

# University of Engineering and Technology, Peshawar

Department of Computer Systems Engineering.

Course : CSE-303 Microprocessor Based System Design

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Section

Batch

**Submitted to**



**19 PWCSE 1743**

A

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## Task 02

- A. Generate a signal on pin P1.2 having a frequency equal to 200 Hz with a duty cycle of 40%.
- B. When a user presses a button at P1.1 the frequency changes to 100Hz with a 60% duty cycle.
- C. Show it on an oscilloscope. Use only Proteus.
- D. Each time a user presses a button the signal toggles from A to B and then B to A on the next subsequent press.

## Task 01 (A)

Generate a signal on pin p1.2 with frequency 200Hz and duty cycle  
40%

### Source Code

```
#include <reg51.h>
#include <stdio.h>
```

```

sbit pin = P1^0;

void Delay(unsigned int delay);

int main(){

    while(1){
        pin = 1;
        Delay(2);
        pin = 0;
        Delay(3);
    }

    return 0;
}

void Delay(unsigned int delay){
    unsigned int i;
    unsigned int j;

    for (i = 0; i<delay; i++){
        for (j = 0; j<122; j++);
    }
}

```

## Task 02\_b

User presses a button at pin p1.2 with frequency 100hz and duty cycle 60%

### Source Code

```

#include <reg51.h>
#include <stdio.h>

sbit PIN = P1^1;
sbit LED = P1^2;

void Delay(unsigned int delay);

```

```

int main(){
    while(1){
        if(PIN == 0){
            LED = 1;
            Delay(6);
            LED = 0;
            Delay(4);
        }else if (PIN == 1){
            LED = 1;
            Delay(2);
            LED = 0;
            Delay(3);
        }else;
    }

    return 0;
}

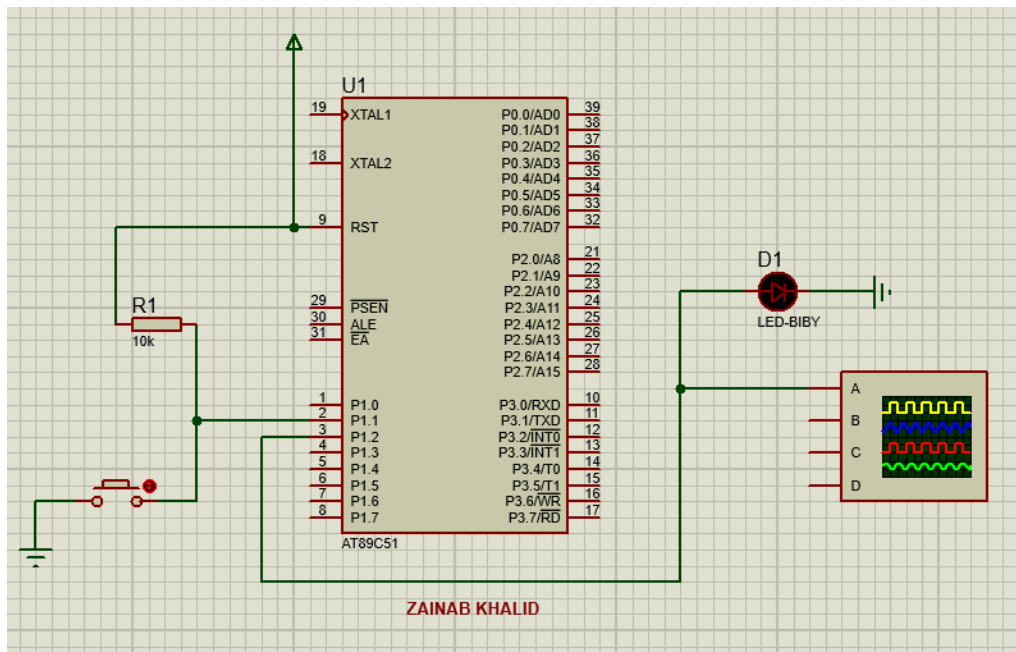
void Delay(unsigned int delay){
    unsigned int i;
    unsigned int j;

    for (i = 0; i<delay; i++){
        for (j = 0; j<123; j++);
    }
}

```

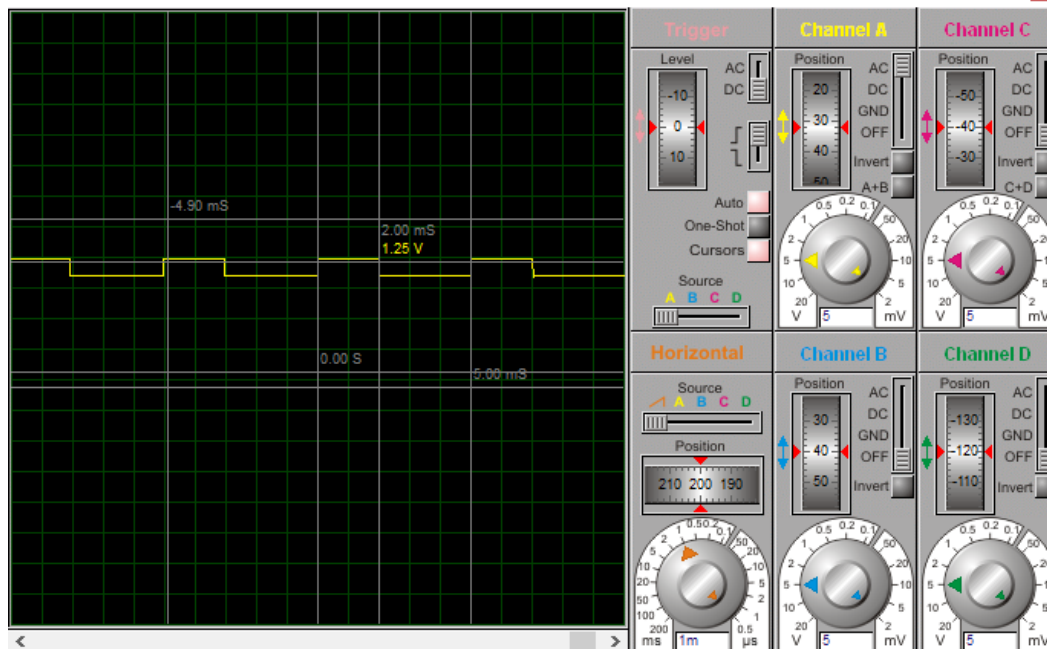
Task 02\_c

## Schematic Diagram



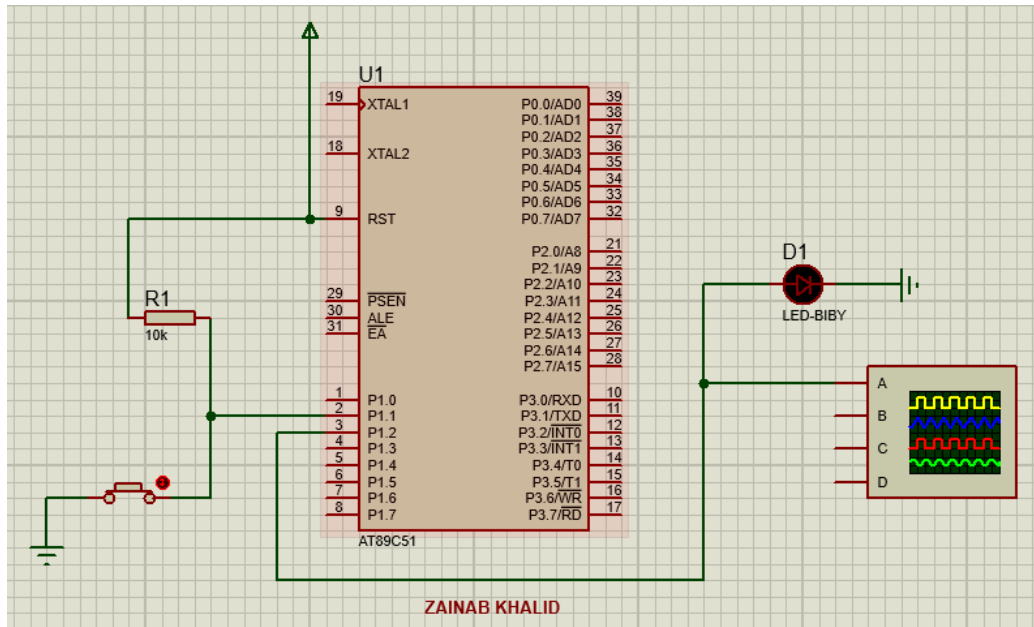
## Oscilloscope (Wave Form)

Digital Oscilloscope



## Task 02\_d

### Schematic Diagram



### Oscilloscope (Wave Form)

