1. TITLE Write a Program in DEBUG to add tow 8 bit numbers stored in the memory loacation DS:300 and DS:302 and store the result at DS:304

```
.MODEL SMALL
.DATA
.STACK
.CODE
MAIN PROC FAR
MOV AX, @DATA
MOV DS, AX
;; adding two numbers
MOV AX, 00H
MOV AL, DS:[300H]
ADD AL, DS:[302H]
;; storing the two numbers
MOV DS:[304H], AL
MAIN ENDP
END MAIN
```

2. TITLE and ten 16 bit numbers stored in memory and store the result

```
.MODEL SMALL
.STACK
.DATA
array DW 100H, 200H, 300H, 400H, 500H, 600H, 700H, 800H, 900H, 1000H
sum DW ?
.CODE

MAIN PROC FAR

MOV AX, @DATA
MOV DS, AX

MOV AX, 00H
MOV CX, 10
MOV DI, 0

lo:  ADD AX, array[DI]
INC DI
INC DI
loop lo
```

```
        mov sum, AX

        MOV AX, 4C00H
        INT 21H

        MAIN ENDP

        END MAIN
```

3.
```
        TITLE To store multiplication table
        .MODEL SMALL
        .STACK
        .DATA
        NUM1 db 5
        PRO dw 10 DUP(?)
        .CODE

        MAIN PROC FAR
        MOV AX, @Data
        MOV DS, AX
        MOV CX, 10
        MOV DX, 0
        LEA BX, PRO
lo:     MOV AX, DX
        MUL NUM1
        MOV [BX], AX
        INC BX
        INC BX
        INC DX
        loop lo
        MOV AX, 4C00H
        INT 21H
        MAIN ENDP

        END MAIN
```

4.
```
        TITIE series addition
        .MODEL SMALL
        .STACK
```

```
        .DATA
        sum dw ?
        .CODE
        MAIN PROC FAR
        MOV AX, @DATA
        MOV DS, AX
        MOV CX, 20
        MOV BX, 00
        MOV DL, 2
lo:     MOV AX, DX
        INC DX
        MUL DL
        ADD BX, AX
        INC DL
        loop lo
        MOV sum, BX
        MOV AX, 4C00H
        INT 21H
        MAIN ENDP
        END MAIN
```

5.

```
        TITLE Sum numbers from 0 to 255
        .MODEL SMALL
        .STACK
        .DATA
        .CODE
        MAIN PROC FAR
        MOV AX, @DATA
        MOV DS, AX

        MOV AX, 00H
        MOV CX, 255
l:      ADD AX, CX
        loop l

        MOV AX, 4C00H
        INT 21H
        MAIN ENDP
        END MAIN
```

6. TITLE two tables having ten 16 bit data in each and Wap to add two numbers and store in 3rd

```
.MODEL SMALL
.STACK
.DATA
VALS1 DW 100H, 200H, 300H, 500H, 600H, 700H, 800H, 900H, 1000H
VALS2 DW 100H, 200H, 300H, 500H, 600H, 700H, 800H, 900H, 1000H
VALS3 DW 10 DUP(?)

.CODE
MAIN PROC FAR
MOV AX, @DATA
MOV DS, AX

MOV CX, 10
MOV DI, 0
lo:  MOV AX, VALS1[DI]
ADD AX, VALS2[DI]
MOV VALS3[DI], AX
INC DI
INC DI
loop lo

MOV AX, 4C00H
INT 21H

MAIN ENDP
END MAIN
```

DISCUSSION

In this lab, we learned the basics of assembly language. We learned to install windows xp and dosbox that provide us environment to run 8086 codes. We learned to use dos debug and run programs by assembling and linking. We can now write a asm file and execute the code for 8086 microprocessor.

CONCLUSION

Hence, we learned the basics of running assembly code using dos debug and masm in this introduction lab for 8086 microprocessor.