28BYJ-48 Unipolar Stepper Motor

1- Internally the unit steps at 32 steps per revolution, but there's gearing already incorporated into the motor that reduces this by a factor of 64. Therefore, we actually get 2048 steps per revolution.

2- This tutorial by Modest Maker shows how to control the stepper motor without using a library. He shows animations that clearly show the sequence in which the coils are activated.
Chapter 10 - Exploring Stepper Motors (28-BYJ-48) with an Arduino
https://www.youtube.com/watch?v=SUziz1zupGk

3- However, normally we use the Arduino Stepper Library as explained here by Dronebotworkshop:
Stepper Motors with Arduino - Controlling Bipolar & Unipolar stepper motors
https://www.youtube.com/watch?v=0qwrnUeSpYQ&t=952s

4- There's also an Arduino AccelStepper library that allows acceleration and deceleration to be added. This is also explained in the Dronebotworkshop tutorial.

5- Arduino pins are connected to the ULN2003 driver at pins In1, In2, In3, In4. However, the pins must be energised in this sequence: 1-3-2-4. Therefore, the sequence must be correctly entered into this function or the motor won't turn:

```
Stepper steppermotor(STEPS_PER_REV, 8, 10, 9, 11);
```

Where:
Arduino pin 8 is connected to In1
Arduino pin 10 is connected to In3
Arduino pin 9 is connected to In2
Arduino pin 11 is connected to In4

6- In the code, the minus sign is used to move in the counterclockwise direction.

7- The max speed setting is around 1000.