*Q#1FLOWGRAPH*

1

1

2

4

3

6

5

8

7

10

9

12

11

14

134

***NIMRAH ALTAF ADAM***

***SE077***

*CYCLOMATIC COMPLEXITY*

***NIMRAH ALTAF ADAM***

***SE077***

V(G) = E - N + 2  
        = 19 - 14 + 2  
        =  7

*SET OF INDEPENDENT PATHS*

Path 1:  1 - 2 - 3 - 5 - 7 - 9 - 11 - 13 - 14  
Path 2:  1 - 3 - 4 - 14  
Path 3:  1 - 3 - 5 - 6 - 14  
Path 4:  1 - 3 - 5 - 7 - 8 - 14  
Path 5:  1 - 3 - 5 - 7 - 9 - 10 - 14  
Path 6:  1 - 3 - 5 - 7 - 9 - 11 - 12 - 14  
Path 7:  1 - 3 - 5 - 7 - 9 - 11 - 13 – 14

*TEST CASES*

|  |  |  |  |
| --- | --- | --- | --- |
| TEST CASE ID | PATHS | TEST DATA | EXPECTED RESULT |
| 1 | Path 1:  1 - 2 - 3 - 5 - 7 - 9 - 11 - 13 - 14 | nextday = yes  amount = 15 | 35.8375 |
| 2 | Path 2:  1 - 3 - 4 - 14 | nextday = no  amount = 1200 | 1359 |
| 3 | Path 3:  1 - 3 - 5 - 6 - 14 | nextday = no  amount = 500 | 576.25 |
| 4 | Path 4:  1 - 3 - 5 - 7 - 8 - 14 | nextday = no  amount = 162 | 186.995 |
| 5 | Path 5:  1 - 3 - 5 - 7 - 9 - 10 - 14 | nextday = no  amount = 80 | 95.75 |
| 6 | Path 6:  1 - 3 - 5 - 7 - 9 - 11 - 12 - 14 | nextday = no  amount = 40 | 50.15 |
| 7 | Path 7:  1 - 3 - 5 - 7 - 9 - 11 - 13 - 14 | nextday = no  amount = 7 | 12.7575 |

**Q#2**

Sales Rep

Specify Book Title

Billing Manager

Search Book In Catalog

If Book Title is Available

<<Extend>>

Search Price, ISBN, No copies of books

Report Price, No of copies in Stock

Inventory Management System

Place Order

<<Include>>

Specify No of copies User Name, Address

All Copies Available

Submit Ship Order

<<Extend>>

Check Copies of Books

Some Copies Available

<<Include>>

<<Extend>>

No Copies Available

<<Extend>>

Submit Both ship and backorder

Submit Back Order for all Books

<<Include>>

<<Include>>

Update Inventory

<<Include>>

Display Book Order

<<Include>>

Display Back Order

*Q#3*

Inventory Manager

Session Manager

Sales Rep

Book Order

Enter Title

Alternative

Check ISBN, Price & No of Copies

Exists In Catalog

Terminate

Does Not Exist

Show ISBN, Price, No Of Copies

Requests Number Of Copies

Enter No. Of Copies

Alternative

Enter Value <=0

Terminate

[Else]

Request name and Address

Enter Name and Address

Alternative

Ship order and Update Inventory

Required Books Available

***NIMRAH ALTAF ADAM***

***SE077***

Collect Order Info

Backorder the required Books

Required Books Not Available

Order Available Books

Display Order, Back Order Info

*Q#4*

User

-Id: Char

-Name: Char

-Password: Char

View

1..\*,\*

Buyer

+UpdateInfo ()

-Name: Char

-Address

0..1

+GetInfo ()

+SetInfo ()

Order

-NoOfBook: Integer

-ISBN: Char

-BuyerInfo: Char

+1..\*

Updates

+UpdateBooksQuantity()

+ShipOrder

Admin

-Id: Char

-Name: Char

-Password: Char

Sale Rep

+AddRecords()

+UpdateRecords()

+DeleteRecords()

+1..\*

Enter No Of Copies

-Id: Char

-Name: Char

-PhoneNo: Integer

-Address: Char

+1

+1..\*

Make Payment

-Id: Char

-Amount: Float

-TransactionId: Integer

-UserId: Char

+0..\*

+Login()

+Logout()

+CheckCatalog()

+CheckQuantity()

+BackOrder()

+CreateOrder()

Book

+1

BookName: Char

ISBN: Number

Author: Char

Quantity: Number

PPrice: Number

+1

+ConfirmTransaction()

+ReturnMoneyOnCan-cellation()

+1..\*

UpdateDetails()

UpdateQuantity()

GetDetails()

***NIMRAH ALTAF ADAM***

***SE077***

-Id: Char

-Name: Char

-Password: Char

User

+UpdateInfo()

-Id: Char

-Name: Char

-Password: Char

User

+UpdateInfo()