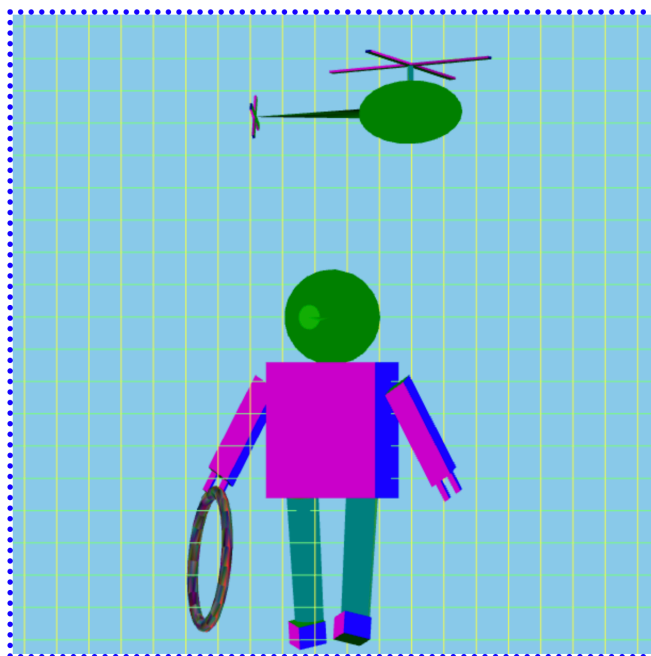

The walking Robot and Flying Helicopter

Report for Project A on Computer Graphics.

Haoyu Wei - HWJ9151



Control Robot

Click and move your mouse to rotate the robot. Use 'WSAD' keys to control the robot walk!

(Caution! going too far forward/back (on Z axis) may cause the robot disappear.)

Try to **CLICK** on the Helicopter area to stop it!

Press or key 'P' to Run/Stop the robot.

What would you like me to hold?

Click to change my walking **SPEED**!

Control Helicopter

Scroll me to change the Helicopter **SPEED**! slow fast

Figure 1. A screenshot of the User interface.

Introduction

In this project, my goal is to build a cartoon colored robot that can walk, bow and hold different things in hand. There is also a helicopter above the robot that's flying around with speed and shape change! Here is a brief user guide in the next section that explains everything. The scene graph in the last section shows clearly the structure of the project.

User Guide & Results

The guide consists of two parts: Control the robot and Control the helicopter, with Figure 2 and 3 illustrating the function results.

Control the robot:

The robot is by default dancing in the center of the scene and the helicopter is flying around. Click and drag it to see its body in every direction!

- ❖ Let the robot WALK: Use WSAD keys on your keyboard to control the robot walk forward/back/left/right. Or click the button 'Start/Stop Walking' to make it walking continuously. You can also change its walking speed by clicking the 'Walk Faster' / 'Walk Slower' buttons (It only works when the robot is walking).
- ❖ Let the robot BOW: Click the button 'Start/Stop Bowing' to make it bow.
- ❖ HOLD different things: Select your favorite item in the dropdown menu to make it hold it.
- ❖ STOP/START the robot: Click the stop button or 'P' on your keyboard to stop the robot.

Control the helicopter:

- ❖ STOP/START the helicopter: Click in the helicopter area (the top of canvas) to pause/start it flying.
- ❖ Change flying SPEED: Scroll the bar left and right to change its flying speed.
- ❖ Change helicopter SHAPE: Click the button 'Helicopter Shape Change' to change to shape of it.

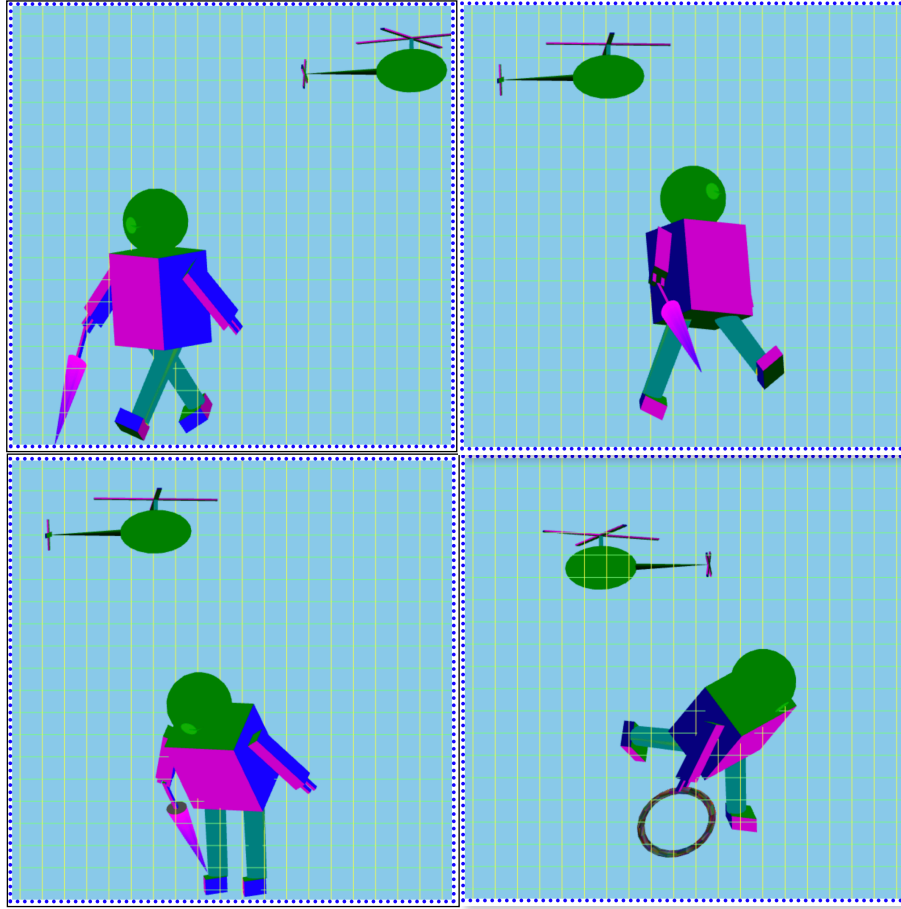


Figure 2. (a) The robot is walking left with an umbrella, and Helicopter is flying rightwards; (b) The robot is walking right with a view from bottom; (c) The robot is bowing; (d) The robot is walking right and forward with a torus in hand and a view from the top, and the helicopter is flying leftwards.

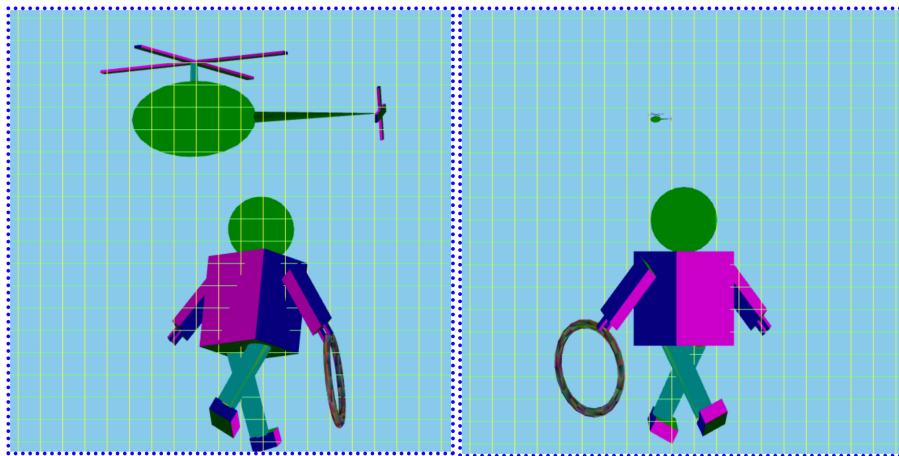


Figure 3. Helicopter shape change result. Turns bigger and smaller over time.

Scene Graph

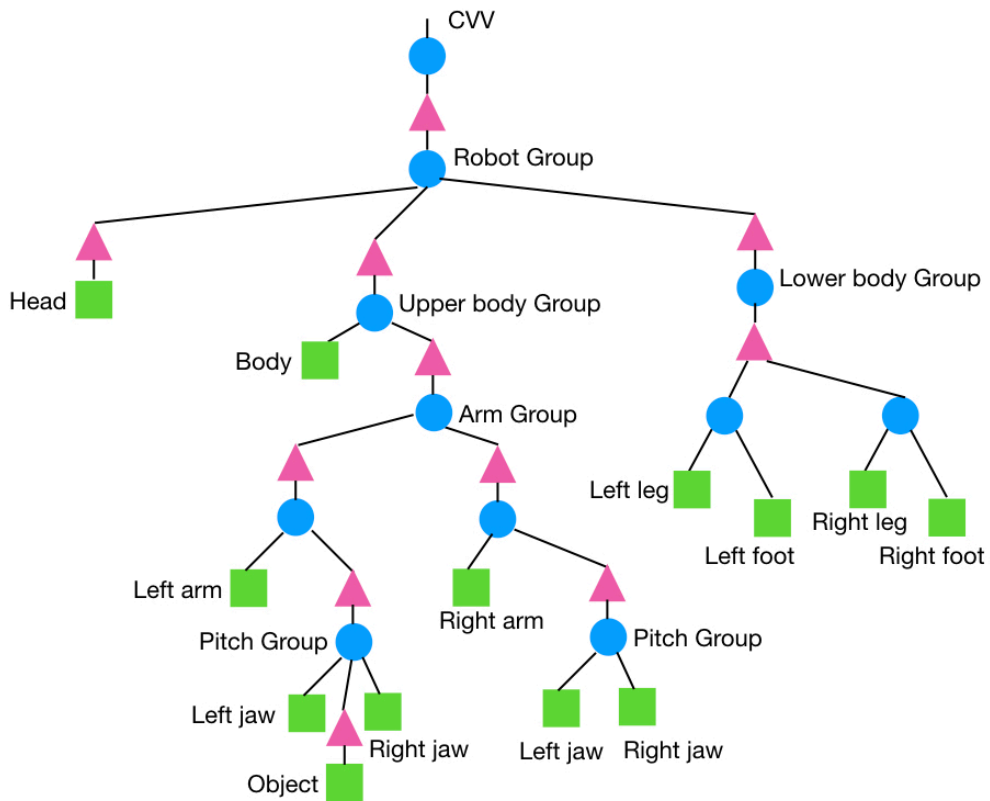


Figure 4. Scene graph of the robot.

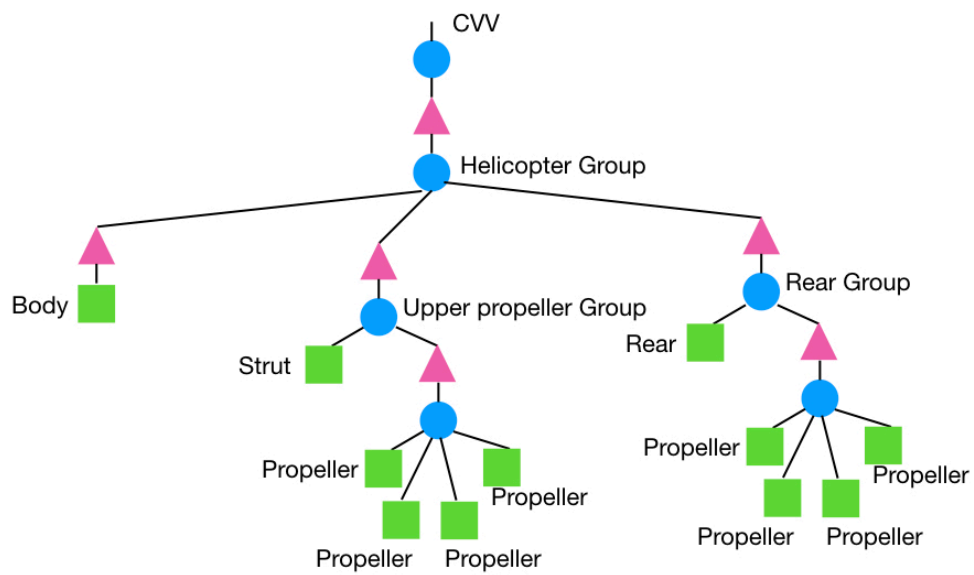


Figure 5. Scene graph of the helicopter.