**Assembly language**

**Name: Hamza Haroon**

**Roll No. BCS07203008**

**Program 1:**

.model small ; The . MODEL Directive. The memory model directive specifies the size of the memory the program needs

.stack 64 ; STACK directive used for for keeping temporary data.

.data ; s

BYTEA DB 15D ; Here 15D is a Integer Constants and it store 15 Decimal value to Bytea Variable

.code

main proc ; main is a label proc is a mnemonic

mov ax, @data ; This is way of loading starting address of data segment in ax.

mov DS, AX ; Move the ADDRESS store in of AX to DS

mov AL, BYTEA ; move value of byeta to AL Register

; Below is the code to Exit the MAIN Directive

mov ah,4ch

int 21h

main endp

end main

**Fill in the following table for Program 1**

|  |  |
| --- | --- |
| Constants | 15 |
| Variables | Bytea |
| Directive(s) | .DATA  .MODEL  .CODE  ENDP  END |
| Mnemonic | MOV  INT  PROC |

**Program No 2:**

.model small ; The . MODEL Directive. The memory model directive specifies the size of the memory the program needs

.stack 64

.data

BYTEA DB 15D ; Here 15D is a Integer Constants and it store 15 Decimal value to Bytea Variable

BYTEB DB 06D ; Same logic as above comment

.code

main proc ; main is a label proc is a mnemonic

mov ax,@data ; This is way of loading starting address of data segment in ax.

mov DS,AX ; Move the ADDRESS store in of AX to DS

mov al,bytea ; move value of byeta to AL Register

mov ah,byteb ; move value of byetb to AH Register

; Below is the code to Exit the MAIN Directive

mov ah,4ch

int 21h

main endp

end main

**Fill in the following table for Program 2**

|  |  |
| --- | --- |
| Constants | 15  06 |
| Variables | Bytea  Byteb |
| Directive(s) | .DATA  .MODEL  .CODE  ENDP  END |
| Mnemonic | MOV  INT  PROC |

**Program No. 3**

.model small ; The . MODEL Directive. The memory model directive specifies the size of the memory the program needs

.stack 64

.data

worda dw 12d ; Here 12D is a Integer Constants and it store 12 Decimal value to worda Variable

wordb dw 13d ; Same logic as above comment

.code

main proc ; main is a label proc is a mnemonic

mov ax,@data ; This is way of loading starting address of data segment in ax.

mov DS,AX ; Move the ADDRESS store in of AX to DS

mov ax,worda ; move value of worda to Ax Register

mov bx,wordb ; move value of wordb to Bx Register

; Below is the code to Exit the MAIN Directive

mov ah,4ch

int 21h

main endp

end main

**Fill in the following table for Program 3**

|  |  |
| --- | --- |
| Constants | 12  13 |
| Variables | worda  wordb |
| Directive(s) | .DATA  .MODEL  .CODE  ENDP  END |
| Mnemonic | MOV  INT  PROC |

**Program No. 4**

.model small ; The . MODEL Directive. The memory model directive specifies the size of the memory the program needs

.stack 64

.data

worda dw 120d ; Here 120D is a Integer Constants and it store 120 Decimal value to worda Variable

wordb dw 121d ; Same logic as above comment

.code

main proc ; main is a label proc is a mnemonic

mov ax,@data ; This is way of loading starting address of data segment in ax.

mov DS,AX ; Move the ADDRESS store in of AX to DS

mov ax,worda ; move value of worda to Ax Register

mov bx,wordb ; move value of wordb to Bx Register

; Below is the code to Exit the MAIN Directive

mov ah,4ch

int 21h

main endp

end main

**Fill in the following table for Program 4**

|  |  |
| --- | --- |
| Constants | 120  121 |
| Variables | worda  wordb |
| Directive(s) | .DATA  .MODEL  .CODE  ENDP  END |
| Mnemonic | MOV  INT  PROC |