STATE UNIVERSITY OF BANGLADESH (SUB)

Assignment -01

Course No: CSE-406

Course Name: Computer Peripherals and Interfacing Lab

Submitted to:

Sifat Munim

Lecturer,

Department of CSE, SUB

Submitted By:

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Batch: 47

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CODE:

```
#include <LiquidCrystal.h>
#include <Keypad.h>
const byte ROWS = 4;
const byte COLS = 4;
//Define the Keymap
char keys[ROWS][COLS] = {
 {'7','8','9','D'},

 {'4','5','6','C'},

 {'1','2','3','B'},

 {'*','0','#','A'}

 };
 byte rowPins[ROWS] = {A0 ,A1, A2, A3};
 byte colPins[COLS] = {10, 9, 8, 7};
 Keypad kpd = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );
 LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
 long Num1,Num2,Number;
 char key,N0_KEY,action;
 boolean result= false;
 void setup(){
 lcd.begin(16,2);
 lcd.print("Calculator");
 lcd.setCursor(0,1);
 lcd.print("HELLO Rimi");
 delay(1000);
```

```
lcd.clear();
}
void loop(){
//store pressed key value in a char container
key= kpd.getKey();
if(key!=N0_KEY)
DetectButtons();
if(result==true)
CalculateResult();
DisplayResult();

}
void DetectButtons()
{
lcd.clear();
if(key=='*')
{
Number=Num1=Num2=0;result=false;
}
if(key=='1')
{
Serial.println("Button 1");
if(Number==0)
Number=1;
else
Number=(Number*10)+1; //if pressed twice

}
```

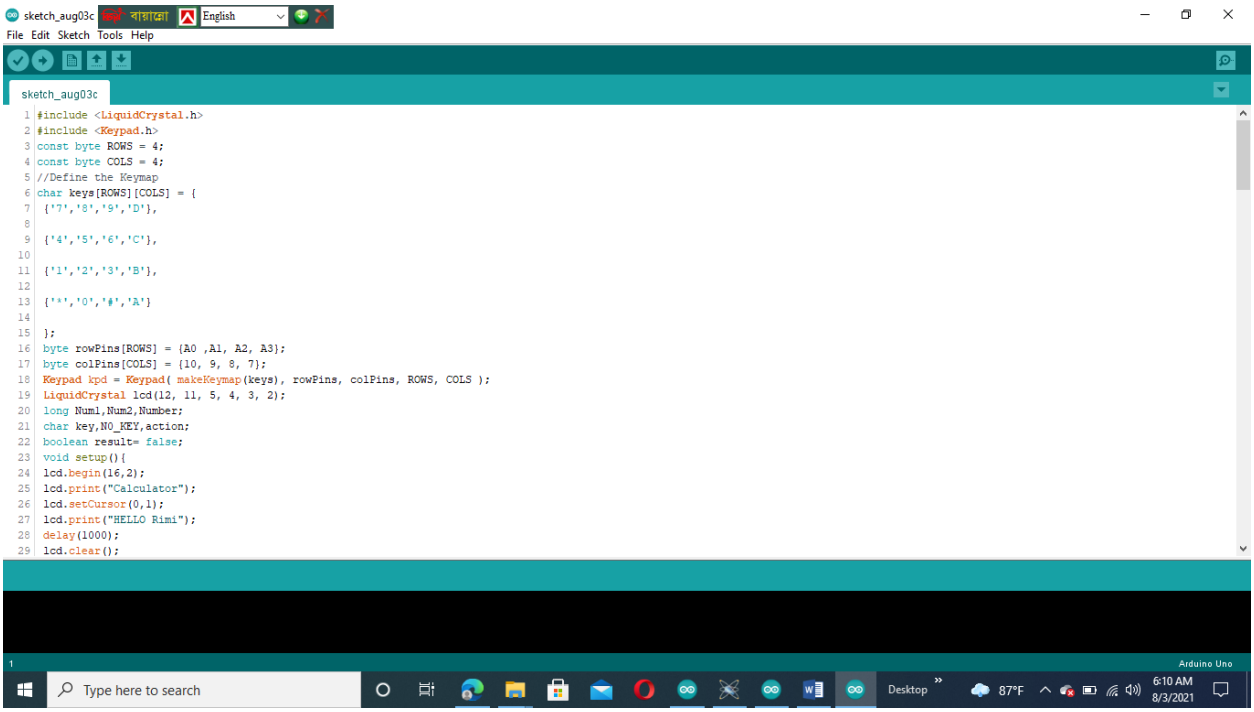
```
if(key=='4')
{
if(Number==0)
Number=4;
else
Number=(Number*10)+4;
}

if(key=='7')
{
if(Number==0)
Number=7;
else
Number=(Number*10)+7;
}
if(key=='0')
{
if(Number==0)
Number=0;
else
Number=(Number*10)+0;
}
if(key=='2')
{
if(Number==0)
Number=2;
else
Number=(Number*10)+2;
}
```

```
if(key=='5')
{
if(Number==0)
Number=5;
else
Number=(Number*10)+5;
}
if(key=='8')
{
if(Number==0)
Number=8;
else
Number=(Number*10)+8;
}
//Equals to button
if(key=='#')
{
Num2=Number;
result=true;
}
if(key=='3')
{
if(Number==0)
Number=3;
else
Number= (Number*10)+3;

}
if(key=='6')
```

```
{
if(Number==0)
Number=6;
else
Number= (Number*10)+6;

}
if(key=='9')
{
if(Number==0)
Number=9;
else
Number= (Number*10)+9;

}
//Detecting Buttons on Column 4
if(key=='A'||key=='B'||key=='C'||key=='D')
{
Num1= Number;
Number=0;
if(key=='A')
{action='+';}
if(key=='B')
{action='-';}
if(key=='C')
{action='*';}
if(key=='D')
{action='/';}
delay(100);
```

```
}


}
void CalculateResult()
{
if(action=='+')
Number=Num1+Num2;
if(action=='-')
Number=Num1-Num2;
if(action=='*')
Number=Num1*Num2;
if(action=='/')
Number=Num1/Num2;
}
void DisplayResult()
{
//set the cursor to column 0,line 1 and display the results
lcd.setCursor(0,0);
lcd.print(Num1);lcd.print(action);lcd.print(Num2);
if(result==true)
{
lcd.print("=");
lcd.print(Number);
}
//set the cursor to column 0,line 1 and display the result
lcd.setCursor(0,1);
lcd.print(Number);
}
```

SCREENSHOT: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File Edit Sketch Tools Help
sketch_aug03c
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lcd.print("HELLO Rimi");
delay(1000);
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Arduino Uno
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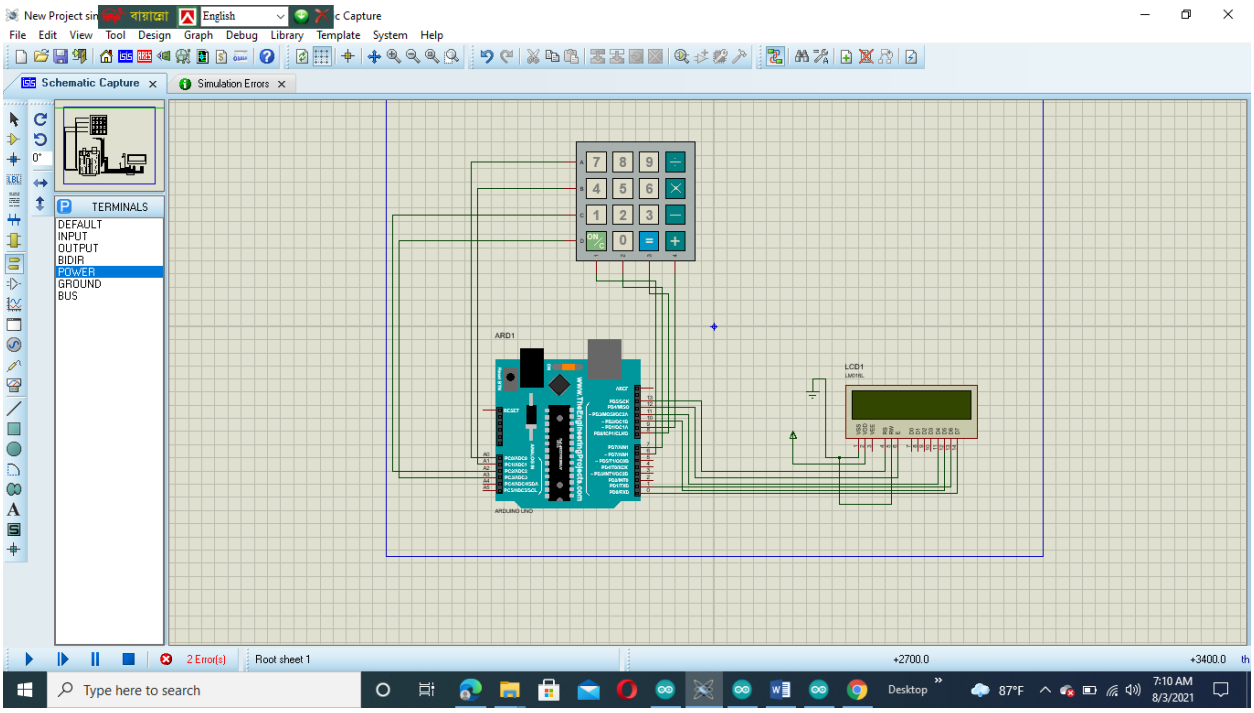
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Schematic Capture
Simulation Errors
TERMINALS
DEFAULT
INPUT
OUTPUT
BIDIR
POWER
GROUND
BUS
ARD1
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