Task-1

Design a circuit to implement the following:

Measure the distance of the nearest obstacle using ultrasonic sensor (HC SR05) and Arduino UNO.

1. If the distance is greater than X, then a DC motor should rotate clockwise
2. If the distance is lesser than Y (X >Y), then the same DC motor should rotate anti-clockwise
3. If the distance is between X and Y, then a DC motor should stop.

Simulate your circuit and code on Tinkercad and manually feed the values to the ultrasonic sensor to check if the above 3 conditions are satisfied.

Components required : Arduino UNO, small breadboard, DC motor, Ultrasonic sensor, L293D IC (not the module)

Ground Work : Learn the working of ultrasonic sensor, and make yourself aware about how to control a DC motor using L293D IC and Arduino UNO. Make an account on Tinkercad and start simulating.

NOTE: We used X=80 and Y=60.Although you can use any convenient values for simulation.

Task-2

Design a circuit and write a code to display your name on a 16*2 (16 columns and 2 rows) LCD Display in a left scrolling fashion, using an Arduino UNO. Simulate this circuit and code on Tinkercad and make a video of the same. Submit this video through your BITS Mail before the deadline.

Be sure that you are familiar with the function of all the pins on the LCD display and all the library functions used in the code. We expect you to use the inbuilt Arduino libraries for LCD display.

Besides, make sure that you are well versed with all the components on the Arduino UNO. Also, go through the datasheets of the microcontrollers embedded on Arduino.

HINT: the official website Arduino.cc might come handy for connections.

Submission : Once you are satisfied with the simulation, click on the SHARE button on your screen, a pop up message will display the link to your project. Copy that link and mail it to the undersigned.