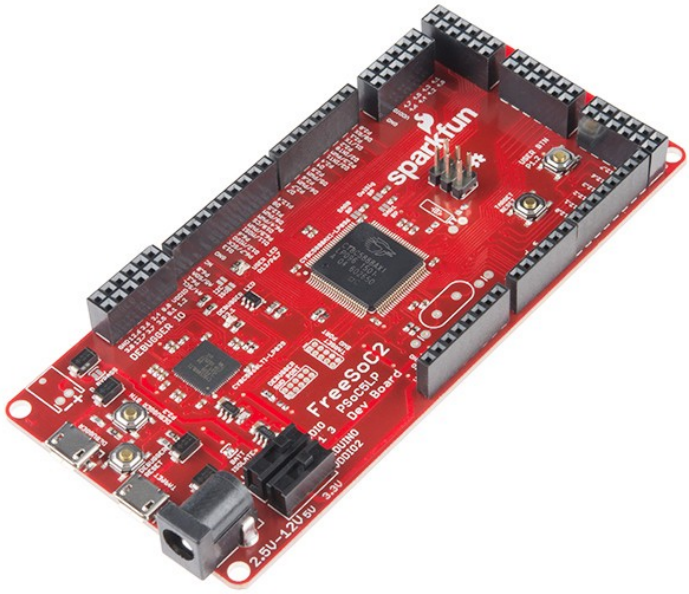
TENET TECHNETRONICS

2016

Reading Push button with Buzzer/LED using FreeSoc2 (PSoC 5LP) and PSoC Creator



Author: Gurudatta Palankar

Version: 1.0

Introduction:

The FreeSoC2 micro-controller based on the PSoC 5LP (Programmable System on a Chip) brings together features of the programmable devices and micro-controller-type systems on chips into one package. By placing a programmable fabric between the peripherals and the pins, the FreeSoC2 allows any function to be routed to any pin! Moreover, the on-board PSoC includes a number of programmable blocks which allow the user to define arbitrary digital and analog circuits for their specific application. To get the most out of the device, you will need to use the PSoC Creator IDE.

Step 1: Open PSOC creator IDE.

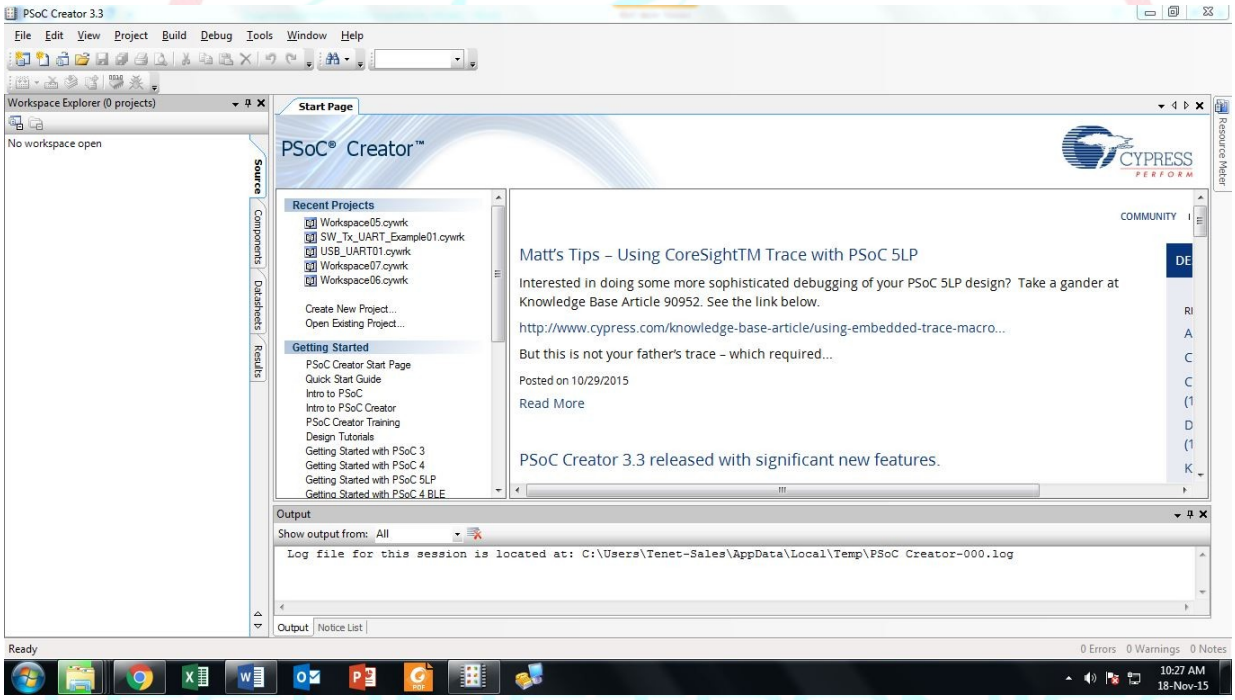


Figure 1

Step 2: File-> new project -> design -> PSoC 5LP design & save with desired name.

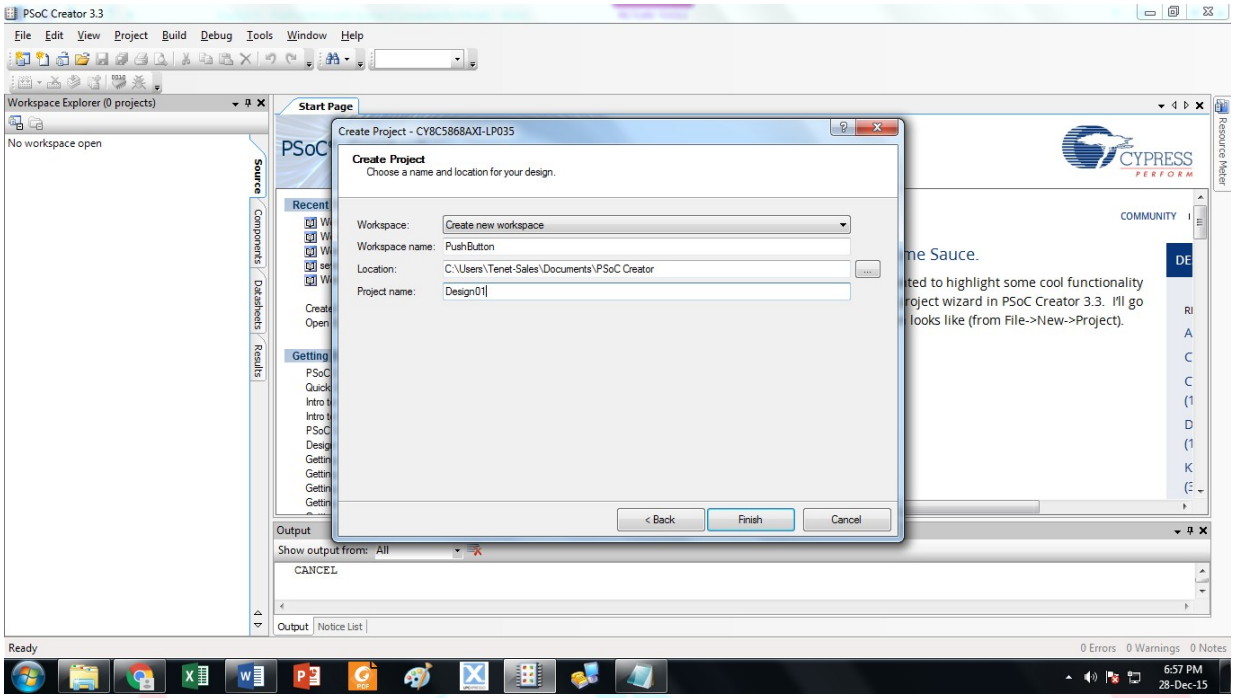


Figure 2

Step 3: Open TopDesign.cysch from workspace explorer.

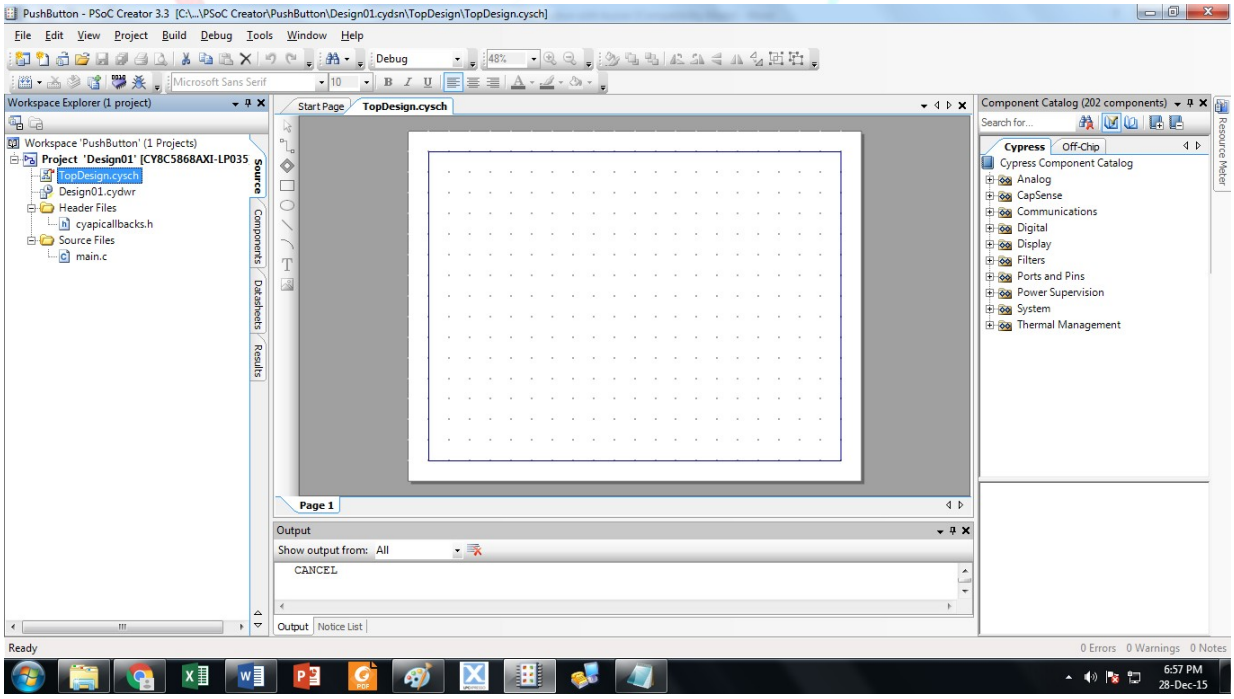


Figure 3

Step 4: Search for Digital input and output pin from the Component catalog on right side of the window. Drag the Digital output pin onto the workspace

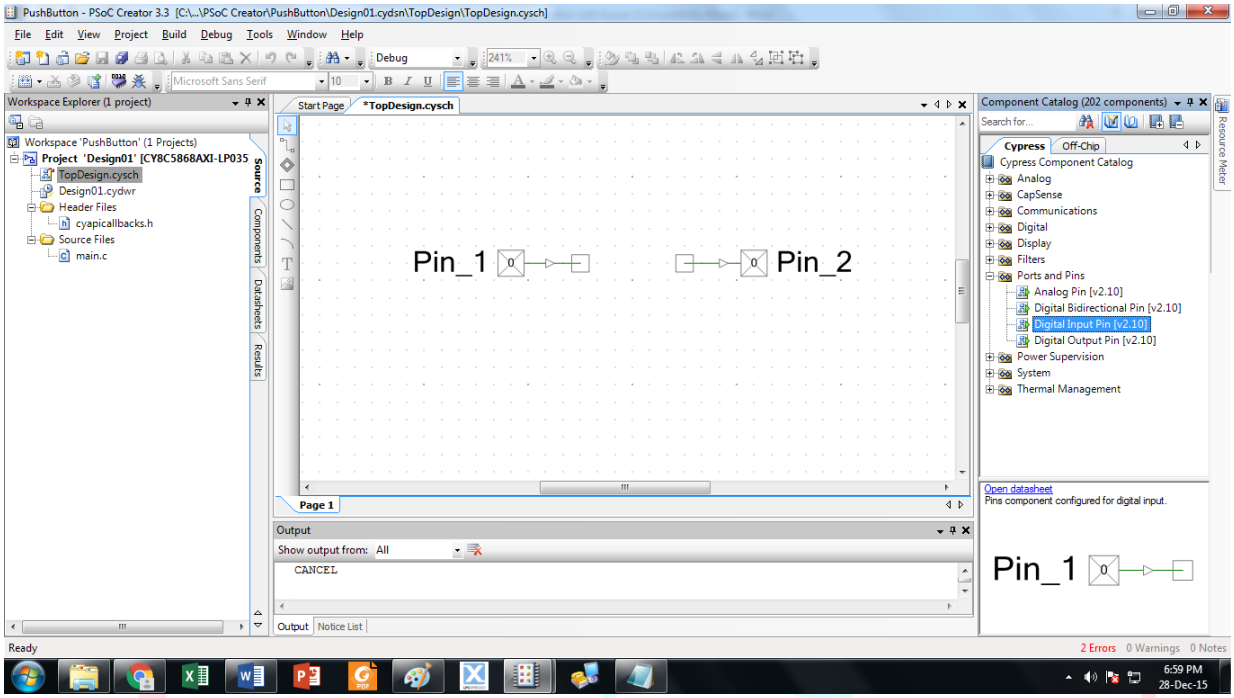


Figure 4

Step 5: Double click on the Digital input pin and change the name if you wish to. De-select HW connection. Configure it as Resistive pull-down.

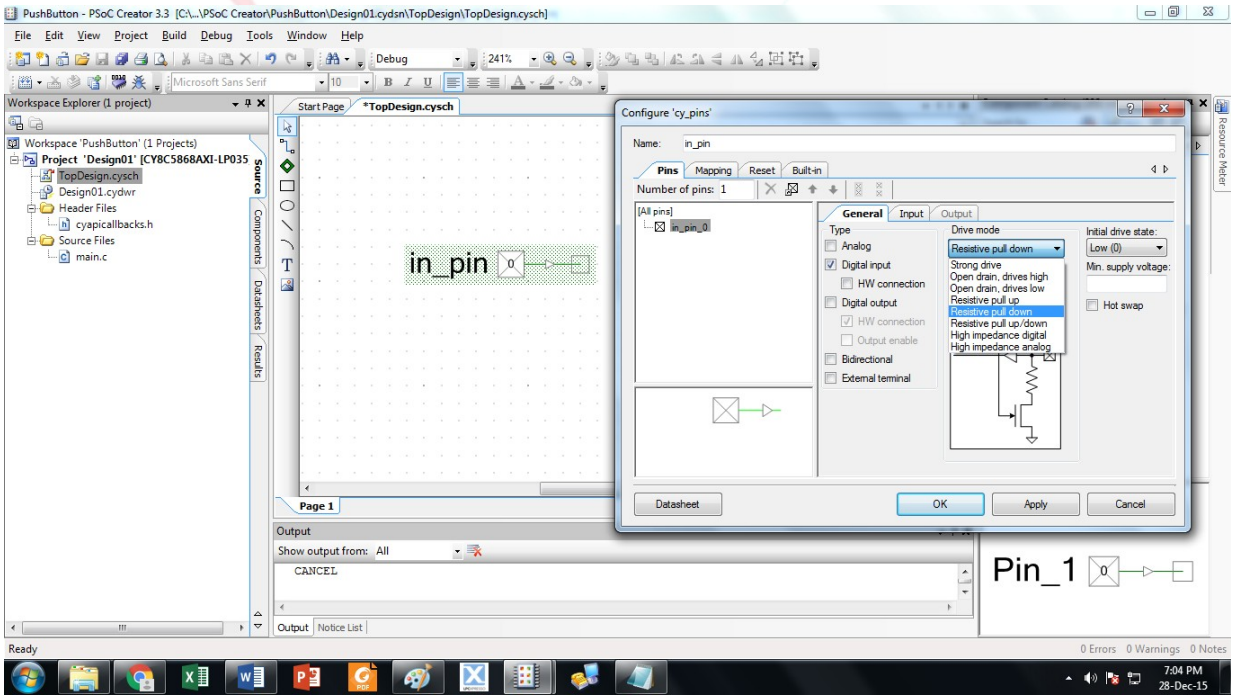


Figure 5

Step 6: Double click on the Digital output pin and change the name if you wish to. De-select HW connection.

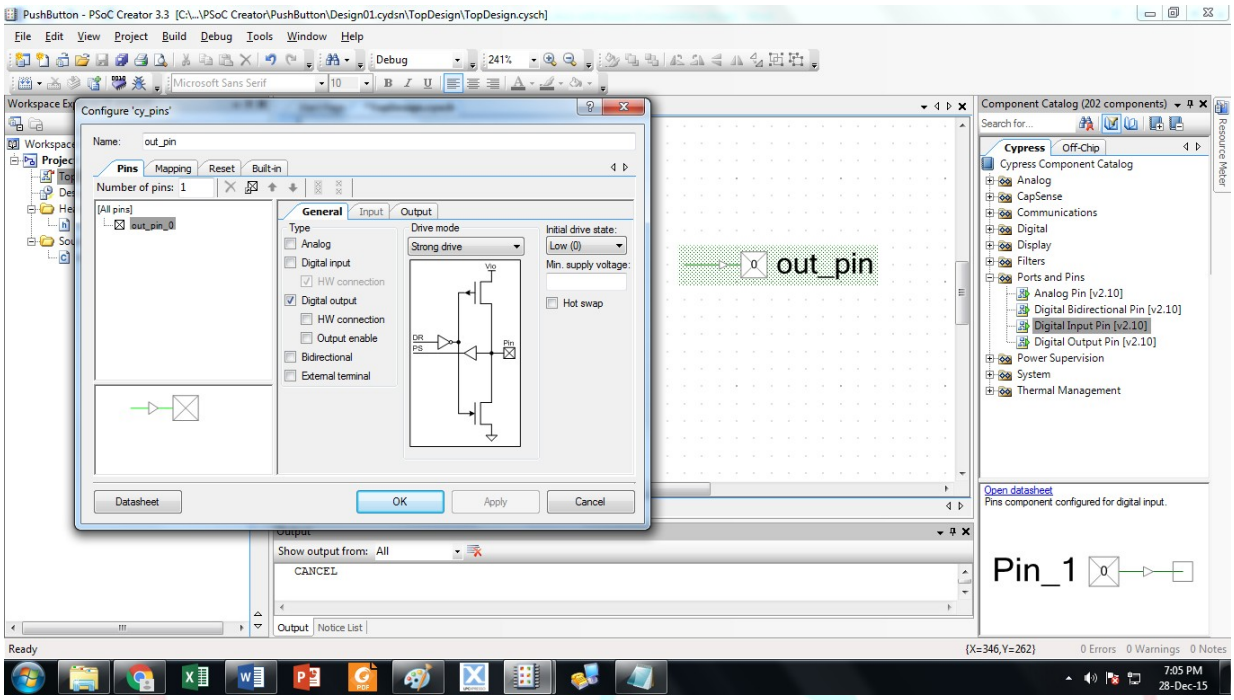


Figure 6

Step 7: After configuring build the project. As we can generate user-defined APIs which will ease us while writing code. We can see APIs generated in the Workspace Explorer on the left side of the window.

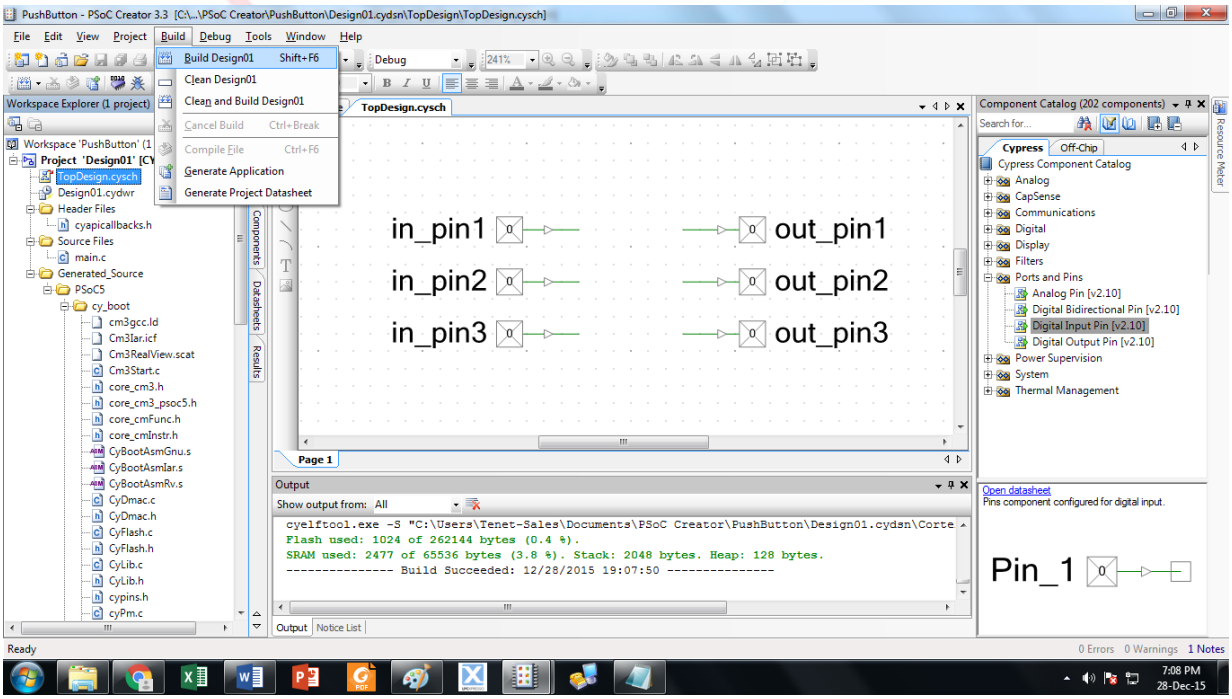


Figure 7

Step 8: Double click on main.c and write the code and build it.

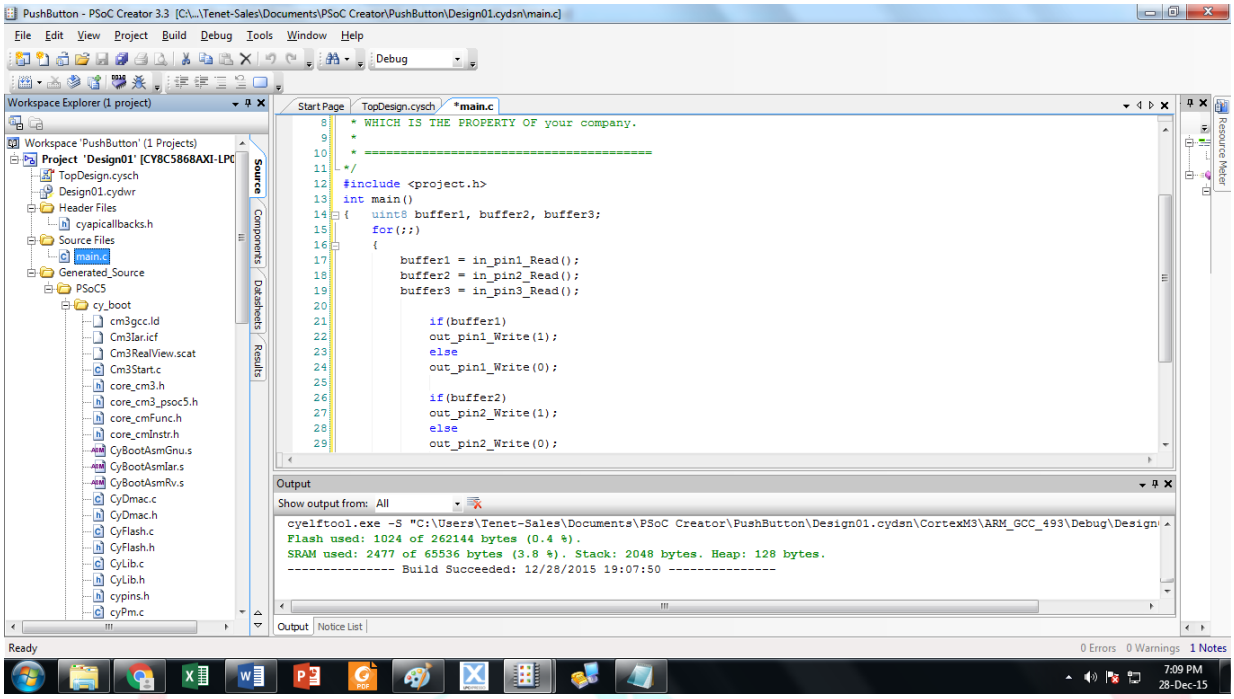


Figure 8

CODE:

```
#include <project.h>
int main()
{   uint8 buffer1, buffer2, buffer3;
    for(;;)
    {
        buffer1 = in_pin1_Read();
        buffer2 = in_pin2_Read();
        buffer3 = in_pin3_Read();

            if(buffer1)
            out_pin1_Write(1);
            else
            out_pin1_Write(0);

            if(buffer2)
            out_pin2_Write(1);
            else
            out_pin2_Write(0);

            if(buffer3)
            out_pin3_Write(1);
            else
            out_pin3_Write(0);
    }
}
```

Step 9: Finally double click on Design01.cydwr, assign pins to appropriate port and build it.

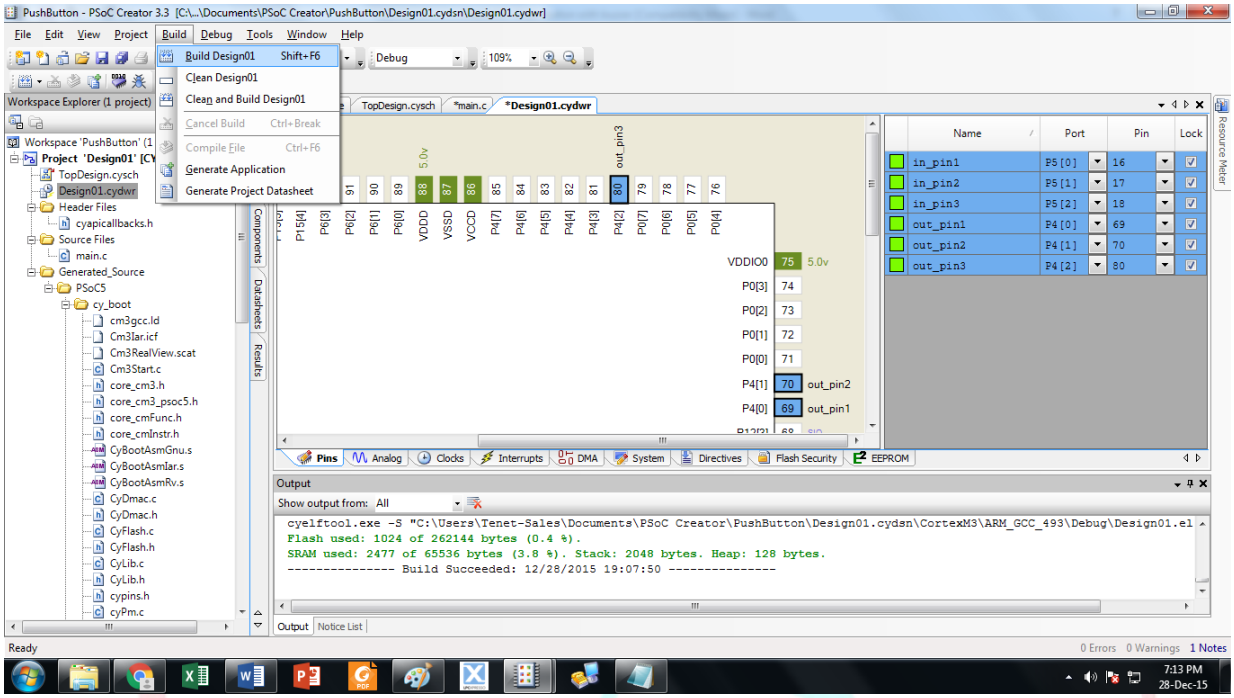


Figure 9

Step 10: If all goes well, goto to Debug and click on Program.

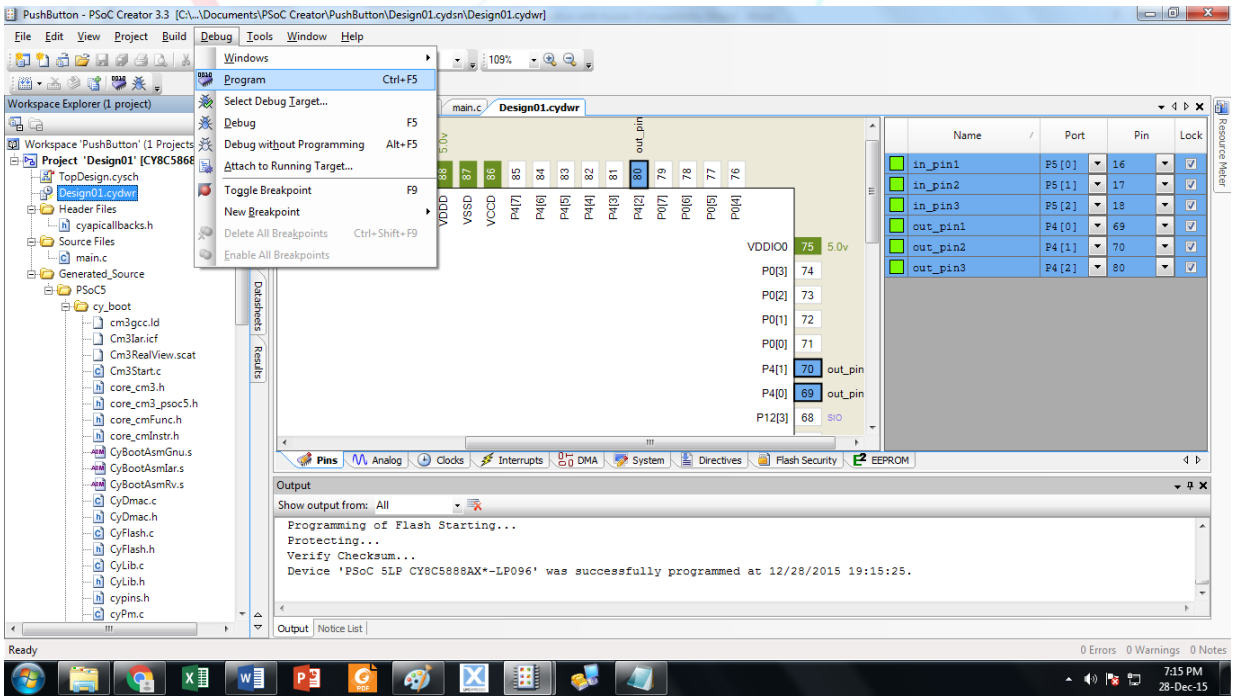


Figure 10

CONNECTION DIAGRAM:

Push button with buzzer:

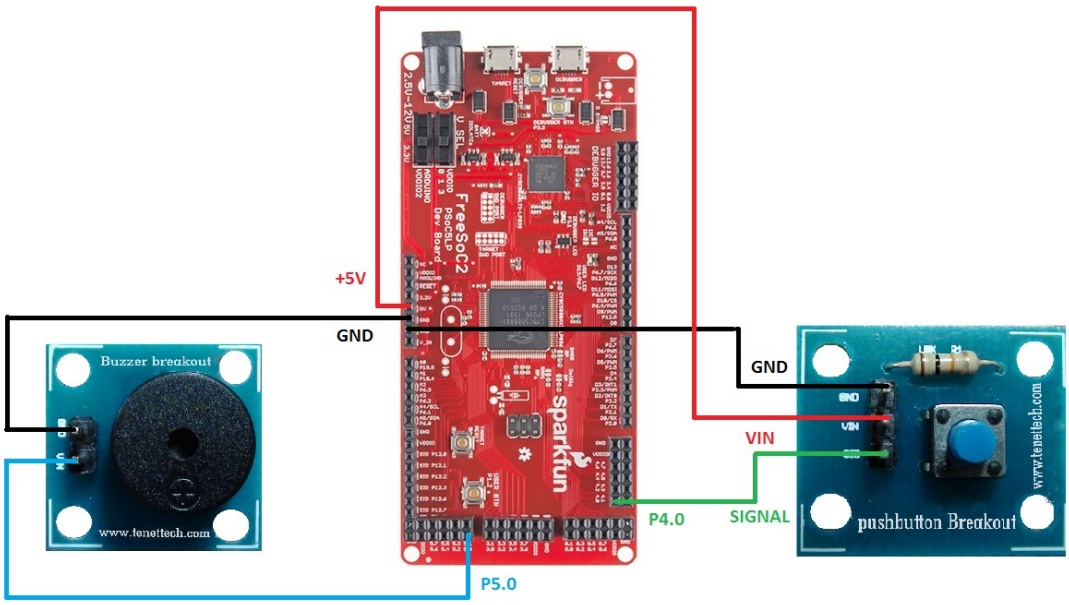


Figure 11

Push button with LED:

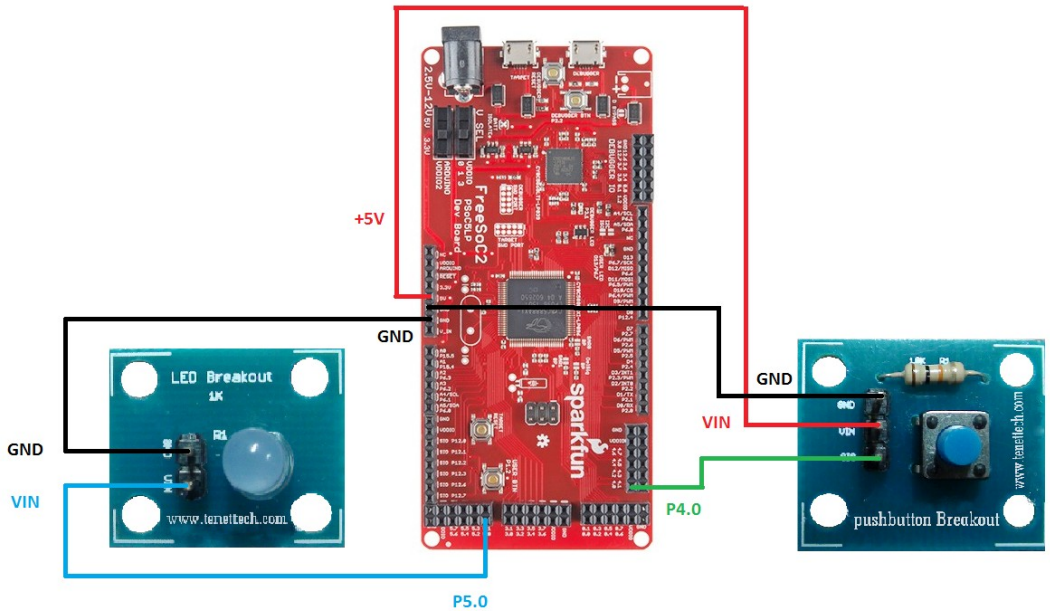


Figure 12

OUTPUT:

Push button with buzzer:

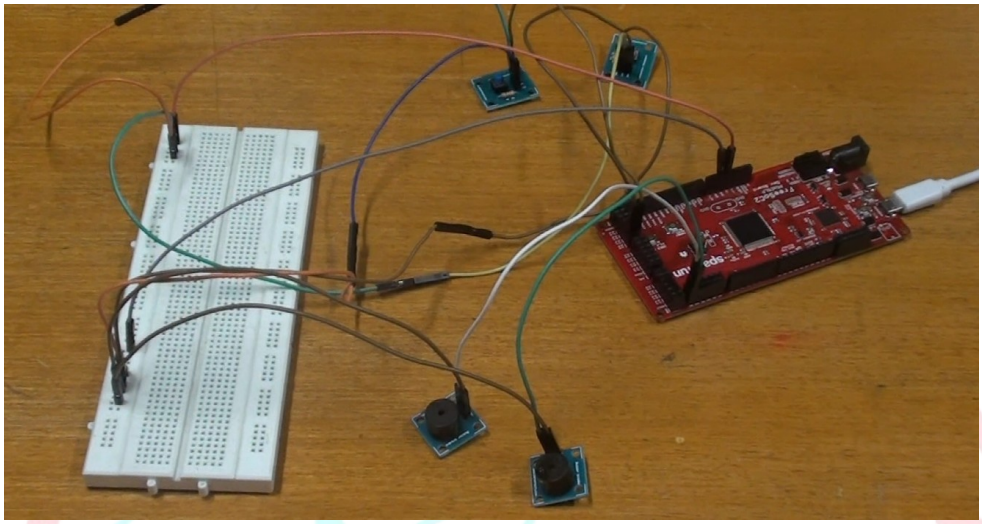


Figure 13

Push button with LED:

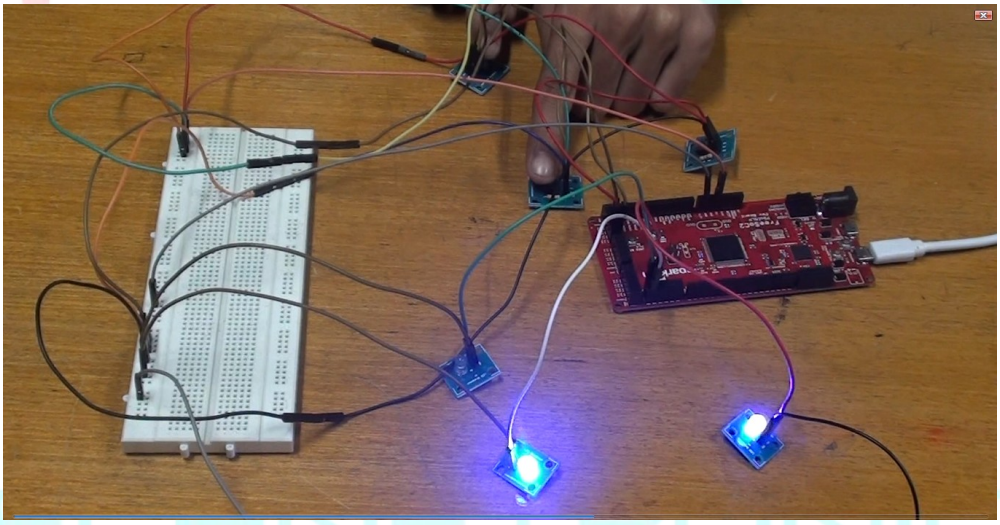


Figure 14

For product link:

1. **http://www.tenettech.com/product/7241/freesoc2-development-board-psoc5lp**

For more information please visit: www.tenettech.com

For technical query please send an e-mail: info@tenettech.com