Khulna University of Engineering & Technology

ECE 3200: Electronics Project Design/ Development

Project Title: Smart Voice Controlled Wheelchair

Supervised By	Submitted By
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Objective:

1) **To develop a voice-controlled wheelchair to enhance mobility for individuals with disabilities.**
2) **To implement advanced safety mechanisms to ensure secure navigation in various environments.**
3) **To facilitate emergency response through integrated detection and alert systems.**
4) **To enable real-time monitoring for better user and caregiver awareness.**

Proposed Features:

1. Users can control the wheelchair using voice.
2. The wheelchair detects obstacles and automatically avoids them.
3. A mobile app allows easy control and tracking of the wheelchair.
4. To detect falls and send alerts to a Telegram bot for timely assistance.
5. To identify fire hazards and notify a Telegram bot instantly.

Estimated Equipment and Cost:

Table-1: Necessary equipment required for the project along with their cost:

Serial No	Item Name	Unit price	Quantity	Price
1	Arduino Uno	1050	1	1050
2	ESP8266	350	1	350
3	ESP32 cam	650	1	650
4	MPU6050 3-Axis Gyroscope Sensor	220	1	220
5	Battery holder	30	2	60
6	L293D motor driver	210	1	210
7	Gear motor	85	4	340
8	ESP32-CAM MB Case	195	1	195
9	HC-05 Bluetooth module	-	1	* taken from lab
10	Ultrasonic sensor	110	1	110

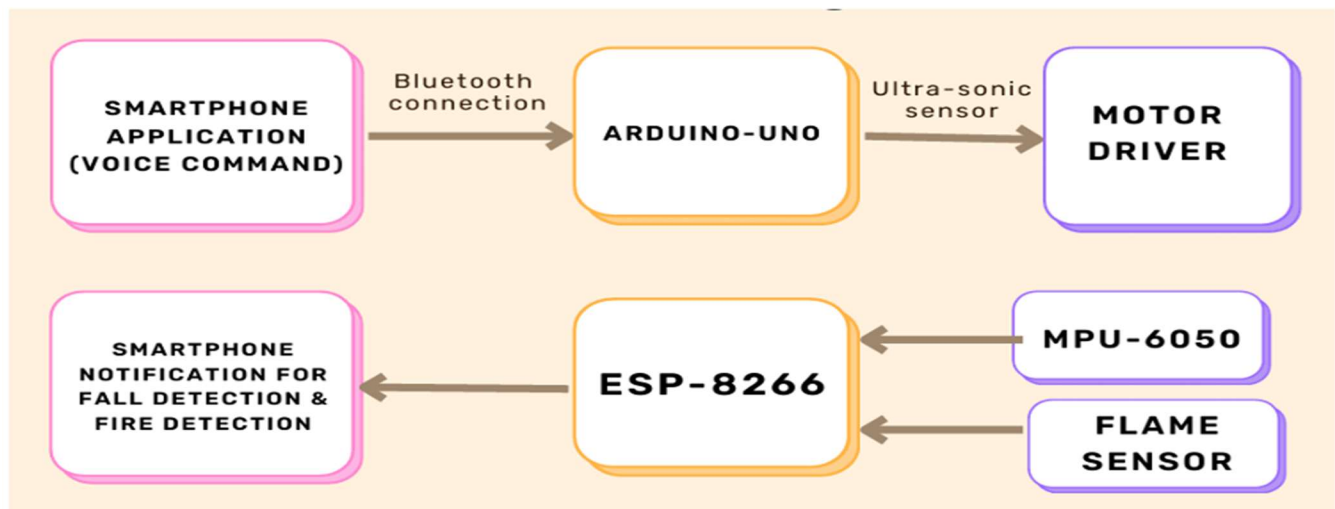|				
11	Servo motor	150	1	150
12	Battery	120	5	600
13	Wheel	75	4	150 *2 taken from lab
14	IR sensor	70	1	70
15	Flame sensor	65	1	65
15	Voltage level indicator	140	1	140
16	Dc switch	10	1	10
17	Bread board	140	1	140
18	Jumper Wire	2	20	40
19	Glue gun	210	1	210

Total Cost: 4760 tk.
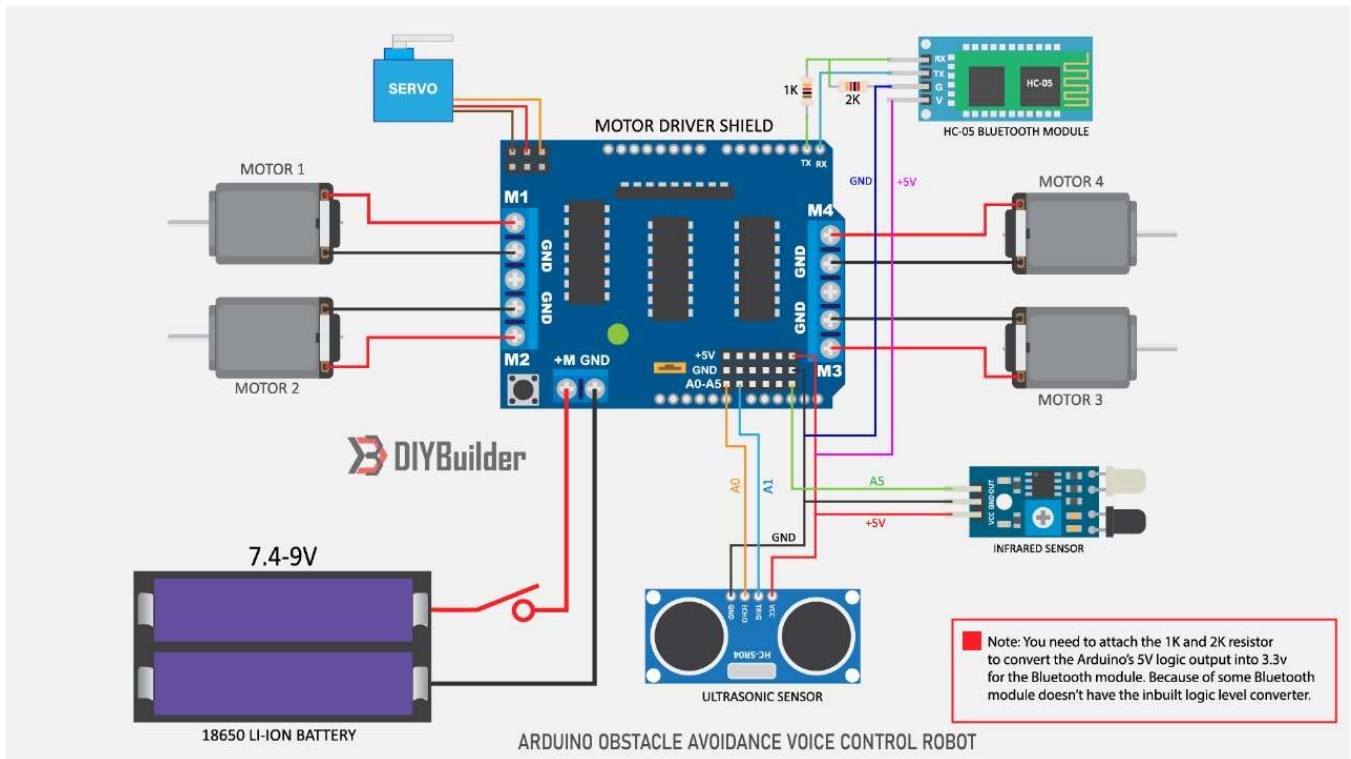
Block diagram:

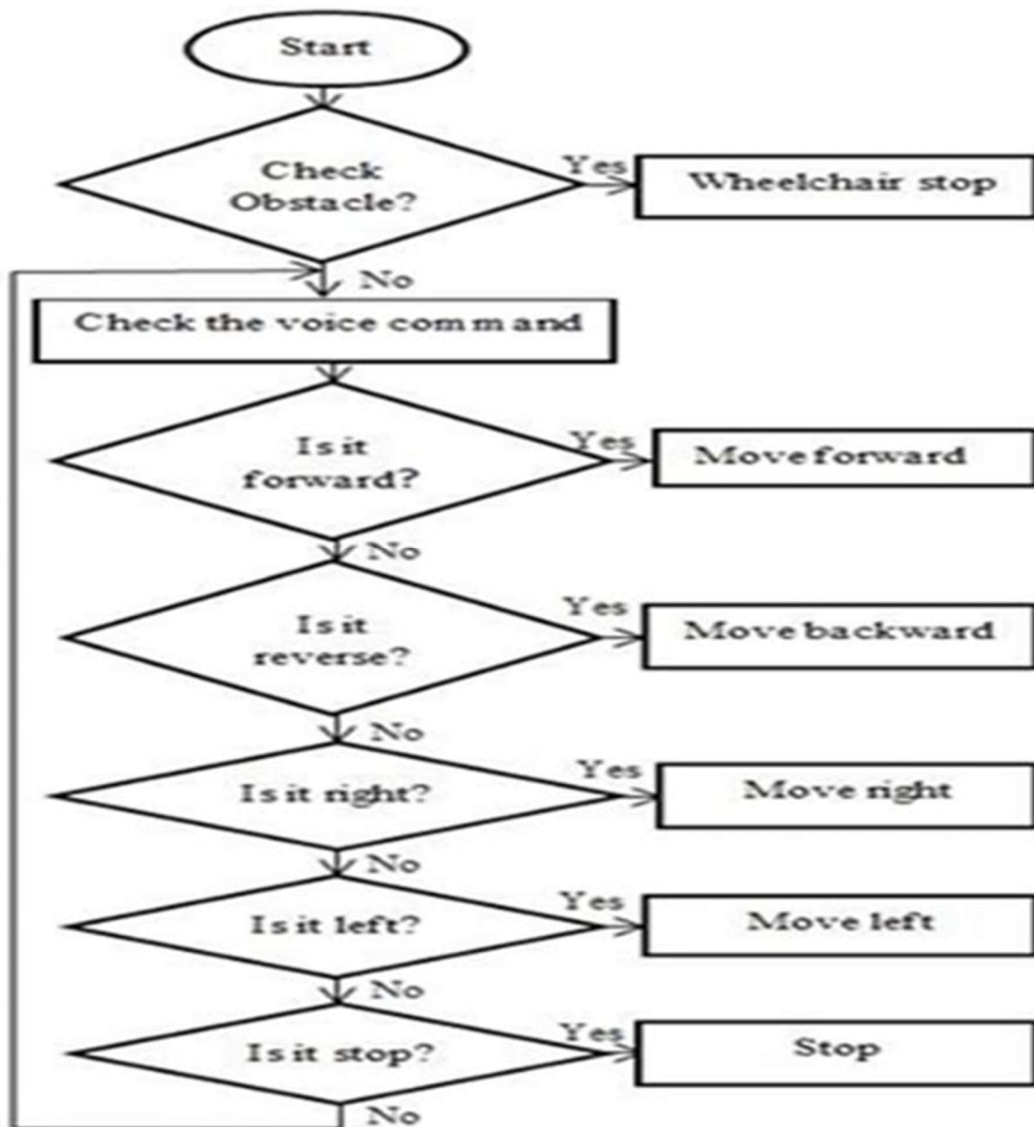Fig.1. Block diagram

Fig 2 : circuit diagram for voice control and obstracle avoidance

Fig 3 : Flow diagram for voice control

Fig 4 : circuit diagram for fall detection and fire detection