Lab3: Assembly the robot and testing actuators

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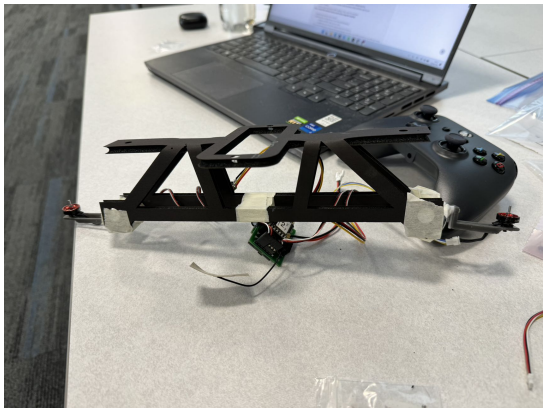
https://github.com/Robert1124/cse460

I. Part1: Assemble the robot

We assembled the robot following the instruction.



Here are 5 ways to improve the design:

1. Use plastic to make the frame. The materials used now are too fragile. Several times while I was adjusting the shape of this frame I was afraid I was going to break the frame to pieces.

2. There should be a better way to fix the motors. The sides of the motors can be held well, but the back of the motor does not have a proper support point for us to fix it.

3. To faster assemble the robot, I suggest to fix the motor to one side first, then bend and tied the frame and fix the motor to the other side.

4. There should be a position to place ESP32 well on the frame.

5. There should be a structure horizontal to the main frame to help keep the balance.

II. Part3: Control the actuators

After we run the RawBicopter.py and moved the left vertical joystick, the LED turned on. It was not successful every time, we needed to reconnect it again and again to reduce the delay.

Then, we wanted to test two servos and two motors. At first, we set the firmware correctly and the python code was also correct, however, nothing happened after we moved the joystick. We found the wire was wrong connected, so we reconnected wires in correct way and successfully test the servos and motors. We matched the two servos with the two axis and the button A with the both motors.

With the axis and button A, we flied the robot with helium balloon and controlled it with the joystick.