```
#include <Wire.h>
#include <Adafruit_Sensor.h>
#include <Adafruit_HMC5883_U.h>

#define TCAADDR 0x70

/* Assign a unique ID to this sensor at the same time */
Adafruit_HMC5883_Unified mag1 = Adafruit_HMC5883_Unified(1);
Adafruit_HMC5883_Unified mag2 = Adafruit_HMC5883_Unified(2);

void displaySensorDetails(Adafruit_HMC5883_Unified *mag)
{
  sensor_t sensor;
  mag->getSensor(&sensor);
  Serial.println("------------------------------------");
  Serial.print  ("Sensor:       "); Serial.println(sensor.name);
  Serial.print  ("Driver Ver:   "); Serial.println(sensor.version);
  Serial.print  ("Unique ID:    "); Serial.println(sensor.sensor_id);
  Serial.print  ("Max Value:    "); Serial.print(sensor.max_value); Serial.println(" uT");
  Serial.print  ("Min Value:    "); Serial.print(sensor.min_value); Serial.println(" uT");
  Serial.print  ("Resolution:   "); Serial.print(sensor.resolution); Serial.println(" uT");
  Serial.println("------------------------------------");
  Serial.println("");
  delay(500);
}

void tcaselect(uint8_t i) {
  if (i > 7) return;

  Wire.beginTransmission(TCAADDR);
  Wire.write(1 << i);
  Wire.endTransmission();
}


void setup(void)
{
  Serial.begin(9600);
  Serial.println("HMC5883 Magnetometer Test"); Serial.println("");

  /* Initialise the 1st sensor */
  tcaselect(2);
  if(!mag1.begin())
  {
    /* There was a problem detecting the HMC5883 ... check your connections */
    Serial.println("Ooops, no HMC5883 detected ... Check your wiring!");
    while(1);
  }

  /* Initialise the 2nd sensor */
  tcaselect(6);
  if(!mag2.begin())
```

```
  {
    /* There was a problem detecting the HMC5883 ... check your connections */
    Serial.println("Ooops, no HMC5883 detected ... Check your wiring!");
    while(1);
  }

  /* Display some basic information on this sensor */
  tcaselect(2);
  displaySensorDetails(&mag1);
  tcaselect(6);
  displaySensorDetails(&mag2);
}

void loop(void)
{
  /* Get a new sensor event */
  sensors_event_t event;

  tcaselect(2);
  mag1.getEvent(&event);

  /* Display the results (magnetic vector values are in micro-Tesla (uT)) */
  Serial.print("Sensor #1 - ");
  Serial.print("X: "); Serial.print(event.magnetic.x); Serial.print("  ");
  Serial.print("Y: "); Serial.print(event.magnetic.y); Serial.print("  ");
  Serial.print("Z: "); Serial.print(event.magnetic.z); Serial.print("  ");Serial.println("uT");

  tcaselect(6);
  mag2.getEvent(&event);
  /* Display the results (magnetic vector values are in micro-Tesla (uT)) */
  Serial.print("Sensor #2 - ");
  Serial.print("X: "); Serial.print(event.magnetic.x); Serial.print("  ");
  Serial.print("Y: "); Serial.print(event.magnetic.y); Serial.print("  ");
  Serial.print("Z: "); Serial.print(event.magnetic.z); Serial.print("  ");Serial.println("uT");

  delay(500);
}
```