WASTE SEGREGATION USING DEEP LEARNING AND IOT

```
#include <LiquidCrystal.h>
const int rs = 13, en = 12, d4 = 8, d5 = 9, d6 = 10, d7 =
11;
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);
int IN1=14;
int IN2=15;
int IN3=17;
int
IN4=16;
int IN5=18;
int IN6=19;
int IN7=2;
int IN8=3;
char ch;
int a,b,c;
void
setup()
{


pinMode(IN1,OUTPUT);
pinMode(IN2,OUTPUT);
pinMode(IN3,OUTPUT);
pinMode(IN4,OUTPUT);
pinMode(IN5,OUTPUT);
pinMode(IN6,OUTPUT);
pinMode(IN7,OUTPUT);
pinMode(IN8,OUTPUT);


digitalWrite(IN1,LOW);
digitalWrite(IN2,LOW);
digitalWrite(IN3,LOW);
digitalWrite(IN4,LOW);
digitalWrite(IN5,LOW);
digitalWrite(IN6,LOW);
digitalWrite(IN7,LOW);
digitalWrite(IN8,LOW);
Serial.begin(9600);

lcd.begin(16, 2);
lcd.clear();
lcd.print("Waste
Segregation");//Initialize serial
Serial.println("Waste Segregation");
delay(2000);
//UP();
//delay(2000);
// UP_DOWN_STOP();
//
delay(2000);
//RFID_SCAN();
```

```
//////
//OPEN();
// delay(4000);
// OPEN_CLOSE_STOP();
//
delay(2000);
// ROTATE_1();
// METAL_BIN();
// delay(2000);
//
METAL_BIN_1();
// delay(2000);
lcd.clear();
lcd.print("Waiting....");//Initialize serial
}
void loop()
{
if(Serial.available()>0)
{
ch=Serial.read();
Serial.println(ch);

delay(1000);
if(ch=='D')
{
lcd.clear();
lcd.print("Dry
Waste..");
Serial.println("Dry Waste..");
Dry_Waste();

}
if(ch=='W')
{
lcd.clear();
lcd.print("Wet Waste..");
Serial.println("Wet Waste..");
Wet_Waste();
}
if(ch=='M')
{
lcd.clear();
lcd.print("Metal Waste..");

Serial.println("Metal Waste..");
Metal_Waste();
}

}
}
void Dry_Waste()
{
DOWN();
delay(2000);
UP_DOWN_STOP();
delay(2000);
```

```
CLOSE();
delay(4000);
OPEN_CLOSE_STOP();
delay(2000);
UP();
delay(2000);
UP_DOWN_STOP();
delay(2000);
ROTATE();
delay(2000);
OPEN();
delay(4000);
OPEN_CLOSE_STOP();
delay(2000);
ROTATE_1();
delay(2000);
}
void Wet_Waste()
{
DOWN();
delay(2000);
UP_DOWN_STOP();
delay(2000);
CLOSE();
delay(4000);
OPEN_CLOSE_STOP();
delay(2000);
UP();
delay(2000);
UP_DOWN_STOP();
delay(2000);
ROTATE();
delay(2000);
WET_BIN();
delay(2000);
OPEN();
delay(4000);
OPEN_CLOSE_STOP();
delay(2000);
WET_BIN_1();
delay(2000);
ROTATE_1();
delay(2000);

}
void Metal_Waste()
{
DOWN();
delay(2000);
UP_DOWN_STOP();
delay(2000);
CLOSE();
delay(4000);
OPEN_CLOSE_STOP();
delay(2000);
UP();
```

```
delay(2000);
UP_DOWN_STOP();
delay(2000);
ROTATE();
delay(2000);
METAL_BIN();
delay(2000);
OPEN();
delay(4000);
OPEN_CLOSE_STOP();
delay(2000);
METAL_BIN_1();
delay(2000);
ROTATE_1();
delay(2000);
}
void
UP()
{
Serial.println("UP...");
digitalWrite(IN1,HIGH);
digitalWrite(IN2,LOW);
}
void DOWN()
{
Serial.println("DOWN...");
digitalWrite(IN1,LOW);
digitalWrite(IN2,HIGH);
}
void UP_DOWN_STOP()
{
Serial.println("UP DOWN STOP...");
digitalWrite(IN1,LOW);
digitalWrite(IN2,LOW);
}
void OPEN()
{
Serial.println("OPEN...");
digitalWrite(IN3,LOW);
digitalWrite(IN4,HIGH);
}
void CLOSE()
{
Serial.println("CLOSE...");
digitalWrite(IN3,HIGH);
digitalWrite(IN4,LOW);
}
void OPEN_CLOSE_STOP()
{
Serial.println("OPEN CLOSE
STOP...");
digitalWrite(IN3,LOW);
digitalWrite(IN4,LOW);
}
void ROTATE()
{
```

```
Serial.println("ROTATE...");
digitalWrite(IN5,HIGH);
digitalWrite(IN6,LOW);
delay(800);
digitalWrite(IN5,LOW);
digitalWrite(IN6,LOW);

}
void ROTATE_1()
{
Serial.println("ROTATE_1...");
digitalWrite(IN5,LOW);
digitalWrite(IN6,HIGH);
delay(800);
digitalWrite(IN5,LOW);
digitalWrite(IN6,LOW);

}
void WET_BIN()
{
Serial.println("WET BIN ROTATE...");
digitalWrite(IN7,HIGH);
digitalWrite(IN8,LOW);
delay(400);
digitalWrite(IN7,LOW);
digitalWrite(IN8,LOW);
}
void WET_BIN_1()
{
Serial.println("WET BIN ROTATE_1...");
digitalWrite(IN7,LOW);
digitalWrite(IN8,HIGH);
delay(400);
digitalWrite(IN7,LOW);
digitalWrite(IN8,LOW);

}
void METAL_BIN()
{
Serial.println("METAL BIN
ROTATE...");
digitalWrite(IN7,HIGH);
digitalWrite(IN8,LOW);
delay(1000);

digitalWrite(IN7,LOW);
digitalWrite(IN8,LOW);

}
void METAL_BIN_1()
{
Serial.println("METAL BIN ROTATE_1...");
digitalWrite(IN7,LOW);
digitalWrite(IN8,HIGH);
delay(1000);
digitalWrite(IN7,LOW);
```

```
digitalWrite(IN8,LOW);
}
```