

Tutorial Code:

```
//these pins can not be changed 2/3 are special pins
int encoderPin1 = 2;
int encoderPin2 = 3;

volatile int lastEncoded = 0;
volatile long encoderValue = 0;

long lastencoderValue = 0;

int lastMSB = 0;
int lastLSB = 0;

void setup() {
  Serial.begin (9600);

  pinMode(encoderPin1, INPUT);
  pinMode(encoderPin2, INPUT);

  digitalWrite(encoderPin1, HIGH); //turn pullup resistor on
  digitalWrite(encoderPin2, HIGH); //turn pullup resistor on

  //call updateEncoder() when any high/low changed seen
  //on interrupt 0 (pin 2), or interrupt 1 (pin 3)
  attachInterrupt(0, updateEncoder, CHANGE);
  attachInterrupt(1, updateEncoder, CHANGE);
}

void loop(){
  //Do stuff here

  Serial.println(encoderValue);
  delay(1000); //just here to slow down the output, and show it will work
  even during a delay
}

void updateEncoder(){
  int MSB = digitalRead(encoderPin1); //MSB = most significant bit
  int LSB = digitalRead(encoderPin2); //LSB = least significant bit

  int encoded = (MSB << 1) |LSB; //converting the 2 pin value to single
  number
  int sum = (lastEncoded << 2) | encoded; //adding it to the previous
  encoded value

  if(sum == 0b1101 || sum == 0b0100 || sum == 0b0010 || sum == 0b1011)
  encoderValue ++;
  if(sum == 0b1110 || sum == 0b0111 || sum == 0b0001 || sum == 0b1000)
  encoderValue --;

  lastEncoded = encoded; //store this value for next time
}
```