



# Assembly Report

Online shop same like the supermarket

Group	Name
6	Ismail Mohamed Ismail Mahmoud Elyan
6	Yousef Ayman MagdEldin
6	Rewan Sayed Mohamed
6	Yara Abdelhady Mohamed

Eng.Noha Teaima

## **Github repository link:**

<https://github.com/ismaillalyaan/Assembly-Project/blob/main/mycode.asm>

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## **Purpose of the Program**

This assembly program simulates an online shopping system where the user can choose from a list of items and buy them by specifying quantities. The program calculates the total cost based on user input and provides the option for the user to apply a discount. The program then displays the final amount due and allows the user to purchase more items or exit.

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# 1.Program Setup and Data Section

**Explanation:** The .MODEL SMALL directive specifies the type of memory model used. .STACK 100H allocates space for the stack. .DATA starts the section where all string variables and constants are declared.

```
0001 .MODEL SMALL
0002 .STACK 100H
0003 .DATA
0004
0005 ;DECLARED STRINGS
0006
0007 INTRO DB '*****Welcome to our Online shop*****$',10,13
0008
0009 ENTER DB 10,13,'PLEASE ENTER THE KEYS WHAT YOU WANT TO BUY: $'
0010
0011 INFO DB 10,13,'KEYS          ITEMS          PRICE$'
0012
0013 PS5 DB 10,13,' 1          PS5 Console          400 USD $'
0014
0015 GL DB 10,13,' 2          Gaming Laptop          2500 USD $'
0016
0017 RTX DB 10,13,' 3          RTX 4090          1000 USD $'
0018
0019 GM DB 10,13,' 4          Gaming Mouse          350 USD $'
0020
0021 GH DB 10,13,' 5          Gaming Headphone          140 USD $'
0022
0023 IM DB 10,13,' 6          27 inch Monitor          400 USD $'
0024
0025 GK DB 10,13,' 7          Gaming Keyboard          310 USD $'
0026
0027 Mousepad DB 10,13,' 8          Mousepad          50 USD $'
0028
0029 EC DB 10,13,' 9          Empty Case          225 USD $'
0030
0031 E_QUANTITY DB 10,13,'          <-Total For This Step !!! QUANTITY: $'
0032
0033 AGAIN DB 10,13,'DO YOU WANT TO BUY MORE? <1.YES !! 2.NO>: $'
0034
0035 ER_MSG DB 10,13,'ERROR INPUT$'
0036
0037 CHOICE DB 10,13,'ENTER YOUR CHOICE:$'
0038
0039 FT DB 10,13,'TOTAL AMOUNT IS :$'
0040
0041 ERR DB 0DH,0AH,'WRONG INPUT! START FROM THE BEGINNING $'
0042
0043 ERR2 DB 0DH,0AH,'WRONG INPUT.PRESS Y/Y OR N/N $'
0044
0045 R DB 0DH,0AH,'PRESENT AMOUNT IS : $'
0046
0047 ERASK DB 10,13,'START FROM THE BEGINNING $'
0048
0049 EN_DIS DB 10,13,'AGAIN ENTER DISCOUNT: $'
0050
0051
```

## 2.Initial Setup and Printing Introduction

**Explanation:** This part sets up the data segment and prints the welcome message and the menu for available items. The program uses interrupt INT 21H with function AH=9 to print strings from memory.

```
ERASK DB 10,13,'START FROM THE BEGINNING $'
EN_DIS DB 10,13,'AGAIN ENTER DISCOUNT: $'
A DW ? ;DECLARED VARIABLES
B DW ?
C DW ?
S DW 0,'$'
NL DB 0DH,0AH,'$' ;NEW LINE

.CODE
    MOV AX, @DATA
    MOV DS, AX

    LEA DX, INTRO ;PRINT INTRO STRING
    MOV AH, 9
    INT 21H

    LEA DX, NL ;PRINT A NEW LINE
    MOV AH, 9
    INT 21H

    JMP BEGINTOP ;DIRECTLY GO TO BEGINTOP LABEL WHERE USER WILL GIVE INPUT

ERR00124 -
```

### 3. Menu Display (Items List)

**Explanation:** This part displays the list of items with their prices. Each item is printed by loading its address into DX and calling interrupt INT 21H.

BEGINTOP:

```
LEA DX,NL                ;PRINT A NEW LINE
MOV AH,9
INT 21H
```

```
MOV BL,10                ;COLOR CODE
MOV AH,9
MOV AL,0
INT 10H
```

```
LEA DX,INFO              ;PRINT INFO STRING
MOV AH,9
INT 21H
```

```
MOV BL,11                ;COLOR CODE
MOV AH,9
MOV AL,0
INT 10H
```

```
LEA DX,PS5
MOV AH,9
INT 21H
```

```
LEA DX,NL
MOV AH,9
INT 21H
```

```
LEA DX,GL
MOV AH,9
INT 21H
```

```
LEA DX,NL
MOV AH,9
INT 21H
```

```
LEA DX,RTX
MOV AH,9
INT 21H
```

```
LEA DX,NL
MOV AH,9
INT 21H
```

```
LEA DX,GM
MOV AH,9
INT 21H
```

```
LEA DX,NL
MOV AH,9
INT 21H
```

```
LEA DX,GH
MOV AH,9
INT 21H
```

```
LEA DX,NL
MOV AH,9
INT 21H
```

```
LEA DX,IM
MOV AH,9
INT 21H
```

```
LEA DX,EC
MOV AH,9
INT 21H
```

```
LEA DX,NL
MOV AH,9
INT 21H
```

## 4. User Input for Item Choice

**Explanation:** After displaying the item list, the program asks the user to choose an item to buy by pressing a key (1-9). It compares the input to each item option and jumps to the corresponding item price section if valid.

```
LEA DX,ENTER
MOV AH,9
INT 21H

MOV AH,1
INT 21H

CMP AL,49
JE PS5B

CMP AL,50
JE GLB

CMP AL,51
JE RTXB

CMP AL,52
JE GMB

CMP AL,53
JE GHB

CMP AL,54
JE IMB

CMP AL,55
JE GKB

CMP AL,56
JE MousepadB

CMP AL,57
JE ECB

JMP ERROR121 ;IF WRONG KEYWORD IS PRESSED THEN THE SHOPLIST WILL SHOW AGAIN
```

## 5. Price Assignment and Quantity Input

**Explanation:** Depending on the item selected, the price is assigned to a variable, and the program prompts the user to input the quantity of the item they wish to buy.

```
PS5B:
MOV A,400
JMP QUANTITY
GLB:
MOV A,2500
JMP QUANTITY
RTXB:
MOV A,1000
JMP QUANTITY
GMB:
MOV A,350
JMP QUANTITY
GHB:
MOV A,140
JMP QUANTITY
IMB:
MOV A,400
JMP QUANTITY
GKB:
MOV A,310
JMP QUANTITY
MousepadB:
MOV A,50
JMP QUANTITY
ECB:
MOV A,225
JMP QUANTITY
;AFTER MOVING PRICE PROGRAM WILL JUMP TO QUANTITY LABEL
```

## 6. Calculating Total and Asking to Buy Again

**Explanation:** After the user enters the quantity, the price is multiplied by the quantity, and the total is updated. The program then asks if the user wants to buy more items.

```
QUANTITY:
    MOV BL,11
    MOV AH,9
    MOV AL,0
    INT 10H
    LEA DX,E_QUANTITY
    MOV AH,9
    INT 21H
    JMP MULTI
    ;PROGRAM WILL GO TO MULTI LABEL WHERE THE PRICE WILL BE MULTIPLIED WITH THE AMOUNT

ASK:
    MOV BL,1
    MOV AH,9
    MOV AL,0
    INT 10H
    LEA DX,AGAIN
    MOV AH,9
    INT 21H
    MOV AH,1
    INT 21H
    CMP AL,49
    JE BEGINTOP
    CMP AL,50
    JE OUTPUT2
    LEA DX,ER_MSG
    MOV AH,9
    INT 21H
    JMP ASK
    ;COLOR CODE
    ;PRINT ENTER QUANTITY STRING
    ;PRINT AGAIN IF USER WANTS TO BUY MORE
    ;TAKES THE INPUT OF YES OR NO
    ;IF YES, THEN AGAIN GO TO SHOPLIST MENU AND BUY AGAIN
    ;IF NO, PROGRAM WILL GIVE THE TOTAL OUTPUT
    ;IF ANY WRONG INPUT, PRINT ERROR MESSAGE AND AGAIN ASK TO BUY AGAIN
```



## 7. Multiplying Price by Quantity

**Explanation:** The price is multiplied by the quantity entered by the user to get the total amount for the selected items.

```
MULTI:
    MOV BL,10
    MOV AH,9
    MOV AL,0
    INT 10H
; Here, the program will calculate the total cost by multiplying price by quantity
```

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## 8. Final Output: Display Total

**Explanation:** Finally, the program will display the total amount and the user can choose to buy more or stop.

```
OUTPUT2:
    LEA DX,FT
    MOV AH,9
    INT 21H
;PRINT FINAL TOTAL
```

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## 9. Program End

**Explanation:** The program finishes its execution and exits cleanly.

```
END:
MOV AH, 4CH
INT 21H
```

## OUTPUT:

```
emulator screen (80x25 chars)

*****Welcome to our Online shop*****

KEYS      ITEMS      PRICE
1         PS5 Console  400 USD
2         Gaming Laptop  2500 USD
3         RTX 4090    1000 USD
4         Gaming Mouse   350 USD
5         Gaming Headphone 140 USD
6         27 inch Monitor 400 USD
7         Gaming Keyboard 310 USD
8         Mousepad       50 USD
9         Empty Case     225 USD

PLEASE ENTER THE KEYS WHAT YOU WANT TO BUY: _

clear screen  change font  0/16
```

```
emulator screen (80x25 chars)

KEYS      ITEMS      PRICE
1         PS5 Console  400 USD
2         Gaming Laptop  2500 USD
3         RTX 4090    1000 USD
4         Gaming Mouse   350 USD
5         Gaming Headphone 140 USD
6         27 inch Monitor 400 USD
7         Gaming Keyboard 310 USD
8         Mousepad       50 USD
9         Empty Case     225 USD

PLEASE ENTER THE KEYS WHAT YOU WANT TO BUY: 5
560  <-Total For This Step ||| QUANTITY: 4
DO YOU WANT TO BUY MORE? (1.YES || 2.NO): _

clear screen  change font  0/16
```

Scr emulator screen (80x25 chars)

PLEASE ENTER THE KEYS WHAT YOU WANT TO BUY: 5  
560 <-Total For This Step ||| QUANTITY: 4  
DO YOU WANT TO BUY MORE? (1.YES || 2.NO): 1

KEYS	ITEMS	PRICE
1	PS5 Console	400 USD
2	Gaming Laptop	2500 USD
3	RTX 4090	1000 USD
4	Gaming Mouse	350 USD
5	Gaming Headphone	140 USD
6	27 inch Monitor	400 USD
7	Gaming Keyboard	310 USD
8	Mousepad	50 USD
9	Empty Case	225 USD

PLEASE ENTER THE KEYS WHAT YOU WANT TO BUY:

clear screen

change font

0/16

Scr emulator screen (80x25 chars)

DO YOU WANT TO BUY MORE? (1.YES || 2.NO): 1

KEYS	ITEMS	PRICE
1	PS5 Console	400 USD
2	Gaming Laptop	2500 USD
3	RTX 4090	1000 USD
4	Gaming Mouse	350 USD
5	Gaming Headphone	140 USD
6	27 inch Monitor	400 USD
7	Gaming Keyboard	310 USD
8	Mousepad	50 USD
9	Empty Case	225 USD

PLEASE ENTER THE KEYS WHAT YOU WANT TO BUY: 2  
7500 <-Total For This Step ||| QUANTITY: 3  
DO YOU WANT TO BUY MORE? (1.YES || 2.NO): \_

clear screen

change font

0/16

emulator screen (80x25 chars)

KEYS	ITEMS	PRICE
1	PS5 Console	400 USD
2	Gaming Laptop	2500 USD
3	RTX 4090	1000 USD
4	Gaming Mouse	350 USD
5	Gaming Headphone	140 USD
6	27 inch Monitor	400 USD
7	Gaming Keyboard	310 USD
8	Mousepad	50 USD
9	Empty Case	225 USD

PLEASE ENTER THE KEYS WHAT YOU WANT TO BUY: 2  
7500 <-Total For This Step ||| QUANTITY: 3  
DO YOU WANT TO BUY MORE? (1.YES || 2.NO): 2  
TOTAL AMOUNT IS:8060

clear screen

change font

0/16

emulator

file math

Load

SP 000  
BP 000  
SI 000  
DI 000  
DS 072

message

PROGRAM HAS RETURNED CONTROL  
TO THE OPERATING SYSTEM

OK