Chapter3: Mechanical and Electronic Systems

1. **Mechanical Systems**:
   1. Learn basic robot chassis design.
   2. Understand motor types and when to use each (DC, stepper, servo).
2. **Basic Electronics**:
   1. Understand components like resistors, diodes, and capacitors.
   2. Build a simple circuit to power a motor with a battery and a switch.

Sensors and Actuators

1 * Common Sensors

- :**Ultrasonic sensor** (e.g., HC-SR04): Measure distances.

- **Line-following sensor**: Detect black or white lines for navigation.

2* Actuators:

- Servo motor control:

```
#include <Servo.h>
Servo myservo;
void setup() {
    myservo.attach(9); // Pin 9 connected to servo signal
}
void loop() {
    myservo.write(90); // Move to 90 degrees
    delay(1000);
}
```