// Define the number of samples to keep track of.  The higher the number,

// the more the readings will be smoothed, but the slower the output will

// respond to the input.  Using a constant rather than a normal variable lets

// use this value to determine the size of the readings array.

const int numReadings = 10;

int readings[numReadings];      // the readings from the analog input

int readIndex = 0;              // the index of the current reading

int total = 0;                  // the running total

int average = 0;                // the average

int inputPin = A0;

void setup() {

  // initialize serial communication with computer:

  Serial.begin(9600);

  // initialize all the readings to 0:

  for (int thisReading = 0; thisReading < numReadings; thisReading++) {

    readings[thisReading] = 0;

  }

}

void loop() {

  // subtract the last reading:

  total = total - readings[readIndex];

  // read from the sensor:

  readings[readIndex] = analogRead(inputPin);

  // add the reading to the total:

  total = total + readings[readIndex];

  // advance to the next position in the array:

  readIndex = readIndex + 1;

  // if we're at the end of the array...

  if (readIndex >= numReadings) {

    // ...wrap around to the beginning:

    readIndex = 0;

  }

  // calculate the average:

  average = total / numReadings;

  // send it to the computer as ASCII digits

  Serial.println(average);

  delay(1);        // delay in between reads for stability

}