**Experiment 3 [Square Wave Generator using 8051]**

**AIM:**

Write an assembly language program for **Square Wave Generator using 8051**

**SOFTWARE REQUIRED:**

* Keil software 5
* Proteus 8 software

**KEIL PROCEDURE:**

1. Open the software, Click on project and open new version project.

2. Create a new project file

3. Enter AT89C51

4. Click NO

5. Click [Ctrl +N] and Type the code

6. Open project and click Build target

7. Open Build target and open source file and ADD, CLOSE

8. Click build target

9. Next debug start and stop

10. Open peripherals and select port 2

11. Now run the program in Debug

12. Open project and click optional properties and in that give output as hex file.

13. Create hex file.

**PROTEUS PROCEDURE:**

1. Open proteus by clicking run as administrator.
2. Open new project and enter the file name.
3. Click next, next, next and finish.
4. Click P symbol and search keyword and place the required components

The components required are:

* AT89C51
* Using terminal mode click oscilloscope

1. Connecting pin number 21 to A in oscilloscope
2. Give input to AT89C51 as HEX file.
3. Start the simulation process
4. Now change the position to 200 in the Horizontal
5. Select 2mV in Channel A
6. Drag 180 in Channel D
7. Drag -80 in Channel B
8. Now adjust to 1mV in Channel A
9. Square wave is generated

**PROGRAM:**

**ORG 0000H**

**UP: MOV P2,00H**

**ACALL DELAY**

**MOV P2,#0FFH**

**ACALL DELAY**

**SJMP UP**

**DELAY:MOV R4,#188**

**H1:MOV R3,#255**

**H2:DJNZ R3,H2**

**DJNZ R4,H1**

**RET**

**END**

**RESULT:**

Thus the program has been successfully verified and executed.

OUTPUT:

