SALIM HABIB UNIVERSITY

(FORMERLY BARRETT HODGSON UNIVERSITY)

SEMESTER-CS-4A FINAL PROJECT

PROPOSAL

BOOK SHOP SYSTEM

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GROUP MEMBERS

DILSHAD ALI	ID #	F22CSC030
FAISAL ALI	ID #	F22CSC023
HASSAN	ID #	S22CSC003
DEPARTMENT	#	COMPUTER SCIENCE

1. Introduction

This project involves creating a simple book shop System using Assembly Language. The shop allows users to view available book categories, select books, specify the quantity, and calculate the total cost of their purchase. This project helps in understanding the basics of Assembly Language programming and the interaction with low-level hardware.

2. Objectives

The main objectives of this project are:

To develop a simple interactive book shop system using Assembly Language.

To gain proficiency in handling user inputs and displaying outputs.

To perform arithmetic operations for cost calculation efficiently.

To allow users to see the list of books without asking the book manually.

To demonstrate the practical applications of Assembly Language in creating functional software.

3. Project Goals

User Interface: Develop a text-based user interface for interaction.

Category Display: Provide a list of book categories (Fiction, Non-Fiction, Science-Fiction).

Book Selection: Allow users to select books from each category.

Quantity Input: Enable users to specify the quantity of selected books.

Cost Calculation: Calculate and display the total cost based on user input.

4. Project Features

Welcome Message: Displays a welcome message when the program starts.

Category Selection: Allows users to select a book category.

Book Listing: Displays a list of books within the chosen category.

Input Validation: Ensures that user inputs are within the valid range.

Total Cost Calculation: Calculates the total cost based on selected books and quantity.

Continue or Exit: Gives the option to see the book list again or exit the program.

5. Future Enhancements

More Categories: Add more book categories and expand the book list.

Cart Functionality: Allow users to add multiple books to a cart before checkout.

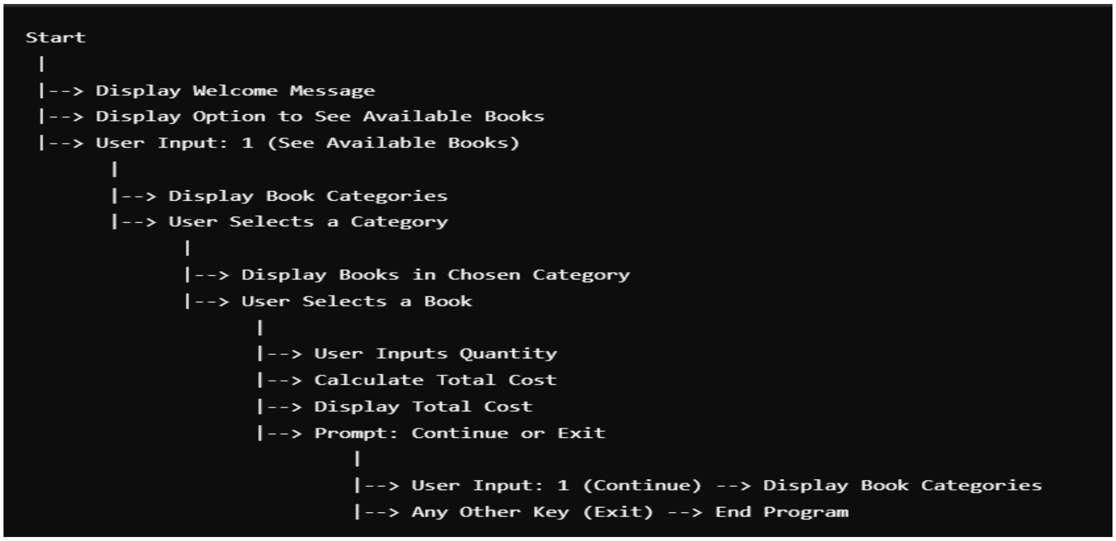
Enhanced UI: Improve the user interface for a better experience.

Discounts and Offers: Implement discounts and special offers for bulk purchases.

Persistent Storage: Store user data and purchase history using file handling.

6. Flowchart

The flowchart below illustrates the logical flow of the project:



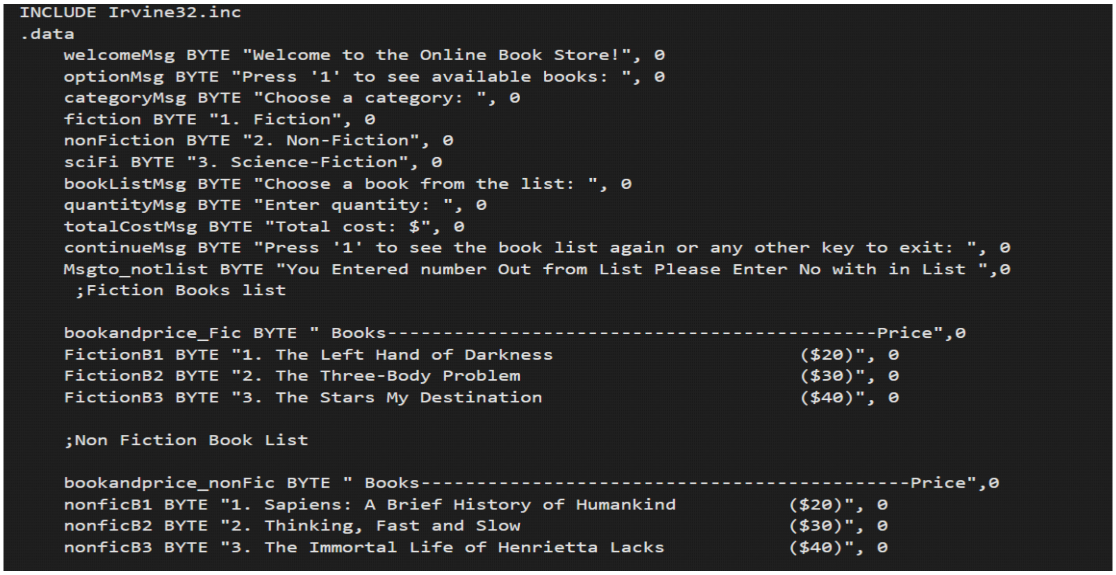
```
Start
 |
 |--> Display Welcome Message
 |--> Display Option to See Available Books
 |--> User Input: 1 (See Available Books)
       |
       |--> Display Book Categories
       |--> User Selects a Category
             |
             |--> Display Books in Chosen Category
             |--> User Selects a Book
                   |
                   |--> User Inputs Quantity
                   |--> Calculate Total Cost
                   |--> Display Total Cost
                   |--> Prompt: Continue or Exit
                           |
                           |--> User Input: 1 (Continue) --> Display Book Categories
                           |--> Any Other Key (Exit) --> End Program
```

8. Conclusion

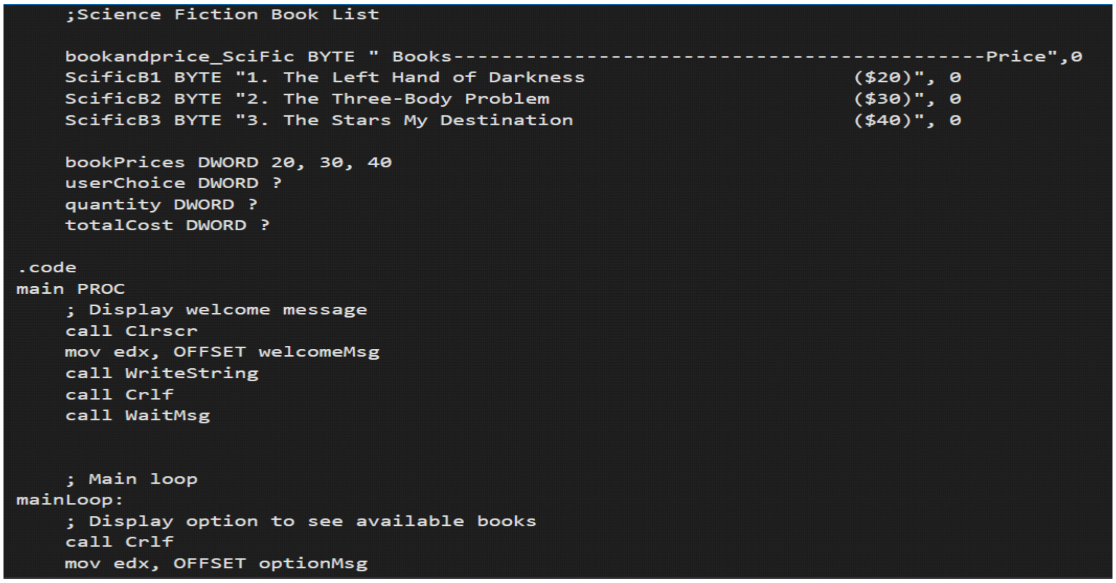
The project successfully demonstrates a simple book shop system using Assembly Language. It reinforces the understanding of basic Assembly instructions, user input handling, and arithmetic operations. This project serves as a practical application of Assembly Language in creating a functional project.

Appendices

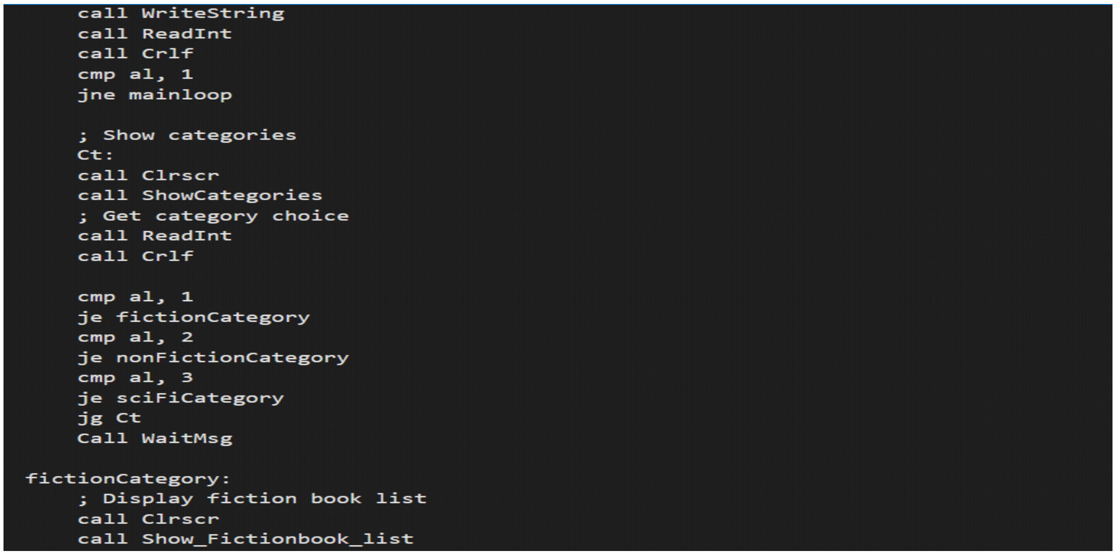
Source Code



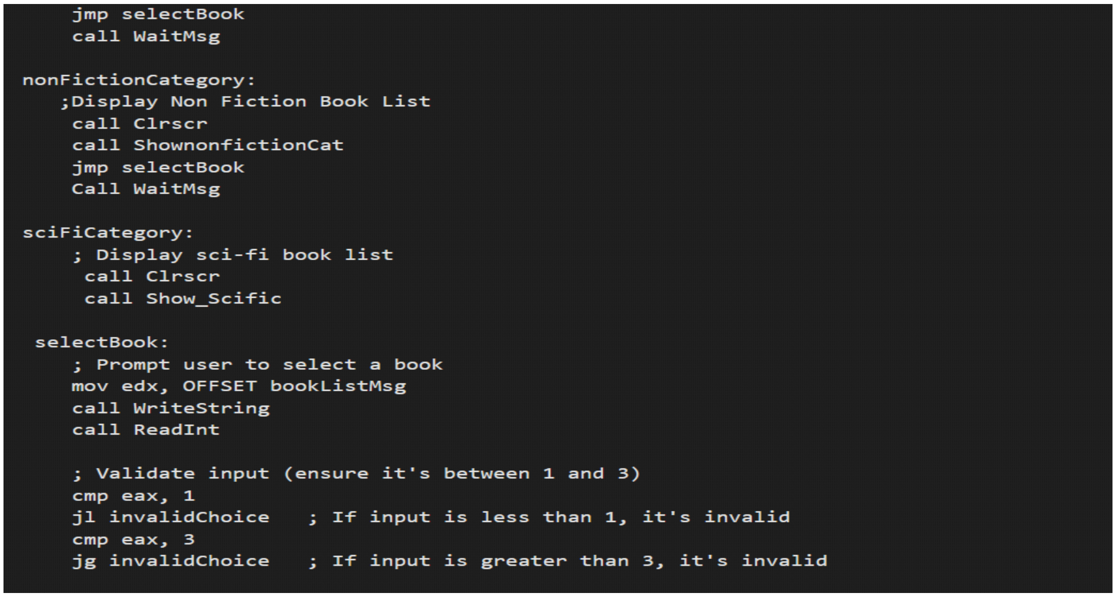
```
INCLUDE Irvine32.inc
.data
    welcomeMsg BYTE "Welcome to the Online Book Store!", 0
    optionMsg BYTE "Press '1' to see available books: ", 0
    categoryMsg BYTE "Choose a category: ", 0
    fiction BYTE "1. Fiction", 0
    nonFiction BYTE "2. Non-Fiction", 0
    sciFi BYTE "3. Science-Fiction", 0
    bookListMsg BYTE "Choose a book from the list: ", 0
    quantityMsg BYTE "Enter quantity: ", 0
    totalCostMsg BYTE "Total cost: $", 0
    continueMsg BYTE "Press '1' to see the book list again or any other key to exit: ", 0
    Msgto_notlist BYTE "You Entered number Out from List Please Enter No with in List ",0
     ;Fiction Books list

    bookandprice_Fic BYTE " Books--------------------------------------------Price",0
    FictionB1 BYTE "1. The Left Hand of Darkness                      ($20)", 0
    FictionB2 BYTE "2. The Three-Body Problem                         ($30)", 0
    FictionB3 BYTE "3. The Stars My Destination                       ($40)", 0

    ;Non Fiction Book List

    bookandprice_nonFic BYTE " Books--------------------------------------------Price",0
    nonficB1 BYTE "1. Sapiens: A Brief History of Humankind         ($20)", 0
    nonficB2 BYTE "2. Thinking, Fast and Slow                       ($30)", 0
    nonficB3 BYTE "3. The Immortal Life of Henrietta Lacks          ($40)", 0
```



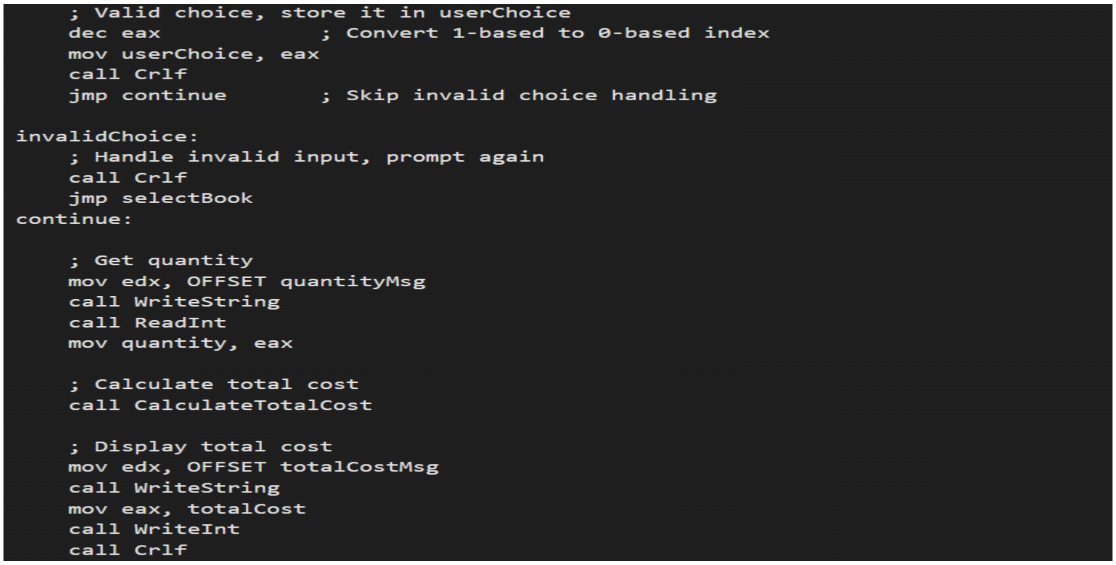
```
    ;Science Fiction Book List

    bookandprice_SciFic BYTE " Books--------------------------------------------Price",0
    ScificB1 BYTE "1. The Left Hand of Darkness                       ($20)", 0
    ScificB2 BYTE "2. The Three-Body Problem                          ($30)", 0
    ScificB3 BYTE "3. The Stars My Destination                        ($40)", 0

    bookPrices DWORD 20, 30, 40
    userChoice DWORD ?
    quantity DWORD ?
    totalCost DWORD ?

.code
main PROC
    ; Display welcome message
    call Clrscr
    mov edx, OFFSET welcomeMsg
    call WriteString
    call Crlf
    call WaitMsg


    ; Main loop
mainLoop:
    ; Display option to see available books
    call Crlf
    mov edx, OFFSET optionMsg
```



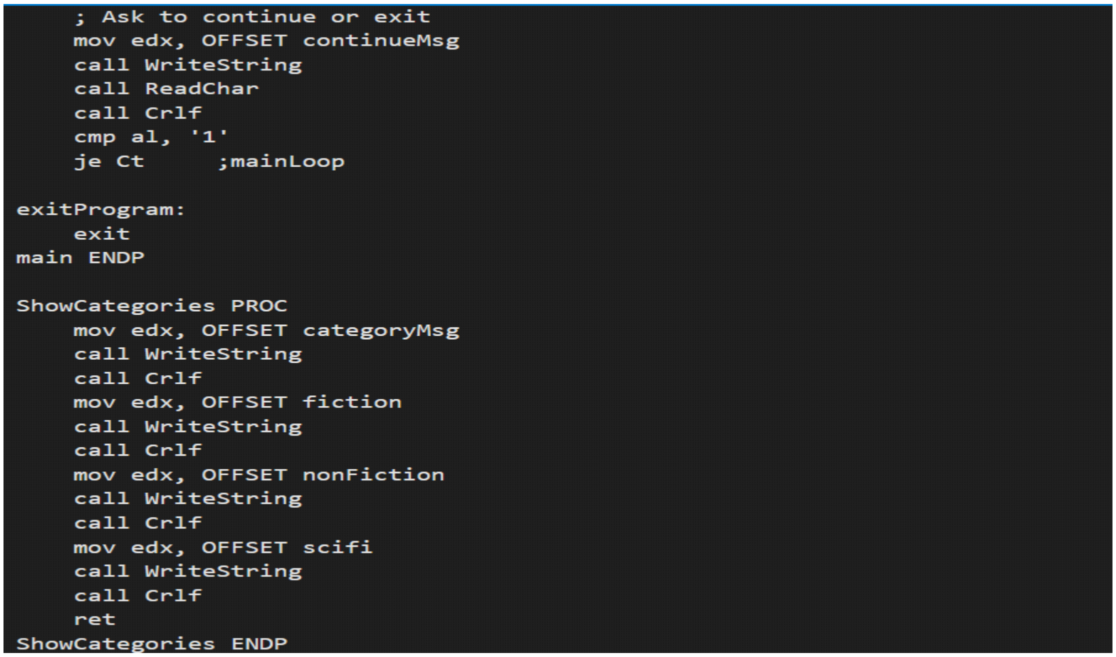
```
     call WriteString
     call ReadInt
     call Crlf
     cmp al, 1
     jne mainloop

     ; Show categories
     Ct:
     call Clrscr
     call ShowCategories
     ; Get category choice
     call ReadInt
     call Crlf

     cmp al, 1
     je fictionCategory
     cmp al, 2
     je nonFictionCategory
     cmp al, 3
     je sciFiCategory
     jg Ct
     Call WaitMsg

 fictionCategory:
     ; Display fiction book list
     call Clrscr
     call Show_Fictionbook_list
```



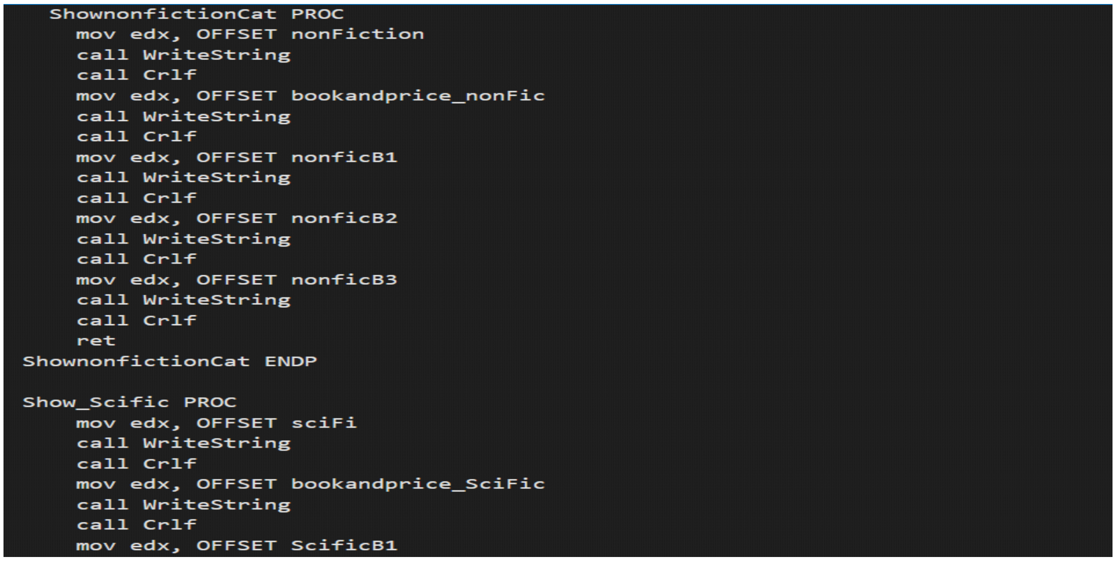
```
     jmp selectBook
     call WaitMsg

 nonFictionCategory:
    ;Display Non Fiction Book List
     call Clrscr
     call ShownonfictionCat
     jmp selectBook
     Call WaitMsg

 sciFiCategory:
     ; Display sci-fi book list
      call Clrscr
      call Show_Scific

  selectBook:
     ; Prompt user to select a book
     mov edx, OFFSET bookListMsg
     call WriteString
     call ReadInt

     ; Validate input (ensure it's between 1 and 3)
     cmp eax, 1
     jl invalidChoice   ; If input is less than 1, it's invalid
     cmp eax, 3
     jg invalidChoice   ; If input is greater than 3, it's invalid
```



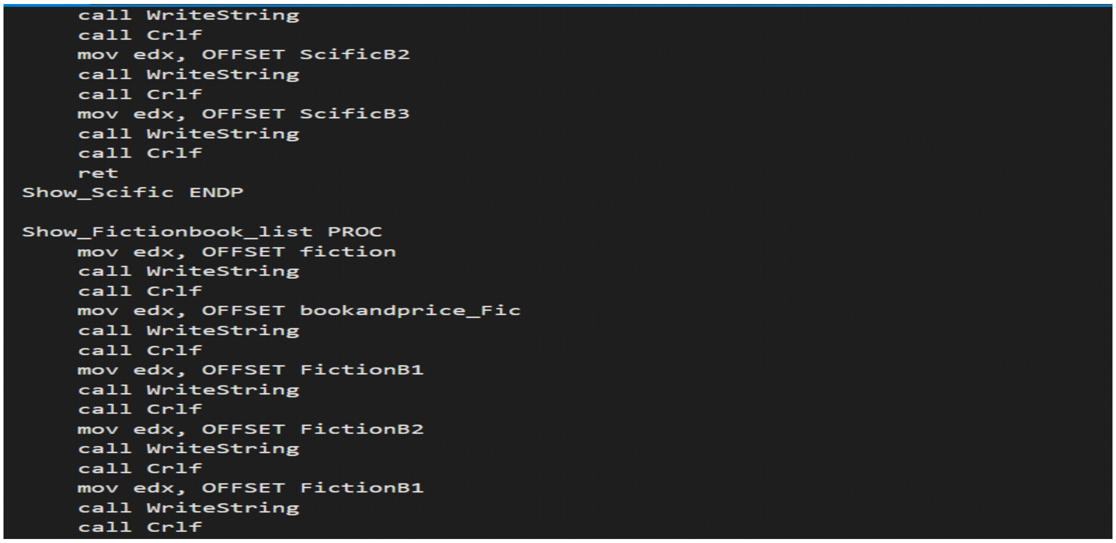
```
    ; Valid choice, store it in userChoice
    dec eax            ; Convert 1-based to 0-based index
    mov userChoice, eax
    call Crlf
    jmp continue       ; Skip invalid choice handling

invalidChoice:
    ; Handle invalid input, prompt again
    call Crlf
    jmp selectBook
continue:

    ; Get quantity
    mov edx, OFFSET quantityMsg
    call WriteString
    call ReadInt
    mov quantity, eax

    ; Calculate total cost
    call CalculateTotalCost

    ; Display total cost
    mov edx, OFFSET totalCostMsg
    call WriteString
    mov eax, totalCost
    call WriteInt
    call Crlf
```



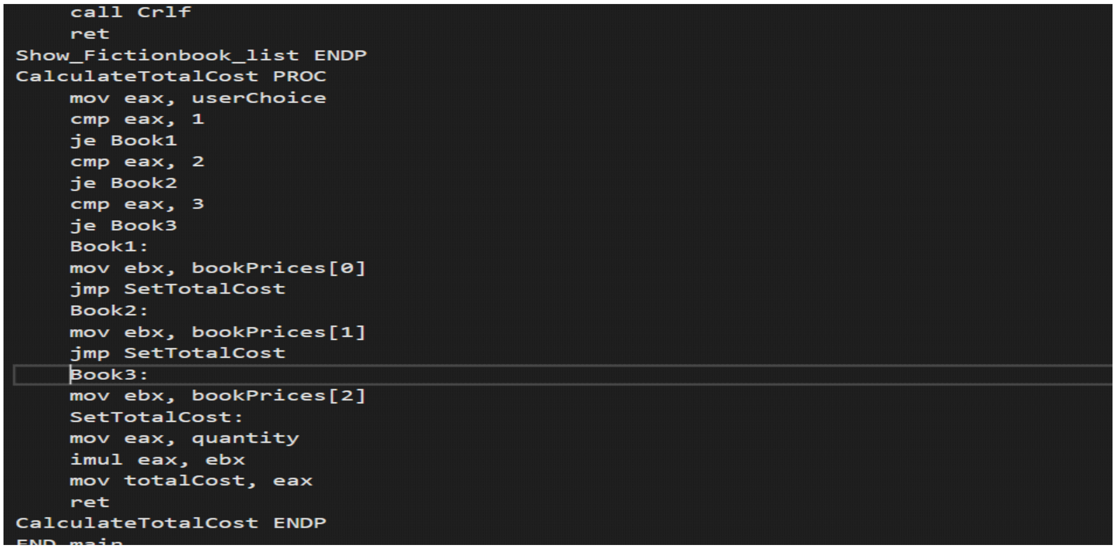
```
    ; Ask to continue or exit
    mov edx, OFFSET continueMsg
    call WriteString
    call ReadChar
    call Crlf
    cmp al, '1'
    je Ct     ;mainLoop

exitProgram:
    exit
main ENDP

ShowCategories PROC
    mov edx, OFFSET categoryMsg
    call WriteString
    call Crlf
    mov edx, OFFSET fiction
    call WriteString
    call Crlf
    mov edx, OFFSET nonFiction
    call WriteString
    call Crlf
    mov edx, OFFSET scifi
    call WriteString
    call Crlf
    ret
ShowCategories ENDP
```



```
   ShownonfictionCat PROC
    mov edx, OFFSET nonFiction
    call WriteString
    call Crlf
    mov edx, OFFSET bookandprice_nonFic
    call WriteString
    call Crlf
    mov edx, OFFSET nonficB1
    call WriteString
    call Crlf
    mov edx, OFFSET nonficB2
    call WriteString
    call Crlf
    mov edx, OFFSET nonficB3
    call WriteString
    call Crlf
    ret
ShownonfictionCat ENDP

Show_Scific PROC
    mov edx, OFFSET sciFi
    call WriteString
    call Crlf
    mov edx, OFFSET bookandprice_SciFic
    call WriteString
    call Crlf
    mov edx, OFFSET ScificB1
```



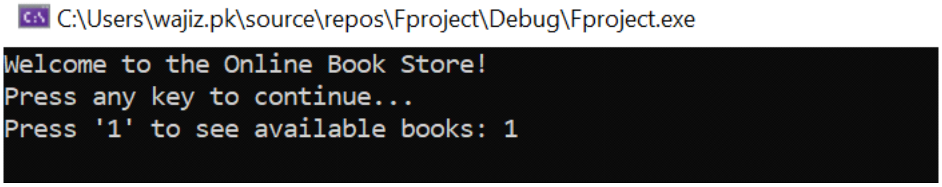
```
    call WriteString
    call Crlf
    mov edx, OFFSET ScificB2
    call WriteString
    call Crlf
    mov edx, OFFSET ScificB3
    call WriteString
    call Crlf
    ret
Show_Scific ENDP

Show_Fictionbook_list PROC
    mov edx, OFFSET fiction
    call WriteString
    call Crlf
    mov edx, OFFSET bookandprice_Fic
    call WriteString
    call Crlf
    mov edx, OFFSET FictionB1
    call WriteString
    call Crlf
    mov edx, OFFSET FictionB2
    call WriteString
    call Crlf
    mov edx, OFFSET FictionB1
    call WriteString
    call Crlf
```



```
    call Crlf
    ret
Show_Fictionbook_list ENDP
CalculateTotalCost PROC
    mov eax, userChoice
    cmp eax, 1
    je Book1
    cmp eax, 2
    je Book2
    cmp eax, 3
    je Book3
    Book1:
    mov ebx, bookPrices[0]
    jmp SetTotalCost
    Book2:
    mov ebx, bookPrices[1]
    jmp SetTotalCost
    Book3:
    mov ebx, bookPrices[2]
    SetTotalCost:
    mov eax, quantity
    imul eax, ebx
    mov totalCost, eax
    ret
CalculateTotalCost ENDP
END main
```

Output

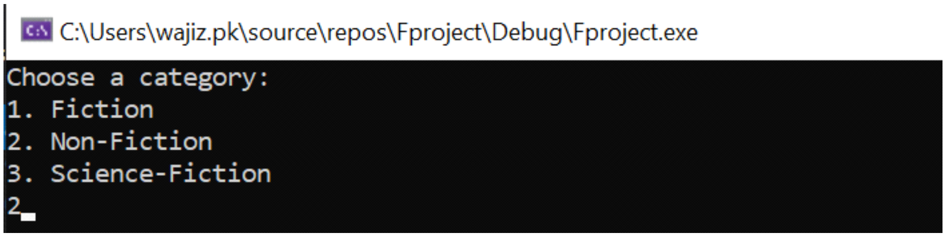
Welcome Message:



C:\Users\wajiz.pk\source\repos\Fproject\Debug\Fproject.exe

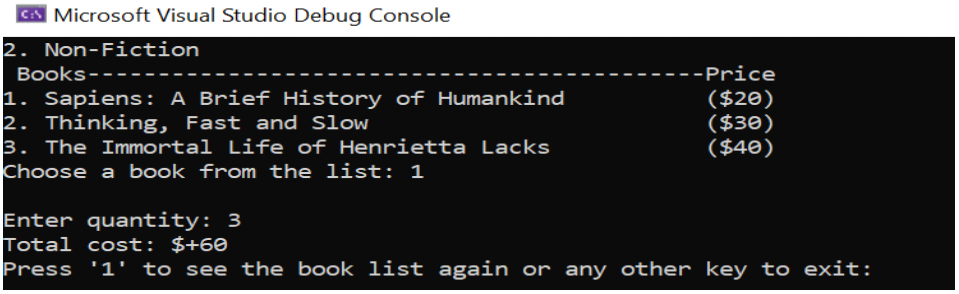
```
Welcome to the Online Book Store!
Press any key to continue...
Press '1' to see available books: 1
```

Category Selection:



```
Choose a category:
1. Fiction
2. Non-Fiction
3. Science-Fiction
2
```

Book List and Total Cost Calculation:



```
2. Non-Fiction
 Books--------------------------------------------Price
1. Sapiens: A Brief History of Humankind          ($20)
2. Thinking, Fast and Slow                        ($30)
3. The Immortal Life of Henrietta Lacks           ($40)
Choose a book from the list: 1

Enter quantity: 3
Total cost: $+60
Press '1' to see the book list again or any other key to exit:
```