Circuit Diagram :-
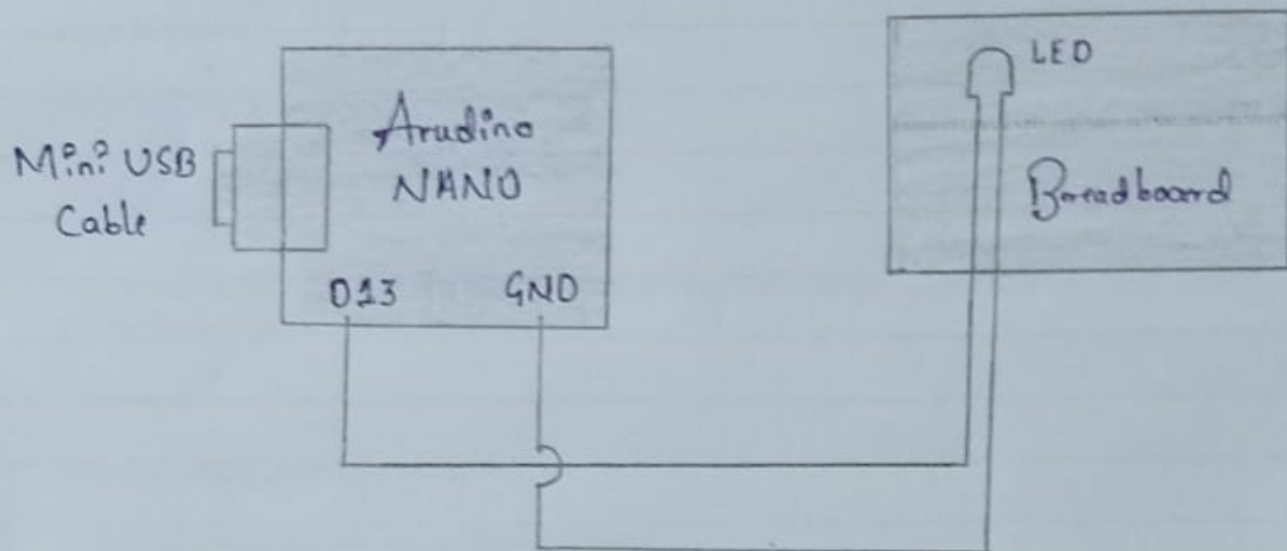
Mini USB
Cable

Arudino
NANO

D13   GND

LED

Breadboard

To interface LED/Buzzer with Arudino NANO and Write a program to "turn ON" LED for 1 seconds after 2 seconds.

Aim :- To interface LED/Buzzer with Arudino NANO and Write a program to turn ON the LED for 1 seconds after 2 seconds.

Apparatus required :-

Sl. No	Equipment Name	Quantity
1.	Arudino NANO with Cable	1
2.	LED/Buzzer	1
3.	Personal Computer	
4.	Jumper Wire	

Theory :-
* The Arudino-Nano board features an Atmel ATmega328 microcontroller operating at 5V with 2kb of RAM, 32kb of flash memory for storing programs and 1kb of EEPROM for storing Parameters.
* The clock speed is 16MHz, which translates to about executing about 300,000 lines of C source code Per second.
* The board has 14 digital I/O pins and 6 analog input pins.

Program :-

```
# define led Pin 13

Void setup ()
{
    pin Mode ( led Pin 13, OUTPUT); // initialize the
                LED_bultin pin as output
}

Void loop ()
{
    digital Write (13, HIGH); // turn ON the LED
    delay (1000);
    digital Write (13, LOW); // turn OFF the LED
    delay (2000);
}
```

* There is a USB connector for talking to the host computer and a DC power jack for connecting an external 6-12V power source, for example a 9 v battery, When running a program while not connected to the host computer.

* The Arudino programming language is a simplified version of c/c++.

* If you know C, programming the Arduino will be familier. If you do not know C, no need to worry as only a few commands are needed to perform useful functions.

* In this experiment the pinMode command sets the LED pin to be an output. The first digital Write command says to set pin 13 of the Arudino HIGH, (or) +5 volts.

* This sends current from the pin, through the resistor, through the LED (which lights it) and to ground.

* The delay (500) command waits for 5 msec.

* The second digital Write command sets pin 13 to LOW (or) OV stopping the current there by turning the LED off.

* Code within the brackets defining the loop () function is repeated forever, which is why the LED blinks.

Procedure :-

1. Connections are made as per the circuit diagram
B. Configuring the Arudino IDE
   Step 1 :- Select Arudino and click on the tools option
   Step 2 :- select the processor "ATmega 328 P" > ATmega328P (old bootloader)
   Step 3 :- select the tools > Ports> (COM3/COM4) default is COM3
3. Type the program in the editer window of arudino IDE
4. Verify and Upload the same.
5. Note the output through LED/buzzer.

Result :-

Henceforth, the practicle establishment for interfacing arudino NANO with LED/buzzer is successfully achieved and verified.