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1. Arduino basics

a. Where in the Arduino IDE (version 2 or later) do you set the Arduino board and port to connect to a device?

Board: Tools -> Board

Port: Tools -> Port

b. How do you import a new library into the Arduino IDE and what is the syntax for adding the library to a specific sketch?

Syntax: `include library`

Import: Sketch -> Include Library -> Add .ZIP Library

c. How many times do the setup and loop functions run in a sketch?

Setup: 1

Loop: Indefinite

d. If you want to declare analog pin 7 as a variable, what is the syntax (assume pin variable name is inputPin)?

`inputPin = A7;`

e. Where do you place and what is the syntax to setup a digital pin as an input? (assume digital pin 10 is the pin being used).

`pinMode(10, INPUT);`

Insert code in the setup section of the sketch.

f. What is the syntax that is used to prepare the Serial monitor for display at a baud rate of 115200?

`Serial.begin(115200);`

g. If you want to light up the UNO onboard LED, what is the pin you would use?

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h. What is the maximum current that can be supplied through any I/O Arduino pins?

External Power: 40mA

Computer USB Powered: Max USB current draw

i. What is the syntax to print the value of the variable “val” to the serial monitor with a new line each time it prints?

```
Serial.println(val);
```

2. Arduino Serial communication

a. The USB connection between an Arduino and a computer uses the board’s primary dedicated serial port. Which digital pins are associated with this primary serial port?

0 and 1 / RX and TX

b. What does the function Serial.available() do?

Gets the number of bytes of data available to read from the serial port.

c. What are the numeric values of the bytes of data being sent based on the following code:

```
Serial.println(“I’m 22!”);  
73 44 109 32 50 50 33 10
```

d. What will appear in the Serial Monitor based on the following code? (This code assumes an Arduino Uno sending info across the mySerial channel which was set up using the SoftwareSerial.h library, and an Arduino Mega receiving that information on the Serial1 channel):

Sending Code:

```
mySerial.print(9);
```

Receiving Code:

```
int data = Serial1.read();  
Serial.print(data);
```