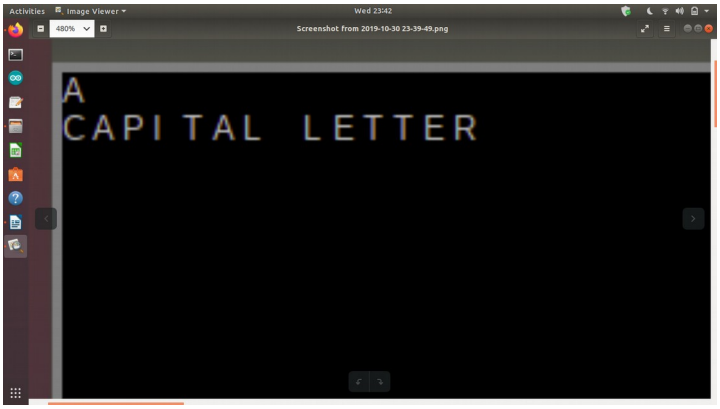
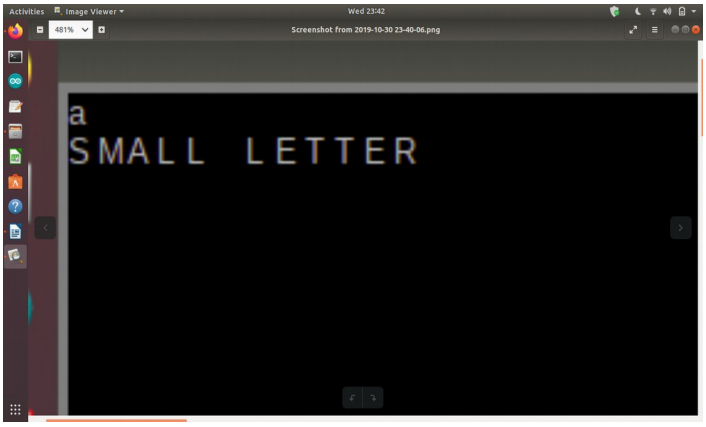
Assembly Language Lab

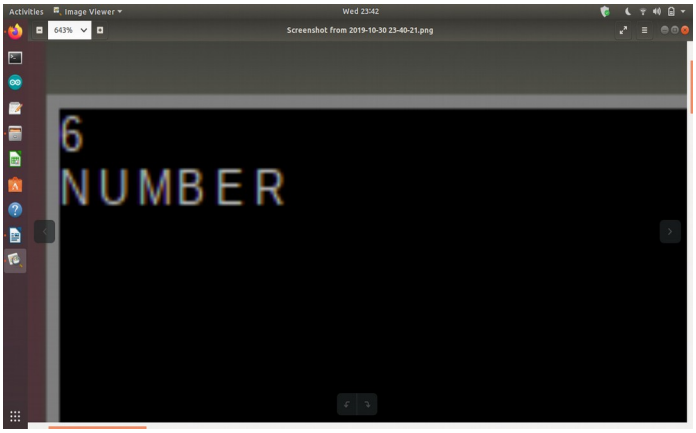
Date: 30.10.19

01. An assembly code to determine whether an input is capital, small or number

```
.MODEL SMALL          ;DATA TYPE IDNTIFY
.STACK

.DATA
N DB 'NUMBER$'
C DB 'CAPITAL LETTER$'
S DB 'SMALL LETTER$'
.CODE
MAIN PROC
    MOV AX,@DATA
    MOV DS,AX

    MOV AH,1
    INT 21H
    MOV BL,AL

    MOV AH,2
    MOV DL,13
    INT 21H
    MOV DL,10
    INT 21H

    CMP BL,48
    JGE L1

    CMP BL,65
    JGE L3

    CMP BL,97
    JGE L5


    L1:
    CMP BL,57
    JG L3
    JLE L2

    L2:
    MOV AH,9
    LEA DX,N
    INT 21H
    JMP EXIT
```





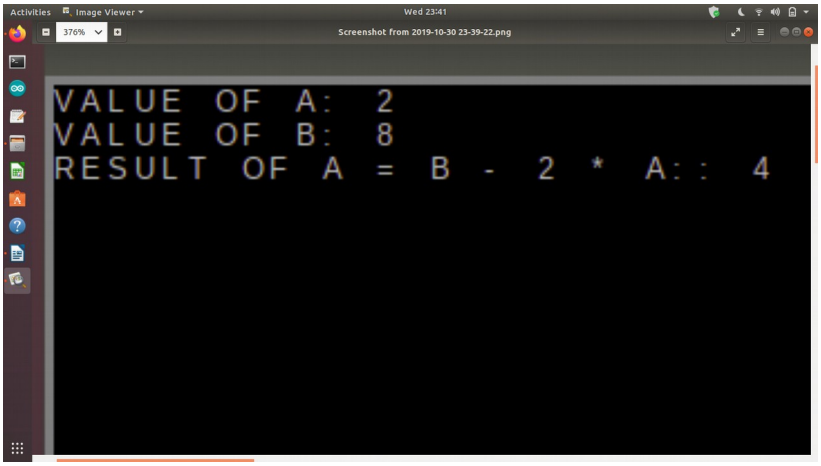


```
    L3:
    CMP BL,90
    JLE L4
    JG L5
    JMP EXIT

    L4:
    MOV AH,9
    LEA DX,C
    INT 21H
    JMP EXIT

    L5:
    CMP BL,122
    JLE L6
    JMP EXIT

    L6:
    MOV AH,9
    LEA DX,S
    INT 21H
    JMP EXIT

    EXIT:
    MOV AH,4CH
    INT 21H
    MAIN ENDP
END MAIN
```

2. An assembly code to solve the equation A = B- 2*A

```
.MODEL SMALL
.STACK 100H
.DATA
R DB 'RESULT OF A = B - 2 * A:: $'
I1 DB 'VALUE OF A: $'
I2 DB 'VALUE OF B: $'
A DB ?
B DB ?

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

    MOV AH,09
    LEA DX,I1
```

```
    INT 21H

    MOV AH,01
    INT 21H    ; INPUT OF A
    MOV BH,AL

    MOV AH,02
    MOV DL,13
    INT 21H   ;NEW LINE
    MOV DL,10
    INT 21H

    MOV AH,09
    LEA DX,I2

    INT 21H

    MOV AH,01
    INT 21H    ; INPUT OF B
    MOV BL,AL

    ADD BH,BH   ; 2*A = A + A
    SUB BH,48

    SUB BL,BH
    ADD BL,48

    MOV AH,02
    MOV DL,13
    INT 21H   ;NEW LINE
    MOV DL,10
    INT 21H

    MOV AH,09
    LEA DX,R
    INT 21H

    MOV AH,02
    MOV DL,BL
    INT 21H

    EXIT:
    MOV AH,4CH
    INT 21H
    MAIN ENDP
END MAIN
```



3. An assembly code to count the number of characters in an input line.

```
INCLUDE 'EMU8086.INC'
.MODEL SMALL
.STACK 100H
.CODE
MAIN  PROC
    MOV BL,48
    L1:
    MOV AH,01
    INT 21H

    INC BL
    CMP AL,13
    JE EXIT
    JMP L1

    EXIT:
    PRINTN "
    SUB BL,49
    ADD BL,48

    MOV AH,2
    MOV DL,BL
    INT 21H
    MAIN ENDP
END MAIN
```