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 :

Graphical user interface, application

Description automatically generated

Board images :

A computer on a desk

Description automatically generated with low confidenceA picture containing text, computer, electronics, computer

Description automatically generatedA computer on a desk

Description automatically generated with low confidence