LED BLINKING

MPMC PROJRCT

PROJECT MEMBERS

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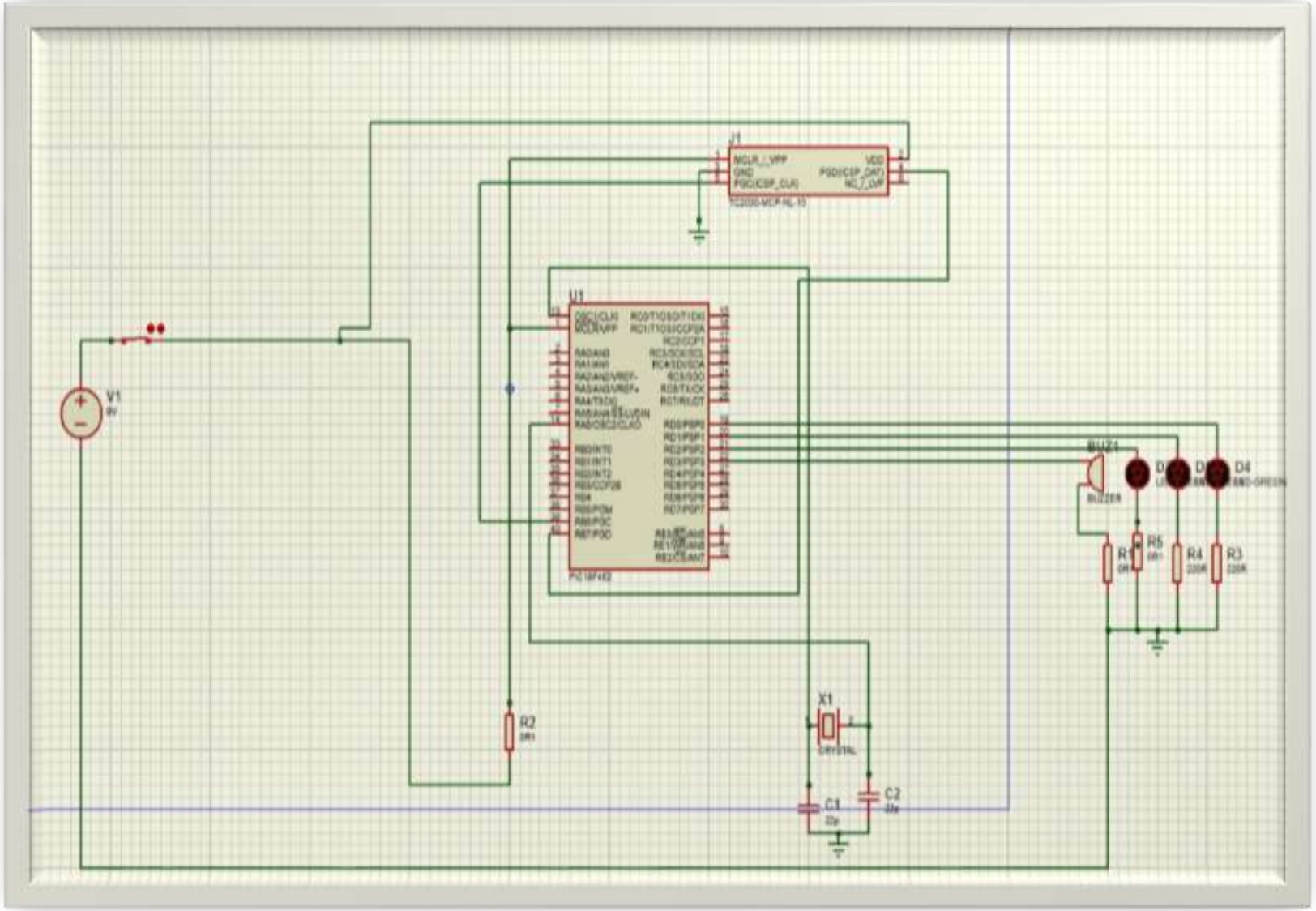
SIMULATION



WORKING OFOUR PROJECT

CONTENT:

- MAIN COMPONENTS OF OUT PROJECT CONSISTS OF BUZZER, RED , YELLOW AND BLUE LED'S RESPECTIVELY.

  1)BUZZER REPRESENTS-RD0 PIN.

  2) RD1 PIN FOR RED LED .

  3) RD2 PIN FOR YELLOW LED.

  4) RD3 PIN FOR BLUE LED RESPECTIVELY.

- TESTING:

  IN THE PHASE OF TESTING , BUZZER (RD0) BUZZES AND TURNS OFF AND RED LED (RD1) GLOWS AND TURNS OFF. SIMILARLY YELLOW (RD2) AND

  BLUE (RD3) LED'S BLINKS AND GLOWS OFF.

- LOOP:

  WHEN LOOP INSTRUCTION IS GIVEN BUZZER AND ALL THE RESPECTIVE LED'S ARE HIGH AND HENCE THEY GLOW CONTINOUSLY.

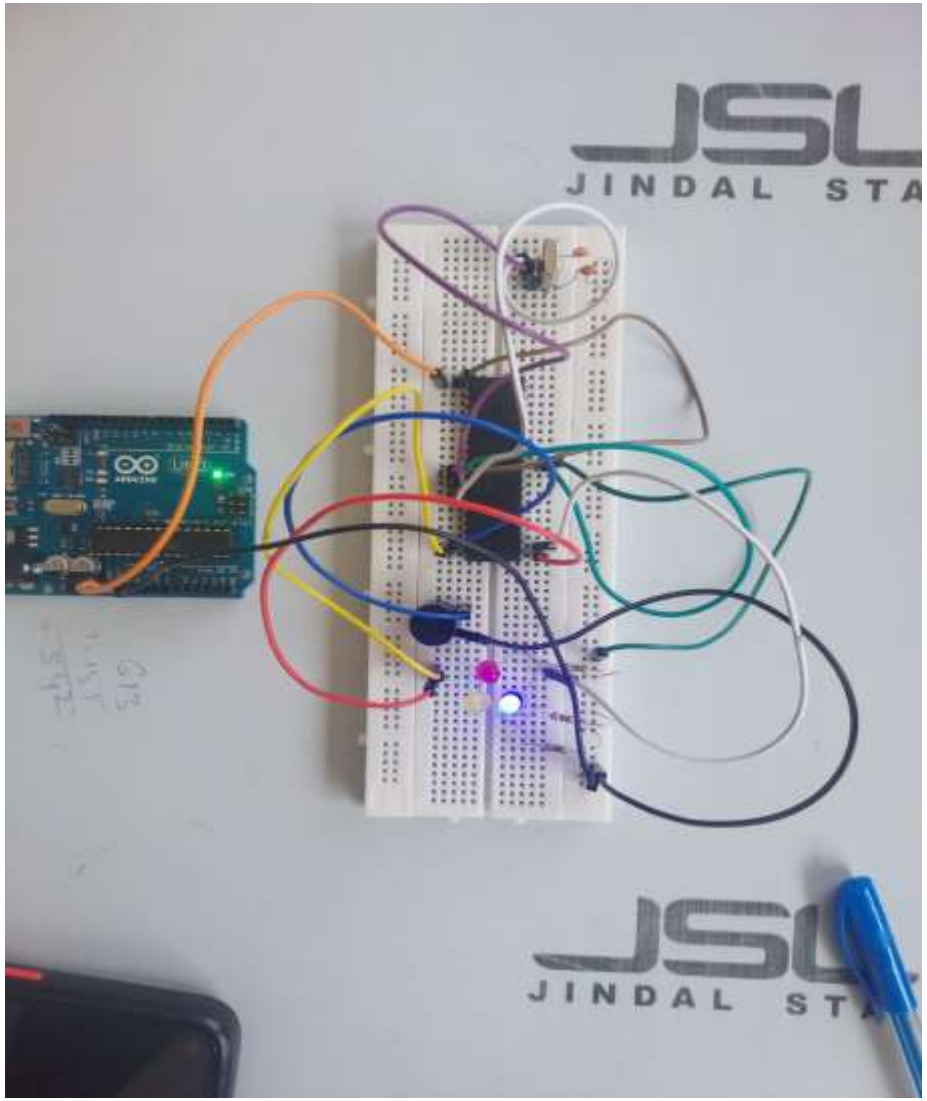
  THEN BUZZER(RD0) GOES LOW AND RED LED (RD1) , YELLOW LED (RD2) AND BLUE LED (RD3) ARE STILL HIGH AND HENCE THEY

  STILL GLOW WHILE BUZZER GOES OFF.

  AFTER THIS NOW THE RED LED (RD1) GOES LOW WHILE YELLOW AND BLUE LED'S WITH PINS (RD2 AND RD3) RESPECTIVELY ARE STILL

  HIGH . THEN SIMILARLY YELLOW LED (RD2) GOES LOW WHEN BLUE LED (RD3) IS STILL HIGH AND HENCE IT GLOWS. AND IN THE LAST

  PHASE OF LOOP INSTRUCTION ALL THE LED'S AND BUZZER SWITCHES OFF AND AGAIN BEGIN WITH THE SAME CYCLE AS MENTIONED ABOVE.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```
LIST  P=PIC18F452
#include PIC18452.INC


ORG   2AH;

CLRF TRISD ;            SET PORTD AS OUTPUT
MOVLW  01H ;            MOVE O1H TO WREG
MOVWF  500H ;           COPY 01H TO 500H LOCATION
MOVLW   04H ;           MOVE 04H TO WREG
MOVWF  400H;            COPY 04H TO 400H LOCATION
OVER
MOVFF    500H,PORTD;    MOVE VALUE OF 500H TO PORTD
CALL DELAY;                 DELAY
CLRF PORTD;                 CLEAR THE PORTD
CALL DELAY;
```

CODE

```
RLNCF      500H;          ROTATE LEFT WITHOUT CARRY THE 500H LOCATION VALUE
CALL DELAY;
```

```
DECF     400H;            DECREMENT THE VALUE IN 400H LOCATION
```

```
BNZ   OVER;               BRANCH TO OVER IF NOT ZERO
AGAIN
MOVLW 04H;          MOVE 04H TO WREG
MOVWF 750H;         COPY WREG TO 750 LOCATION
```

```
MOVLW 0FH;              MOVE LITERAL OFH TO WREG
MOVWF 700H;             COPY WREG TO 700H LOCATION
```

```
MOVWF   PORTD;          COPY WREG TO PORTD
CALL DELAY
CALL DELAY
```

```
KASI
RLNCF 700H;               ROTATE LEFT WITHOUT CARRY IN LOCATION 700H
MOVWF 700H,W;             COPY VALUE IN 700H LOCATION TO WREG
ANDLW 0FH;                APPLY LOGIC AND TO CLEAR 1ST NIBBLE
MOVWF PORTD;              COPY WREG TO PORTD
CALL DELAY
DECF 750H;
CALL DELAY                DECREMENT 750H LOCATION
BNZ KASI                    BRANCH TO KASI IF NOT ZERO
GOTO AGAIN;
```

```
DELAY                    250[{(32*2)+4}50+4] =8.5X10^5
MOVLW    D'250'
MOVWF    8H
B_1
MOVLW  D'50'
MOVWF  10H
B_2
MOVLW   D'32'
MOVWF   12H
B_3
DECF       12H
BNZ        B_3
DECF       10H
BNZ        B_2
DECF       8H
BNZ        B_1
RETURN
END
```

CALCULATION&CONCLUSION

CALCULATION:

Crystal frequency=16MHZ

CLOCK FREQUENCY =16/4 =4MHZ;

TIME TAKEN FOR EACH INSTRUCTION =1/(4MHZ)=0.25us

Time delay=no of instructions*time delay per instruction TIME

Number of instructions = [250x32x50x2]=8,00,000

DELAY = 80,000*(0.25/10,00,000)= 200millisecond.

CONCLUSION

We Performed blinking of LED's in a pattern by PIC18F452 microcontroller and we got familiarized about using of PIC18F452 microcontroller, Proteus, MPLAB.