps:

**Setting Up the Environment:** The Pygame library was installed and the necessary modules were imported to provide the required functionality for game development using pip extension and in visual studio we wrote the whole game code using python.

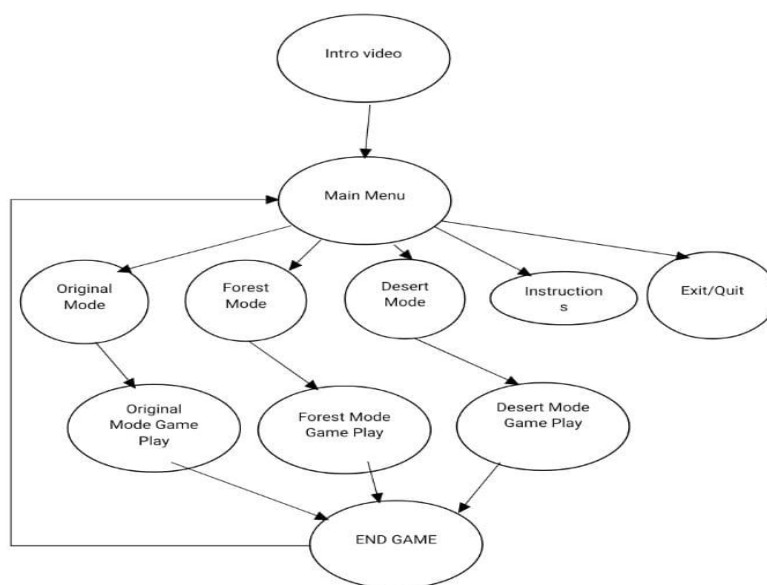
**Creating the Game Window:** A game window of appropriate size was created using the Pygame library. According to the size of the window we gave the resolution and adjusted the pixels of the character and background of the modes and main menu [3].

**Designing the Bird:** A bird character was designed using appropriate graphical assets, and its movement and collision detection logic were implemented. Different birds were created for different mode. For classic mode normal regular bird is used which is used in flappy bird game and in desert mode and forest mode we have used different birds which are relevant to the modes.

**Generating Obstacles:** Obstacles in the form of pipes were generated at regular intervals, and their movement logic was implemented to create the scrolling effect[1]. Obstacles were created according to the mode like for classic mode green pipe, for desert mode cactus like pipe and for forest mode tree trunk pipe is used.

**User Input Handling:** The player's input for controlling the bird's movement was captured, allowing them to make the bird flap its wings. User can use this game by selecting the mode which the user likes and after that user can play the game by pressing 'space bar' continuously or by clicking 'up' arrow continuously.

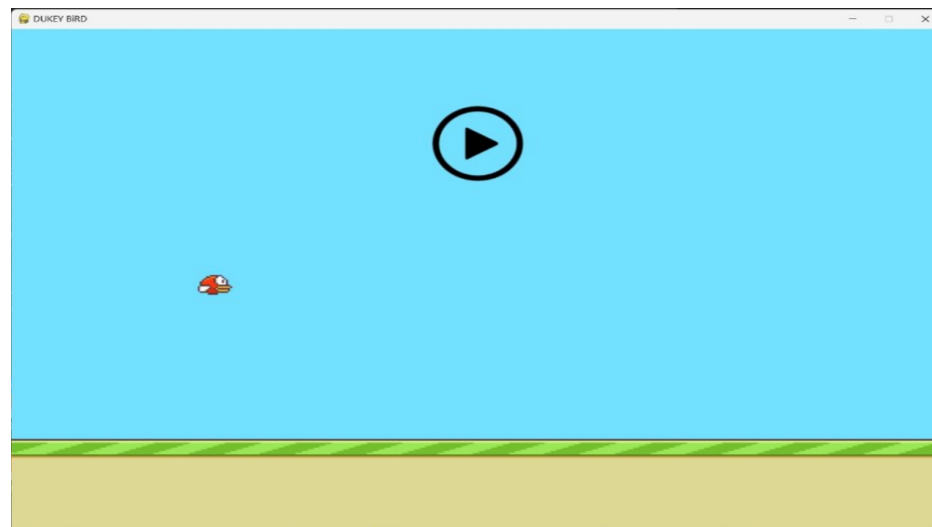
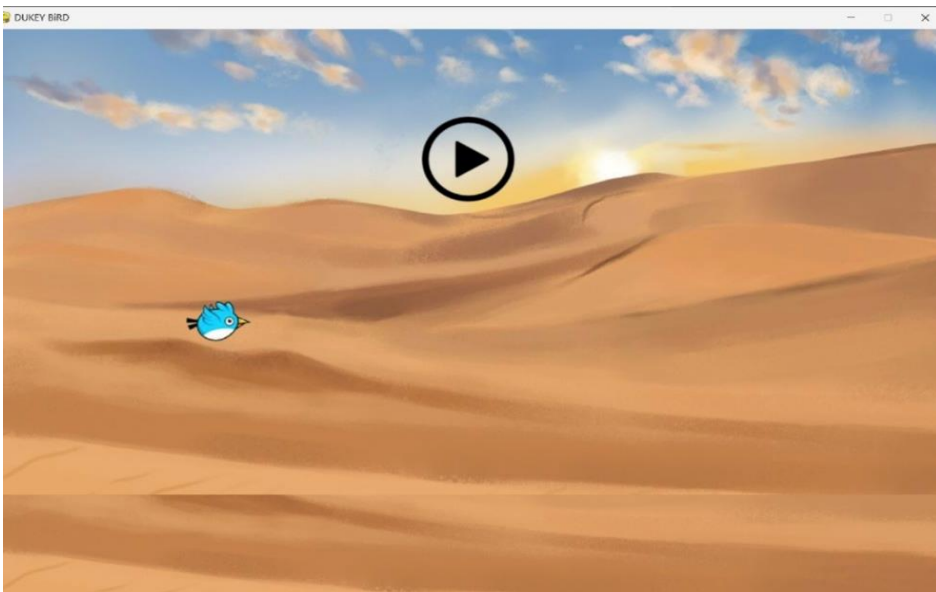
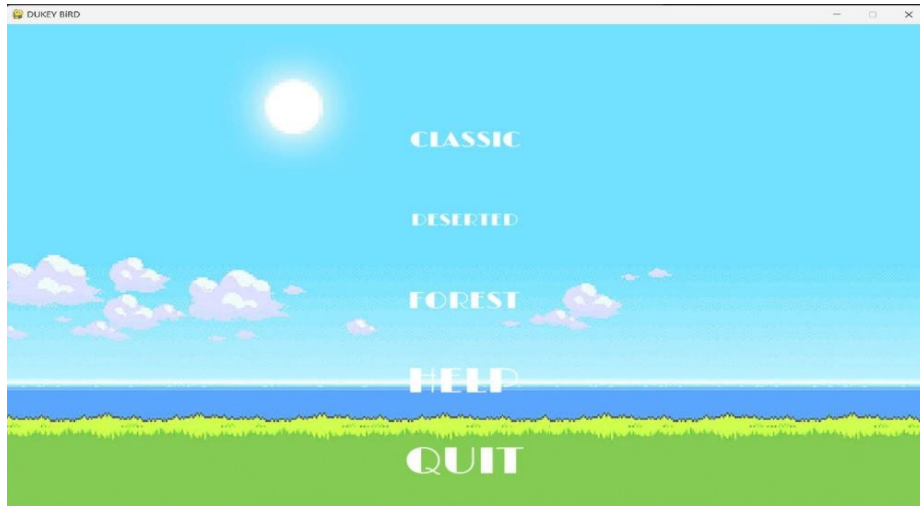
**Collision Detection:** The game continuously checks for collisions between the bird and the obstacles. If a collision occurs, the game ends, so player has to avoid the obstacles and travel in between the pipes.

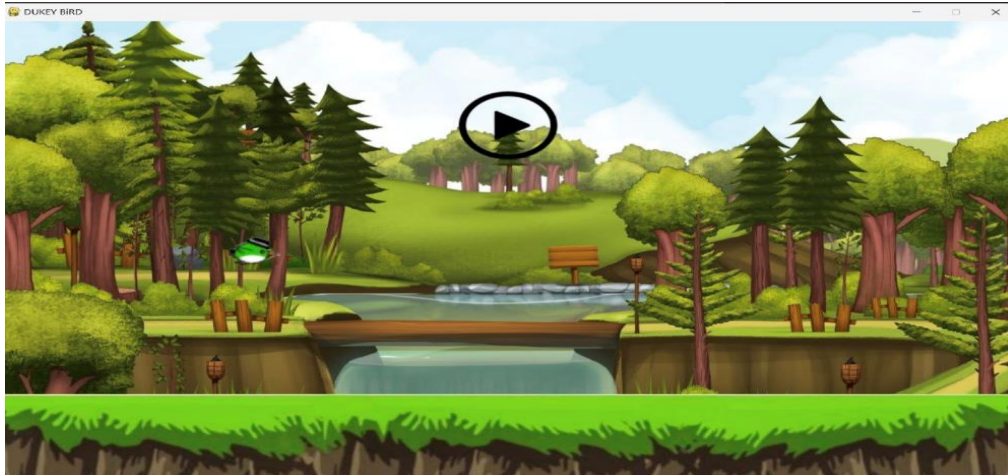


**Figure:** The above figure the data flow diagram about how the game works from the start to end of the game. At the first we have a introduction video after the video a screen appears with different options that's the main menu, in this main menu there are 3 modes namely - classic mode(original mode), forest mode and desert mode and other than these there are two more options namely instructions and quit. In instructions there are instructions to play the game and quit game is used to quit the game.

## Results

The game get started with an intro video, the users can skip the intro video by clicking any key or continue watching the intro video, after the end of the intro video a menu appears, where the user can choose between three different modes of gameplay instruction to know how to play the game If the player wishes to choose the first mode the first mode consists of the original flappy Bird game with the original background and original Bird The is consist of desert mode where the background is desert and obstacle are cactus under Desert Eagle where the third mode is the forest mode where the background is full of forest scenery and tree trunks are the obstacle in this mode





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## Conclusion

The development of the Dukey Bird game with three modes using Python has been successfully achieved. The game provides a challenging and addictive experience for players of different skill levels. The implementation utilized the Pygame library for game development, incorporating various features such as obstacle generation, collision detection, and scoring. With potential future enhancements, the game can be further improved to provide an even more engaging and enjoyable gaming experience for players.

## References:

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