Project 6 (Stepper Motor) :

Requirements :

1 . Arduino uno 1x

2. stepper motor 1x

3. uln2003 motor driver

Hardware setup :

1 - stepper motor connected to the motor driver

2 – Pin’s Motor driver & Arduino :

Motor driver	Arduino uno
1N1	D8
1N2	D9
1N3	D10
1N4	D11
-	GND
+	VCC +5V

Code :

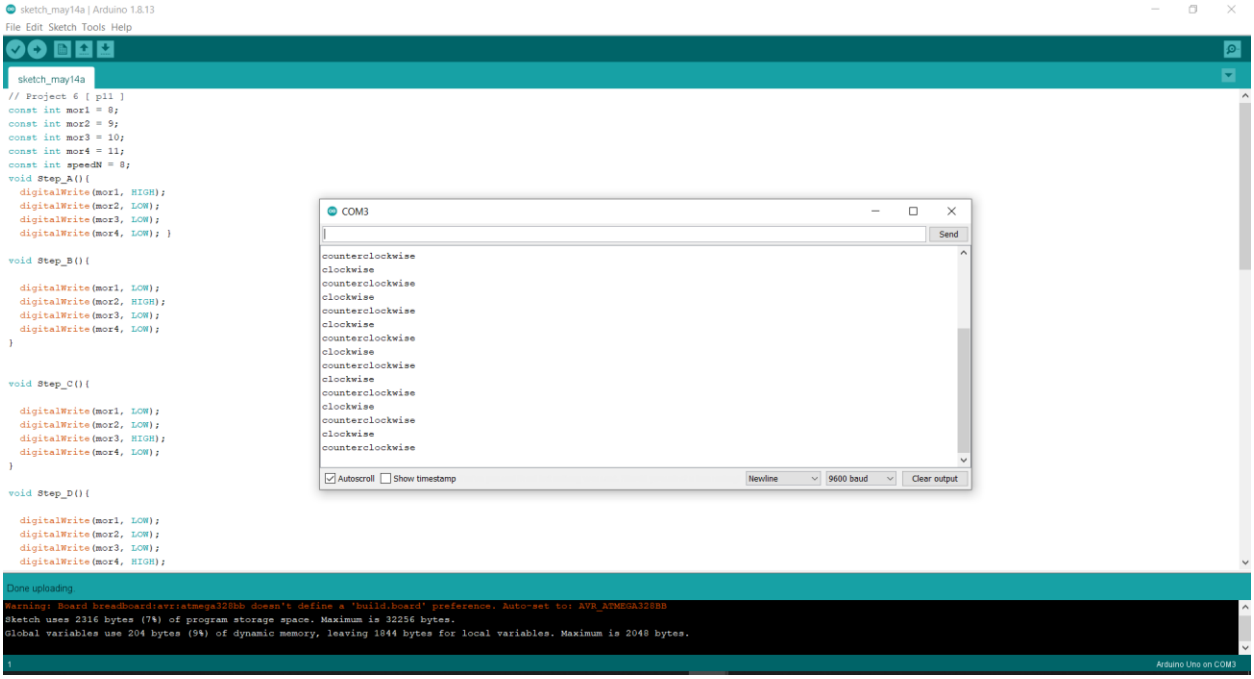
```
// Project 6 [ p11 ]
const int mor1 = 8;
const int mor2 = 9;
const int mor3 = 10;
const int mor4 = 11;
const int speedN = 8;
void Step_A(){
```

```
  digitalWrite(mor1, HIGH);
  digitalWrite(mor2, LOW);
  digitalWrite(mor3, LOW);
  digitalWrite(mor4, LOW); }

void Step_B(){

  digitalWrite(mor1, LOW);
  digitalWrite(mor2, HIGH);
  digitalWrite(mor3, LOW);
  digitalWrite(mor4, LOW);
}


void Step_C(){

  digitalWrite(mor1, LOW);
  digitalWrite(mor2, LOW);
  digitalWrite(mor3, HIGH);
  digitalWrite(mor4, LOW);
}

void Step_D(){

  digitalWrite(mor1, LOW);
  digitalWrite(mor2, LOW);
  digitalWrite(mor3, LOW);
  digitalWrite(mor4, HIGH);
}

void Step_OFF(){

  digitalWrite(mor1, LOW);
  digitalWrite(mor2, LOW);
  digitalWrite(mor3, HIGH);
  digitalWrite(mor4, LOW);
}

void Step_Forward(){
  Step_A();
  delay(speedN);
  Step_B();
  delay(speedN);
  Step_C();
```

```
  delay(speedN);
  Step_D();
  delay(speedN); }


void backward(){
  Step_D();
  delay(speedN);
  Step_C();
  delay(speedN);
  Step_B();
  delay(speedN);
  Step_A();
  delay(speedN);
}


void setup() {
// initialize the 8 pin as an output:
  pinMode(mor1, OUTPUT);
  pinMode(mor2, OUTPUT);
  pinMode(mor3, OUTPUT);
  pinMode(mor4, OUTPUT);
  Serial.begin(9600);
}

void loop(){
  unsigned int stepN = 48;
  Serial.println("clockwise");
  Step_OFF();
  while(stepN>0){
     Step_Forward();
    stepN -- ;
    }
  delay(2000);
  Serial.println("counterclockwise");
  Step_OFF();
  stepN = 48;
  while(stepN>0){
    backward();
    stepN -- ;
    }
  delay(2000);
}
```

Result :

Serial screen :



Board images :