United International **University**

QUEST FOR EXCELLENCE

Lab Report (Grouped)
Microprocessor and Microcontroller lab
Group: 3 | Section: D

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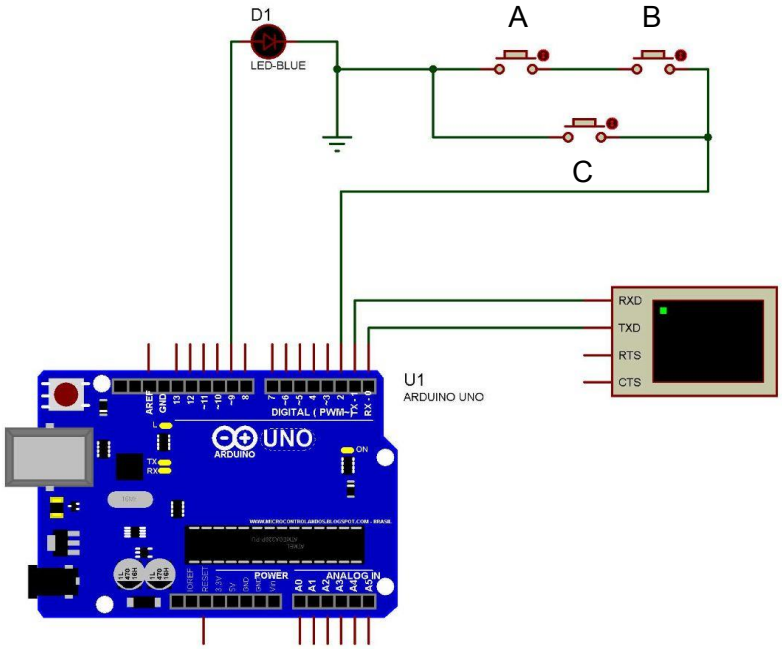
1. Implement the following function using push button. → A*B+C
   - Discuss in which cases the LED will be lit.

1. <u>Answer:</u>



- In the following case, the LED will be lit:

A	B	C	A*B	A*B+C	Lit
0	0	0	0	0	No
0	0	1	0	1	Yes
0	1	0	0	0	No
0	1	1	0	1	Yes
1	0	0	0	0	No
1	0	1	0	1	Yes
1	1	0	1	1	Yes
1	1	1	1	1	Yes

As we already know that for (A*B) the given bits will be 1 as output if and only if both A and B bits are 1 otherwise it'll be 0 (concept of AND gate). we'll get 1 as output for the given function → A*B + C if any of the bits either A*B or C is 1 (concept of OR gate). So if the output is 1 we can say that the LED will be Lit otherwise not. (attached chart above)

2. When your name_lastDigitOfID is written in the serial monitor,it will print “Thank You for login” otherwise it will print “No Access”?

2. Answer:

Assume that my password is: Tushar_0 if I type the exact string in the serial monitor then it’ll print “Thank You for login” if not match the password that I set earlier it’ll print “No Access”. The code is given below for the whole system (Q.1 and Q.2)

```
void setup()
{
  Serial.begin(9600);
  pinMode(2, INPUT_PULLUP);
  pinMode(9, OUTPUT);
}

void loop()
{
  int x = digitalRead(2);
  if (x == LOW)
  {
    digitalWrite(9, HIGH);
    delay(1000); // wait for a second
  }
  else {
    digitalWrite(9, LOW);
  }
  //Serial Monitor Start
  if(Serial.available()>0)
  {
    String s1="Tushar_0";
    String s = Serial.readString(); // read a single 'string'
    if(s==s1){
      Serial.println("Thank You for Login.");
    }else{
      Serial.println("No Access.");
    }
  }
}
```