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INTERNATIONAL UNIVERSITY

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Course : DSA

Section: SE 3-2

Assignment # 01

Question # 1:

Output :

```
task3.cpp task4.cpp task5.cpp task1.cpp x task2.cpp
Assignment 1 > task1.cpp > main()
1  #include<iostream>
2  #include<string>
3  using namespace std;
4
5  int main()
6  {
7      const int size = 100;
8      int books[size] = {0};
9      string bookNames[size];
10     int bookCount = 0;
11
12     while (true)
13     {
14         int choice;
15         cout<<"\nLibrary Management System\n";
16         cout<<"1. Add a new book\n";
17
18         if (choice == 1)
19         {
20             int n;
21             cout<<"Enter the number of books to add: ";
22             cin>>n;
23             for (int i = 0; i < n; i++)
24             {
25                 cout<<"Enter the name of book: ";
26                 string name;
27                 getline(cin, name);
28                 bookNames[i] = name;
29                 books[i] = 1;
30                 bookCount++;
31             }
32             cout<<"Books added successfully!\n";
33         }
34         else if (choice == 2)
35         {
36             cout<<"Borrow a book\n";
37             int index;
38             for (int i = 0; i < bookCount; i++)
39             {
40                 cout<<i<<" ";<<endl;
41             }
42             index = -1;
43             for (int i = 0; i < bookCount; i++)
44             {
45                 if (books[i] == 1)
46                 {
47                     index = i;
48                 }
49             }
50             if (index != -1)
51             {
52                 books[index] = 0;
53                 cout<<"Book borrowed successfully!\n";
54             }
55             else
56             {
57                 cout<<"No book available for borrowing!\n";
58             }
59         }
60         else if (choice == 3)
61         {
62             cout<<"Return a book\n";
63             int index;
64             for (int i = 0; i < bookCount; i++)
65             {
66                 cout<<i<<" ";<<endl;
67             }
68             index = -1;
69             for (int i = 0; i < bookCount; i++)
70             {
71                 if (books[i] == 0)
72                 {
73                     index = i;
74                 }
75             }
76             if (index != -1)
77             {
78                 books[index] = 1;
79                 cout<<"Book returned successfully!\n";
80             }
81             else
82             {
83                 cout<<"No book available for returning!\n";
84             }
85         }
86         else if (choice == 4)
87         {
88             cout<<"Display all books\n";
89             for (int i = 0; i < bookCount; i++)
90             {
91                 cout<<i<<" ";<<endl;
92             }
93         }
94         else if (choice == 5)
95         {
96             cout<<"Exit\n";
97             return 0;
98         }
99     }
100 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\MUHAMMAD HAMMAD\Assignment 1> cd "c:\Users\MUHAMMAD HAMMAD\Assignment 1\" ; if ($?) { g++ task1.cpp -o task1 } ;
k1 }

Library Management System
1. Add a new book
2. Borrow a book
3. Return a book
4. Display all books
5. Exit
Enter your choice: 1
Enter the Name of book you want to add: DSA
Enter the Copies of books you want to add: 5
Book added successfully!
```



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```
task3.cpp task4.cpp task5.cpp task1.cpp X task2.cpp
Assignment 1 > task1.cpp > main()
1  #include<iostream>
2  #include<string>
3  using namespace std;
4
5  int main()
6  {
7      const int size = 100;
8      int books[size] = {0};
9      string bookNames[size];
10     int bookCount = 0;
11
12     while (true)
13     {
14         int choice;
15         cout<<"\nLibrary Management System\n";
16         cout<<"1. Add a new book\n";
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Code

```
Library Management System
1. Add a new book
2. Borrow a book
3. Return a book
4. Display all books
5. Exit
Enter your choice: 4

List of books in the library:
Book Name: DSA, Copies: 5
```



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Question # 2:

Output :

```
task3.cpp task4.cpp task5.cpp task1.cpp task2.cpp X
Assignment 1 > task2.cpp > main()
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int branches = 2;
6      int month = 2;
7      int highindex = 0;
8      int lowindex = 0;
9      int salespermonth[branches][month];
10     int salesinyear[branches];
11     int monthsales = 0;
12     int highestsales = 0;
13     for (int i = 0; i < branches; i++)
14     {
15         for (int j = 0; j < month; j++)
16         {
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\MUHAMMAD HAMMAD\Assignment 1> cd "c:\Users\MUHAMMAD HAMMAD\Assignment 1\" ; if ($?) { g++ task2.cpp -o task2 }
k2 }
Enter the total sales in 1 branch 1 month
2000
Enter the total sales in 1 branch 2 month
2500
Enter the total sales in 2 branch 1 month
1200
Enter the total sales in 2 branch 2 month
3000
The highest sales is 4500 in 1 branch
The lowest sales is 4200 in 2 branch
PS C:\Users\MUHAMMAD HAMMAD\Assignment 1> |
```



```
task3.cpp x task4.cpp task5.cpp task1.cpp task2.cpp
Assignment 1 > task3.cpp > ...
1 #include <iostream>
2 using namespace std;
3
4 void displaySeating(int seats[][15], int Rows, int Seats_Per_Row)
5 {
6     cout << "Seating Arrangement: (0 = Available, 1 = Occupied)" << endl;
7     cout << " ";
8     for (int i = 0; i < Seats_Per_Row; i++)
9     {
10         cout << i + 1 << " ";
11     }
12     cout << endl;
13     for (int i = 0; i < Rows; i++)
14     {
15         cout << "Row " << i + 1 << ": ";
16         for (int j = 0; j < Seats_Per_Row; j++)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\MUHAMMAD HAMMAD\Assignment 1> cd "c:\Users\MUHAMMAD HAMMAD\Assignment 1\" ; if ($?) { g++ task3.cpp -o task3 } ;
k3 }
```

*** Cinema Seating Arrangement System ***
1. Display seating arrangement
2. Book a seat
3. Exit
Enter your choice: 2
Enter row number (1 to 10): 2
Enter seat number (1 to 15): 3
Seat successfully booked!

Enter your choice: 1
Seating Arrangement: (0 = Available, 1 = Occupied)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Row 1: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Row 2: 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
Row 3: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Row 4: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Row 5: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Row 6: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Row 7: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Row 8: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Row 9: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Row 10: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0



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Question # 4 :

Output:

```
task3.cpp task4.cpp x task5.cpp task1.cpp task2.cpp
Assignment 1 > task4.cpp > main()
1  #include <iostream>
2  using namespace std;
3
4  int linearSearch(int arr[], int n, int target)
5  {
6      for (int i = 0; i < n; i++)
7      {
8          if (arr[i] == target)
9          {
10             return i;
11         }
12     }
13     return -1;
14 }
15
16 int main()

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\MUHAMMAD HAMMAD\Assignment 1> cd "c:\Users\MUHAMMAD HAMMAD\Assignment 1\" ; if ($?) { g++ task4.cpp -o task4 } ;
k4 }
Enter the number of orders (up to 1000): 5
Enter 5 order IDs:
780
781
782
783
784
Enter the order ID to search for: 782
Order ID 782 found at position 2
PS C:\Users\MUHAMMAD HAMMAD\Assignment 1> |
```



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Question # 5 :

Output :

```
task3.cpp task4.cpp task5.cpp X task1.cpp task2.cpp
Assignment 1 > task5.cpp > main()
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      const int days = 2;
6      const int hours = 4;
7      int temp[days][hours];
8      int average;
9      int tem;
10     int maxtemp = 0;
11     for (int i = 0; i < days; i++)
12     {
13         tem = 0;
14         for (int j = 0; j < hours; j++)
15         {
16             cout << "Enter the temperature on " << i + 1 << " day " << " at " << i + 1 << " hour: ";
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\MUHAMMAD HAMMAD\Assignment 1> cd "c:\Users\MUHAMMAD HAMMAD\Assignment 1\" ; if ($?) { g++ task5.cpp -o task5 } ;
k5 }
Enter the temperature on 1 day at 1 hour: 23
Enter the temperature on 1 day at 2 hour: 32
Enter the temperature on 1 day at 3 hour: 25
Enter the temperature on 1 day at 4 hour: 27
The average temperature at 1 day 26
Enter the temperature on 2 day at 1 hour: 27
Enter the temperature on 2 day at 2 hour: 28
Enter the temperature on 2 day at 3 hour: 36
Enter the temperature on 2 day at 4 hour: 40
The average temperature at 2 day 32
The highest temperature in a entire week is : 40
The lowest temperature in a entire week is : 23
PS C:\Users\MUHAMMAD HAMMAD\Assignment 1>
```

-----END-----