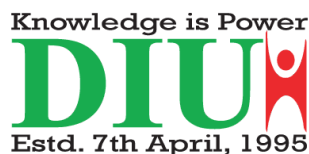# Dhaka International University

Department of Computer Science & Engineering

LAB REPORT

Course Name: Microprocessor, Microcontroller & Assembly Language Lab

Course Code: CSE - 306

Submitted By	Submitted To
Md. Rakibur Rahman Department of CSE Batch: CSE-Day-59 Roll: 30 Reg. No: CS-D-59-19-112273	Md. Nahid Hasan Lecturer, Department of Computer Science & Engineering Dhaka International University

Date of Submission: 23/07/2022

Question: Find summation of consecutive numbers from 1 to N.

Solution: Assembly code and output are given below:
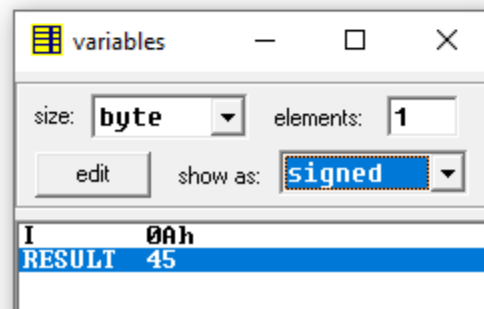
```
.MODEL SMALL

.STACK

.DATA
I DB 1                ;INITIALLY I IS EQUAL TO 1
RESULT DB ?

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

        MOV CX,9    ;LOOP CONTINUE TILL 9
        MOV BX,0

        SUM:
        ADD BH,I
        INC I                ;INCREMENTING I UNTILL LOOP STOP
        LOOP SUM

        MOV RESULT,BH        ;SUMMATION STORE IN RESULT


    MAIN ENDP
END MAIN
```

variables — □ ✕

size: byte ▼   elements: 1

edit   show as: signed ▼

| I | 0Ah |
| RESULT | 45 |

Question: Swapping two values.

Solution: Assembly code and output are given below:

```
.MODEL SMALL
.CODE
MAIN PROC
    MOV  BL,'5'   ;FIRST VALUE 5
    MOV  BH,'9'   ;SECOND VALUE 9

    XCHG BL,BH

    MOV  AH,2
    MOV  DL,BL
    INT  21H

    MOV  AH,2
    MOV  DL,0DH
    INT  21H       ;TO PRINT NEW LINE
    MOV  DL,0AH
    INT  21H

    MOV  AH,2
    MOV  DL,BH
    INT  21H

    MOV  AH,4CH
    INT  21H

MAIN ENDP
```
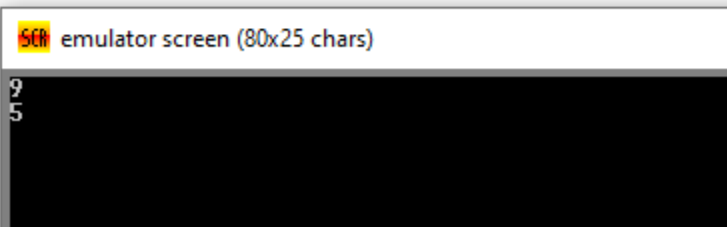
SCR emulator screen (80x25 chars)

```
9
5
```

Question: Find a number even or odd.

Solution: Assembly code and output are given below:

```
.MODEL SMALL
.DATA
    MSG   DB 10,13,"ENTER A NUMBER:$"
    MSG1  DB 10,13, "NUMBER IS EVEN.$"          ;PRINTING MESSAGE
    MSG2  DB 10,13, "NUMBER IS ODD.$"

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

    LEA DX,MSG
    MOV AH,9
    INT 21H

    MOV AH,1        ;TAKE AN INPUT
    INT 21H

    MOV BL,2        ;VALUE ASSIGN IN BL 2
    DIV BL          ; STORE REMINDER
    CMP AH,0        ;COMPARE WITH 0 AND REMINDER

    JE EVEN             ;JUMP TO EVEN IF REMINDER IS 0
        LEA DX,MSG2     ;PRINT OTHERWISE
        MOV AH,9
        INT 21H

    MOV AH,4CH          ;INTERRUPT WHEN ELSE IS TRUE
    INT 21H

    EVEN:               ;EVEN SEGMENT
        LEA DX,MSG1
        MOV AH,9
        INT 21H


MAIN ENDP
```

emulator screen (80x25

```
ENTER A NUMBER:3
NUMBER IS ODD.
```