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Abstract

This project describes the design and implementation of an RC boat using Arduino microcontrollers, Bluetooth modules, servo motors, DC motors, lipo batteries, joysticks, push buttons, and relay/emergency kill switches. The boat is controlled wirelessly using a joystick and can be steered and moved forward or backward. An emergency kill switch is included to stop the boat immediately in case of an emergency.

Features

A. **Wireless control using a joystick:** The RC boat can be controlled wirelessly using a joystick. This allows us to easily steer and move the boat forward or backward.

B. **Servo motor for steering:** A servo motor is used to control the rudder of the boat. This allows for precise and accurate steering.

C. **DC motor for propulsion:** A DC motor is used to propel the boat forward. The speed of the motor can be controlled using the joystick.

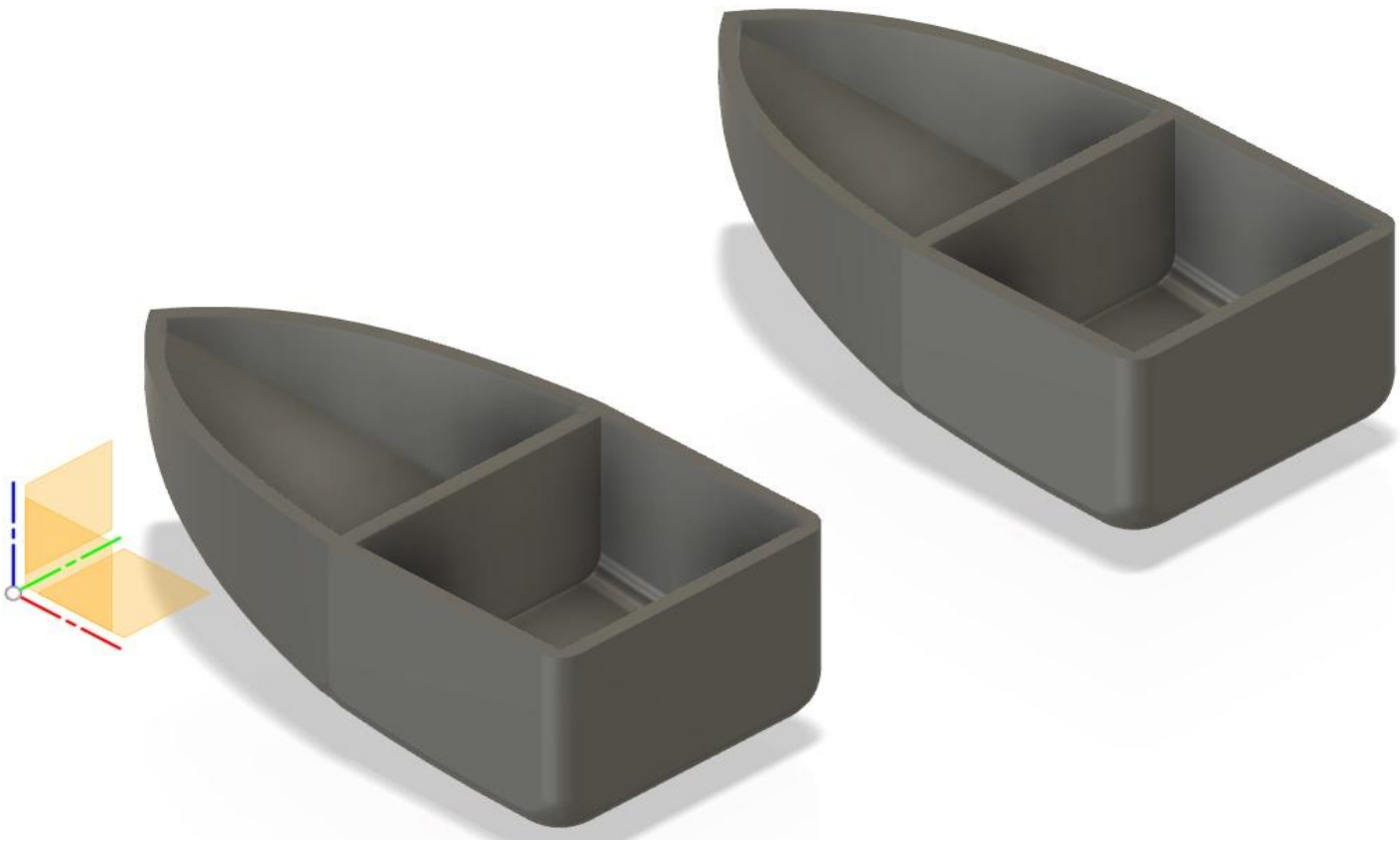
D. **12V lipo battery:** A 12V lipo battery is used to power the Arduino microcontrollers, Bluetooth modules, servo motor, and DC motor.

E. **Emergency kill switch:** An emergency kill switch is included to stop the boat immediately in case of an emergency.

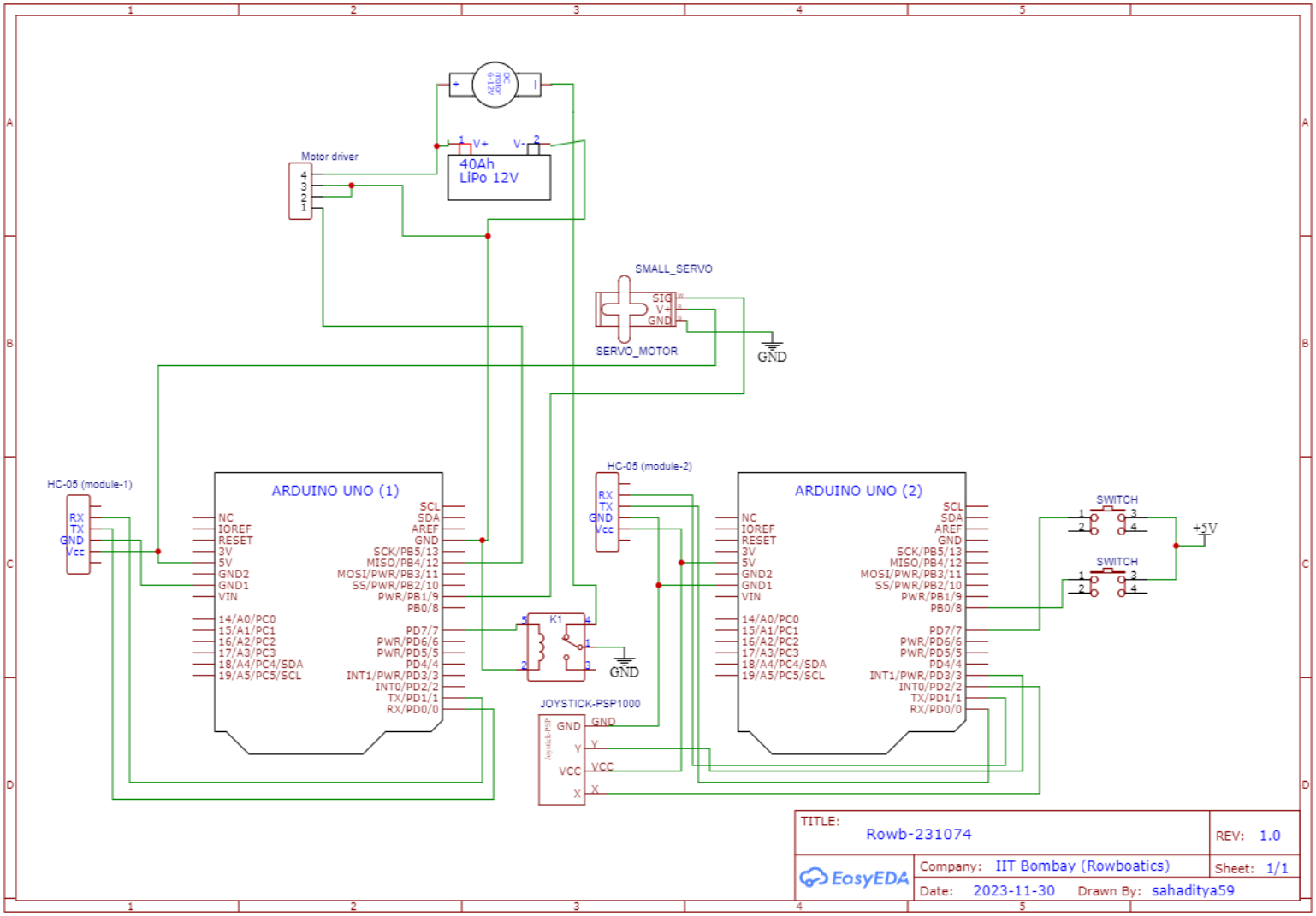
Implementation

The boat is constructed using a SUN board. The Arduino microcontrollers, Bluetooth modules, servo motor, DC motor, lipo battery, joystick, push buttons, and relay/emergency kill switch are mounted on the deck. The servo motor is connected to the rudder of the boat, and the DC motor is connected to the propeller. The lipo battery is used to power the Arduino microcontrollers, Bluetooth modules, servo motor, and DC motor.

Design



Circuit diagram



Materials

- ☐ Arduino Uno microcontrollers (2 Units)
- ☐ HC-05 Bluetooth modules (2 Units)
- ☐ MG90 servo motors (1 Units)
- ☐ 500-1000 RPM DC motor (1 Units)
- ☐ 12V lipo battery (1 Units)
- ☐ Joystick (1 Units)
- ☐ Push buttons (2 Units)
- ☐ Relay/emergency kill switch (1 Units)

Estimated bill

Sr No.	Material	Unit	Rate	Amount
1	Arduino Uno Microcontrollers	2	1000	2000
2	HC-05 Bluetooth Modules	2	500	1500
3	MG90 Servo Motor	1	350	350
4	500-1000 RPM DC Motor	1	1100	1100
5	12V lipo Battery	1	1500	1500
6	Joystick	1	200	200
7	Push Buttons	2	50	100
8	Relay/Emergency Kill Switch	1	100	100
			TOTAL	**6850**