**Assignment 2**

### **What is Arduino?**

Arduino is an Italian company that designs and sells open source

Single Board microcontrollers such as Arduino Uno.

1. **What does IDE stand for ?**

IDE stands for Integrated Development Environment. It is an application that is used to make programming easier by having the compiler, source editor and debugger at once place.

1. **I Want To Design My Own Board, What Should I Do?**

Circuit Design usually starts with creating a circuit diagram for the said idea and having it printed. However, the process of building a circuit can be made easier by using computer simulations using tools such as tinkercad or circuito.

1. **Is it possible to program Microcontroller directly?**

Yes, for example Arduino boards are programmed using the Arduino IDE and using Arduino language whose syntax resembles C++ code.

1. **How Can I Change The Usb Firmware?**

To change the USB firmware, we perform the following steps:

1. Install a DFU programmer. Sudo apt-get install dfu-programmer on Debian based linux.

2. Download a .hex file suitable for the board which will be used as the new firmware.

3. Follow the official docs for the specific instructions for each board. Here, you may have to solder a resistor.

4. Reset the firmware by connecting the reset pin with the ground.

5. Verify that the reset was a success by checking the serial ports list in the Arduino IDE.

6. Follow the docs for the specific commands to flash the new .hex file and reset the board.