DAY_13_TASK:

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1.A library needs to develop an online application for two types of users/roles, Adults and children. Both of these users should be able to register an account. Any user who is less than 12 years of age will be registered as a child and they can borrow a "Kids" category book for 10 days, whereas an adult can borrow "Fiction" category books which need to be returned within 7 days.

1.Create an interface LibraryUser with the following methods declared,

Method Name

registerAccount

requestBook

2.Create 2 classes "KidUser" and "AdultUser" which implements the LibraryUser interface.

3.Both the classes should have two instance variables as specified below.

age	int
bookType	String

4.The methods in the KidUser class should perform the following logic.

1. registerAccount : if age < 12, a message displaying “You have successfully registered under a Kids Account” should be displayed in the console.

If(age>12), a message displaying, "Sorry, Age must be less than 12 to register as a kid" should be displayed in the console.

2. requestBook : if bookType is "Kids", a message displaying "Book Issued successfully, please return the book within 10 days" should be displayed in the console.

else, a message displaying, "You are allowed to take only kids books" should be displayed in the console.

5.The methods in the AdultUser class should perform the following logic.

1. registerAccount : if age > 12, a message displaying "You have successfully registered under an Adult Account" should be displayed in the console.

If age<12, a message displaying, "Sorry, Age must be greater than 12 to register as an adult" should be displayed in the console.

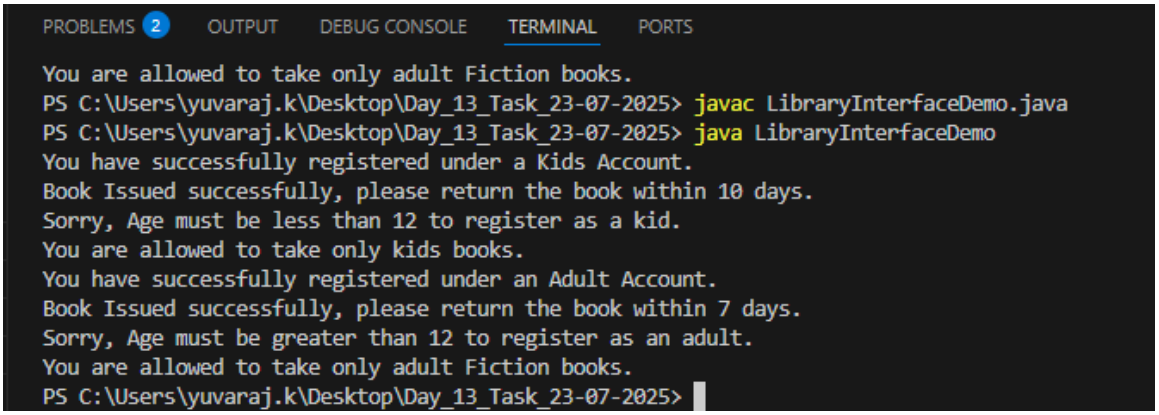
2. requestBook : if bookType is "Fiction", a message displaying "Book Issued successfully, please return the book within 7 days" should be displayed in the console.

else, a message displaying, "

You are allowed to take only adult Fiction books" should be displayed in the console.

6.Create a class LibraryInterfaceDemo with a main method which performs the below functions,

In the main method, test all the methods.



2.Write a program to read two integer array lists of size 5 each as input and to merge the two arrayLists, sort the merged arraylist in ascending order and fetch the elements at 2nd, 6th and 8th index into a new arrayList and return the final ArrayList.

```
PS C:\Users\yuvaraj.k\Desktop\Day_13_Task_23-07-2025> java MergeAndFetch
Enter 5 integers for the first list:
1
2
3
6
5
```

```
Enter 5 integers for the second list:
23
56
12
45
76
Final ArrayList with elements at indices 2, 6, and 8: [3, 23, 56]
PS C:\Users\yuvaraj.k\Desktop\Day_13_Task_23-07-2025>
```

3.Read student details as input.The details would include name, mark in the given order. The datatype for name is string, mark is float.Create a hashmap that contains name as key and mark as value.Get student name as input and display the student grade.

1. If Mark is less than 60, then grade is FAIL.

2. If Mark is greater than or equal to 60, then grade is PASS.

```
PS C:\Users\yuvaraj.k\Desktop\Day_13_Task_23-07-2025> javac StudentGrades.java
PS C:\Users\yuvaraj.k\Desktop\Day_13_Task_23-07-2025> java StudentGrades
Enter number of students: 1
Enter student name: Yuvaraj
Enter mark for Yuvaraj : 87
Enter student name to get grade: Yuvaraj
Grade: PASS
PS C:\Users\yuvaraj.k\Desktop\Day_13_Task_23-07-2025>
```

4.Write a program to get integers as input and store in the arraylist. Traverse the input list, if the number is even store in a arraylist called evenNumbersList and oddnumbers in oddNumberList. Print the input list and the lists containing even numbers and odd numbers.

```
PS C:\Users\yuvaraj.k\Desktop\Day_13_Task_23-07-2025> javac EvenOddList.java
PS C:\Users\yuvaraj.k\Desktop\Day_13_Task_23-07-2025> java EvenOddList
Enter number of elements: 7
Enter integer 1: 10
Enter integer 2: 8
Enter integer 3: 2
Enter integer 4: 67
Enter integer 5: 56
Enter integer 6: 34
Enter integer 7: 98
```

```
Input List: [10, 8, 2, 67, 56, 34, 98]
Even Numbers List: [10, 8, 2, 56, 34, 98]
Odd Numbers List: [67]
PS C:\Users\yuvaraj.k\Desktop\Day_13_Task_23-07-2025>
```