**EXPERIMENT 4**

**MP LAB**

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**ROLL NO:19**

**Aim: To add a series of 8-bit numbers using a loop structure**

**Algorithm:**

Step 1: Start

Step 2: Set up a logical data segment by defining identifiers to represent the

data stored in array, count for length of array and the result on adding.

Step 3: Initialize the logical code segment. Initialize DS register with the

the starting address of the logical data segment.

Step 4: Load starting address of array to SI.

Step 5: Move 0000H to AX.

Step 6: Move the content of COUNT to CX.

Step 7: Add contents of SI to AL. If no carry, go to step 9. Else step 8

Step 8: Increment AH.

Step 9: Increment SI to obtain the address of the next element in the array.

Step 10: Decrement CX.

Step 11: If CX is not equal to zero, repeat steps 7-11, else go to step 12.

Step 12: Move the content of AL to a memory location (SUM).

Step 13: Move the content of AH to a memory location (CARRY).

Step 14: Move 4CH to AH register to terminate execution and call the DOS function is called INT 21H.

Step 15: Stop

**Program:**

DATA SEGMENT

ARRAY DB 01H, 02H, 0F2H

COUNT EQU ($-ARRAY)

SUM DB 1 DUP(?)

CARRY DB 1 DUP(?)

DATA ENDS

CODE SEGMENT

ASSUME CS: CODE, DS: DATA

START: MOV AX, DATA

MOV DS, AX

LEA SI, ARRAY

MOV AX, 0000H

MOV CX, COUNT

L1: ADD AL, [SI]

JNC L2

INC AH

L2: INC SI

DEC CX

JNZ L1

MOV SUM, AL

MOV CARRY, AH

MOV AH, 4CH

INT 21H

CODE ENDS

END START

**OUTPUT:**

