

Creating this game in C++ using the OpenGL library requires an understanding of a range of computer graphics concepts. Here are some of the key concepts involved in building the Fly Away game:

2D graphics: The Fly Away game is a 2D side-scrolling game. To create the graphics, you need to be familiar with 2D coordinate systems and how to draw shapes such as circles, rectangles, and triangles. You will need to create graphics for the bird, pipes, and the background.

Animation: Animation is used to create the illusion of motion in a game. In this game, you need to animate the bird's movements, the pipe's movement, and the scrolling background. This requires an understanding of how to create a sequence of images and how to display them in rapid succession to create the illusion of motion.

Collision detection: Collision detection is the process of checking whether two objects have intersected with each other. In the game, you need to detect when the bird collides with the pipes to determine whether the game is over. You can use collision detection algorithms such as the Axis-Aligned Bounding Box (AABB) algorithm to detect collisions between the bird and the pipes.

User input: User input is used to respond to player actions, such as clicking the mouse or pressing a key. In the game, you need to respond to the player's input by making the bird ascend when the mouse is clicked or a key is pressed. You can use event handling functions to detect user input and respond accordingly.

Scoring system: In the game, you need to keep track of the player's score, which increases each time the bird passes through a gap in the pipes. You can use a scoring system that increases the score each time the bird passes through a gap.