3. Control any two actuators connected to the development board using Bluetooth.

To control the speed and direction of a dc motor with Arduino using bluetooth and Andriod application we will use HC-05 Bluetooth module to establish the Bluetooth connection between Andriod app and Arduino. HC-05 bluetooth will be used to communicate with Arduino using an Android application known as the S2 Terminal.

Required Equipment

1. Arduino
2. L2083D Motor driver IC
3. 2 DC Motors
4. HC-05 bluetooth module
5. Bread board and connecting wires.

Source code

```
int     motor1pin1 = 3;
int     motor1Pin2 = 4;

int     enable1Pin = 2;
int     motor2Pin1 = 8;

int     motor2Pin2 = 9;
int     enable2Pin = 11;

int     state;
int     flag = 0;
int     stateStop = 0;
```

```
void setup() {
  pinMode(motor1Pin1, OUTPUT);
  pinMode(motor1Pin2, OUTPUT);
  pinMode(enable1Pin, OUTPUT);
  pinMode(motor2Pin1, OUTPUT);
  pinMode(motor2Pin2, OUTPUT);
  pinMode(enable2Pin, OUTPUT);
  digitalWrite(enable1Pin, HIGH);
  digitalWrite(enable2Pin, HIGH);
  Serial.begin(9600);
}
void loop() {
  if (Serial.available() > 0) {
    State = Serial.read();
    flag = 0;
  }
  if (state == '1') {
    digitalWrite(motor1Pin1, HIGH);
    digitalWrite(motor1Pin2, HIGH);
    digitalWrite(motor2Pin1, LOW);
    digitalWrite(motor2Pin2, HIGH);
    if (flag == 0) {
      Serial.println("Go Forward!");
```

```cpp
    flag = 1;
  }
  delay (3000);
  state = 3;
  stateStop = 1;

  }
  else if (state == '2') {
    digitalWrite (motor1Pin1, HIGH);
    digitalWrite (motor1Pin2, LOW);
    digitalWrite (motor2Pin1, LOW);
    digitalWrite (motor2Pin2, LOW);

    if (flag == 0) {
      Serial.println ("Turn LEFT");

      flag = 1;
    }
    delay (3000);
    state = 3;
    stateStop = 1;

  }
  else if (state == '3' || stateStop == 1) {
    digitalWrite (motor1Pin1, LOW);
    digitalWrite (motor1Pin2, LOW);
    digitalWrite (motor2Pin1, LOW);
    digitalWrite (motor2Pin2, LOW);
```

```
if (flag ==0){
Serial.println ("STOP!");
flag=1;
}
stateStop =0;
}
else if (state =='4'){
digitalWrite (motor1Pin1, Low);
digitalWrite (motor1Pin2, Low);
digitalWrite (motor2Pin1, Low);
digitalWrite (motor2Pin2, HIGH);
if (flag==0){
Serial.println ("Turn RIGHT");
flag=1;
}
delay(3000);
state= 3;
stateStop=1;
}
else if (state =='5'){
digitalWrite (motor1Pin1, LOW);
digitalWrite (motor1Pin2, HIGH);
digitalWrite(motor2Pin1, HIGH);
digitalWrite (motor2Pin2, LOW);
```

```
if (flag ==0) {
Serial.println ("Reverse!");

flag =1;

}
delay (3000);
state = 3;
state Stop =1;

}
```