Mawlana Bhashani Science and Technology University

Santosh, Tangail-1902.

Lab Report

Department of Information and Communication Technology

Report No: 01

Report Name: Assembly language Program.

Course Title: Microprocessor and Assembly Language Lab

Course Code: ICT-3106

Submitted By	Submitted To
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Program 1: Write an assembly program to print a character.

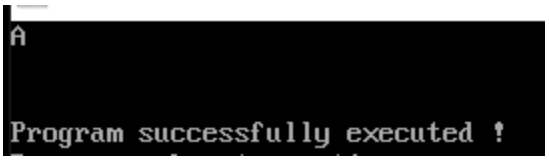
Algorithms:

1. Start the program
2. Move the character in dl register
3. Display the character
4. Stop the program

Source Code:

```
.MODEL SMALL
.STACK 100H
.CODE
MAIN PROC
MOV AH,2
MOV DL,”A”
INT 21H
MOV AH,4CH
INT 21H
MAIN ENDP
End main
```

Ouput:



Program 2: Write an assembly program to print a number.

Algorithms:

1. Start the program
2. Move the number in dl register

3. Display the number

4. Stop the program

Source Code:

```
.MODEL SMALL
.STACK 100H
.CODE
MAIN PROC
MOV AH,2
MOV DL,"1"
INT 21H
MOV AH,4CH
INT 21H
MAIN ENDP
END MAIN
```

Output:

3. Write an assembly program to print several characters with new line.

Algorithms:

1.Start the program.
2.Move the Character in ‘dl’ register.
3.Display the character.
4.Display a new line.
5.Again move a character in ‘dl’ register.
6.Display the character.
7.Stop the program.

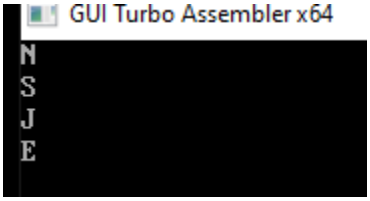
Source Code:

```
.MODEL SMALL
```

```
.STACK 100H
.CODE
  MAIN PROC
  MOV AH,2
  MOV DL,"B"
  INT 21H
  MOV AH, 2
    MOV DL, 10
    INT 21H
    MOV DL,13
    INT 21H

    MOV AH,2
    MOV DL,"A"
    INT 21H
    MOV AH, 2
    MOV DL, 10
    INT 21H
    MOV DL,13
    INT 21H
    MOV AH,2
    MOV DL,"B"
    INT 21H
MOV AH, 2
    MOV DL, 10
    INT 21H
    MOV DL,13
    INT 21H
      MOV AH,2
```

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

Output :



4. Write an assembly program to print several digits with new line.

Algorithms:

1.Start the program.
2.Move the digit in ‘dl’ register.
3.Display the digit.
4.Display a new line.
5.Again move a digit in ‘dl’ register

Source Code:

```
.MODEL SMALL
 .STACK 100H
 .CODE
   MAIN PROC
   MOV AH,2
   MOV DL,"5 "
   INT 21H
MOV AH, 2
```

```
    MOV DL, 10
    INT 21H
    MOV DL,13
    INT 21H
    MOV AH,2
    MOV DL,"6 "
    INT 21H
    MOV AH, 2
    MOV DL, 10
    INT 21H
    MOV DL,13
    INT 21H
    MOV AH,2
    MOV DL,"7"
    INT 21H
     MOV AH, 2
    MOV DL, 10
    INT 21H
    MOV DL,13
    INT 21H
   MOV AH,2
    MOV DL,"8"
    INT 21H
    EXIT:
    MOV AH, 4CH
    INT 21H
MAIN ENDP
END MAIN
```

Output :

5. Write an assembly program to enter character or digit and display it on the screen with new line.

Algorithms:

1.Start the program
2.Enter a character or digit from ‘al’ register.
3. Move the character or digit in ‘bh’ register.
4.Display a new line.
5.Move the character or digit to ‘dl’ register.
6.Display the digit or character.
7.Stop the program.

Source Code:

```
.MODEL SMALL
.STACK 100H
.CODE
 MAIN PROC
   MOV AH, 1
   INT 21H
   MOV BL, AL
   MOV AH, 2
   MOV DL, 10
   INT 21H
   MOV DL,13
   INT 21H
   MOV AH, 2
   MOV DL, BL
```

```
    INT 21H
    MOV AH, 2
    MOV DL, 10
    INT 21H
    MOV DL,13
    INT 21H
    EXIT:
    MOV AH, 4CH
   INT 21H


  MAIN ENDP
 END MAIN
```

Input : Y

Output:

6. Write an assembly program to enter several character or digit and display it on the screen with new line.

Algorithms:

1.Start the program.
2.Enter a character from ‘al’ register.
3.Move the digit or character to ‘bh’ register.
4.Enter another character or digit form ‘al’ register.
5.Move the character or digit to ‘bl’ register.
6.Display a new line.
7.Move the character or digit stored in ‘bh’ register to ‘dl’ register.
8.Display the character or digit.
9.Display a new line.
10. the character or digit stored in ‘bl’ register to ‘dl’ register.

11. Display the character or digit.
12.Stop the program.

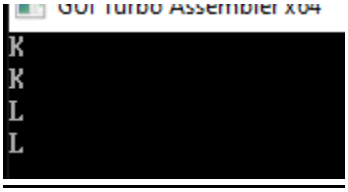
Source Code:

```
.MODEL SMALL
 .STACK 100H
 .CODE
   MAIN PROC
     MOV AH, 1
     INT 21H
     MOV BL, AL
     MOV AH, 2
     MOV DL, 10
     INT 21H
     MOV DL,13
     INT 21H
MOV AH, 2
     MOV DL, BL
     INT 21H
     MOV AH, 2
     MOV DL, 10
     INT 21H
MOV DL,13
     INT 21H
     MOV AH, 1
     INT 21H
     MOV BH, AL
     MOV AH, 2
     MOV DL, 10
```

```
    INT 21H
    MOV DL,13
    INT 21H
    MOV AH, 2
    MOV DL, BH
    INT 21H
EXIT:
    MOV AH, 4CH
    INT 21H
  MAIN ENDP
 END MAIN
```

Input: K , L

Output :



7. Write an assembly program to print a character or digit using variable.

Algorithms:

1.Start the Program.
2.Declare a variable.
3.Initialize the variable.
4.Display the variable.
5.Stop the program

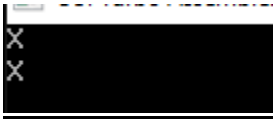
Source code

```
.MODEL SMALL
 .STACK 100H
```

```
.DATA
   VALUE_1   DB  ?
   .CODE
  MAIN PROC
    MOV AX, @DATA
    MOV DS, AX
    MOV AH,1
INT 21H
    MOV VALUE_1,AL

    MOV AH, 2
    MOV DL, 10
    INT 21H
    MOV DL,13
    INT 21H
  MOV AH,2
    MOV DL,VALUE_1
    INT 21H
    EXIT:
    MOV AH, 4CH
    INT 21H
   MAIN ENDP
 END MAIN
```

Input : X

Output :



8. Write an assembly program to print a string.

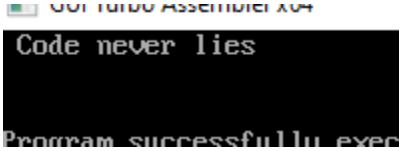
Algorithms:

1. Create a string
2. Load the effective address of the string in dx using LEA command
3. Print the sting by calling the interrupt with 9H in AH
4. The string must be terminated by '$' sign

Source Code:

```
.MODEL SMALL

.STACK 100H

.DATA

 STRING DB ' Code never lies', '$'

.CODE

MAIN PROC FAR

 MOV AX,@DATA

 MOV DS,AX

 LEA DX,STRING

 MOV AH,09H

 INT 21H

 MOV AH,4CH

 INT 21H

MAIN ENDP

END MAIN
```

Output:



9. Write an assembly program to print a string and enter character/digit and display it.

Algorithms:

1.Start the Program.
2.Declare a variable.
3.Initialize the variable.
4.Display the variable.
5.Enter a character or digit.
6.Display it.
7.Stop the Program.

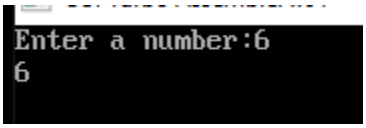
Source Code:

```
.MODEL SMALL
.STACK 100H
.DATA
 STRING DB 'Enter a number:', '$'
.CODE
MAIN PROC FAR
 MOV AX,@DATA
 MOV DS,AX
 LEA DX,STRING
 MOV AH,09H
 INT 21H
 MOV AH, 1
    INT 21H
    MOV BL, AL
    MOV AH, 2
    MOV DL, 10
 INT 21H
MOV DL,13
    INT 21H
MOV AH, 2
```

```
    MOV DL, BL
    INT 21H
 MOV AH,4CH
 INT 21H
MAIN ENDP
END MAIN
```

Input: 6

Ouput :



10. Write an assembly program to read first, middle, and last initials of a person's name, and display them in left margin.

Algorithms:

1.Start the program.
2.Declare three variable.
3.Initialize those three variable.
4.Display three variable.
5.Stop the program.

Source Code:

```
.model small
.stack 100h
.data
first db "Sajidur $"
middle db "Rahman $"
last db "Sajid$"
.code
main proc
    mov ax,@data
```

```
    mov ds,ax


    mov ah,9
    lea dx,first
    int 21h
    lea dx,middle
    int 21h
    lea dx,last
    int 21h
    exit:
    mov ah,4ch
    int 21h
    main endp
end main
```

Output :