

# Arduino Basics

## 7-Arduino

# Homework

1. Describe the difference between and the functions of Digital Pins and Analog Pins on the Arduino

Digital pins take on the value of 0 or 5 and can be used as an input or output. It can also be used to output PWM. Analog pins take on the value of 0 through 5 but can only be used as an input.

2. What is the purpose of the IDE?
  - a) Arduino provides a open-source development interface know as the Integrated Development Environment (IDE).
  - b) IDE supports program facility for program development, verification, and downloading to the Arduino board.
  - c) IDE support a serial monitor to allow users to interface with the program running on the Arduino board.
  - d) IDE provides some basic programs for the user to learn how to program the Arduino board.
  - e) The IDE runs on PCs and Macs and can be downloaded at [www.arduino.cc/en/main/software](http://www.arduino.cc/en/main/software).
  - f) An Arduino program is called a Sketch and is written in C/C++.

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3. What is the purpose of the serial monitor and serial plotter?

To interface with the user since the Arduino does not have a character display device.

4. Describe the structure of a Sketch.

Comment section (not mandatory), Global section (not mandatory), Set up section, and a loop section.

5. What is the computer language used for the Arudino?

C++

# Homework

## 6. HONORS STUDENTS ADD THE FOLLOWING

Can you develop a Sketch to read a negative voltage?

If so, how? If not, what would you do to read this voltage?

Since the analog pins only read voltages from 0 to 5 volts, they can not read negative voltages.

To read negative voltage, you need to reverse the polarity of the signal. If it is possible reverse the leads of the circuit connecting to the Arduino or most likely you will have to build a circuit which inverts the polarity of the negative voltage.