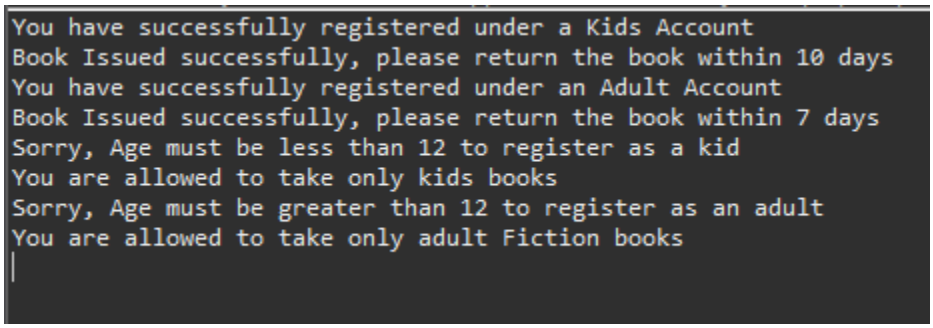
TASK 11

DATE : 23-07-25
NAME : SANJEEV N

PROBLEM 1:



```
You have successfully registered under a Kids Account
Book Issued successfully, please return the book within 10 days
You have successfully registered under an Adult Account
Book Issued successfully, please return the book within 7 days
Sorry, Age must be less than 12 to register as a kid
You are allowed to take only kids books
Sorry, Age must be greater than 12 to register as an adult
You are allowed to take only adult Fiction books
```

```java
package com.training2.ooc;

interface LibraryUser {
 void registerAccount();
 void requestBook();
}

class KidUser implements LibraryUser {
 int age;
 String bookType;

 KidUser(int age, String bookType) {
    this.age = age;
    this.bookType = bookType;
 }

 public void registerAccount() {
    if (age < 12) {
       System.out.println("You have successfully registered under a Kids Account");
    } else {
       System.out.println("Sorry, Age must be less than 12 to register as a kid");
    }
 }

 public void requestBook() {
    if (bookType.equalsIgnoreCase("Kids")) {
       System.out.println("Book Issued successfully, please return the book within
10 days");
    } else {
       System.out.println("You are allowed to take only kids books");
```

```
        }
    }
}

class AdultUser implements LibraryUser {
    int age;
    String bookType;

    AdultUser(int age, String bookType) {
        this.age = age;
        this.bookType = bookType;
    }

    public void registerAccount() {
        if (age > 12) {
            System.out.println("You have successfully registered under an Adult
Account");
        } else {
            System.out.println("Sorry, Age must be greater than 12 to register as an
adult");
        }
    }

    public void requestBook() {
        if (bookType.equalsIgnoreCase("Fiction")) {
            System.out.println("Book Issued successfully, please return the book within 7
days");
        } else {
            System.out.println("You are allowed to take only adult Fiction books");
        }
    }
}

public class LibraryInterfaceDemo {
    public static void main(String[] args) {
        LibraryUser kid = new KidUser(10, "Kids");
        kid.registerAccount();
        kid.requestBook();

        LibraryUser adult = new AdultUser(23, "Fiction");
        adult.registerAccount();
        adult.requestBook();

        LibraryUser wrongKid = new KidUser(14, "Fiction");
        wrongKid.registerAccount();
        wrongKid.requestBook();

        LibraryUser wrongAdult = new AdultUser(9, "Kids");
        wrongAdult.registerAccount();
```

```
                wrongAdult.requestBook();
            }
        }
```

PROBLEM 2 :

```
Enter 5 integers for first list:
1 2 3 4 5
Enter 5 integers for second list:
6 7 8 9 10
Merged & Sorted List: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
Fetched Elements: [3, 7, 9]
```

```
package com.training2.ooc;
import java.util.ArrayList;
import java.util.Collections;
import java.util.Scanner;
public class MergeAndFetch {
  public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    ArrayList<Integer> list1 = new ArrayList<>();
    ArrayList<Integer> list2 = new ArrayList<>();
    System.out.println("Enter 5 integers for first list:");
    for (int i = 0; i < 5; i++) {
      list1.add(sc.nextInt());
    }
    System.out.println("Enter 5 integers for second list:");
    for (int i = 0; i < 5; i++) {
      list2.add(sc.nextInt());
    }
    ArrayList<Integer> mergedList = new ArrayList<>();
    mergedList.addAll(list1);
    mergedList.addAll(list2);
    Collections.sort(mergedList);
    ArrayList<Integer> result = new ArrayList<>();
    if (mergedList.size() > 2) result.add(mergedList.get(2));
    if (mergedList.size() > 6) result.add(mergedList.get(6));
    if (mergedList.size() > 8) result.add(mergedList.get(8));
    System.out.println("Merged & Sorted List: " + mergedList);
    System.out.println("Fetched Elements: " + result);
  }
}
```

PROBLEM 3 :

```
Enter number of students:
2
Enter student name: SANJEEV
Enter mark: 234
Enter student name: ROCKY
Enter mark: 432
Enter student name to check grade: SANJEEV
SANJEEV Grade: PASS
```

```java
package com.training2.ooc;
import java.util.HashMap;
import java.util.Scanner;
public class StudentGrade {
  public static void main(String[] args) {
     HashMap<String, Float> studentMap = new HashMap<>();
     Scanner sc = new Scanner(System.in);
     System.out.println("Enter number of students:");
     int n = sc.nextInt();
     sc.nextLine();
     for (int i = 0; i < n; i++) {
        System.out.print("Enter student name: ");
        String name = sc.nextLine();
        System.out.print("Enter mark: ");
        float mark = sc.nextFloat();
        sc.nextLine();
        studentMap.put(name, mark);
     }
     System.out.print("Enter student name to check grade: ");
     String studentName = sc.nextLine();
     if (studentMap.containsKey(studentName)) {
        float mark = studentMap.get(studentName);
        if (mark < 60) {
           System.out.println(studentName + " Grade: FAIL");
        } else {
           System.out.println(studentName + " Grade: PASS");
        }
     } else {
        System.out.println("Student not found.");
     }
  }
}
```

PROBLEM 4 :

```
Enter integers (type -1 to stop):
12
5
7
6
10
13
8
-1
Input List: [12, 5, 7, 6, 10, 13, 8]
Even Numbers: [12, 6, 10, 8]
Odd Numbers: [5, 7, 13]
```

```java
package com.training2.ooc;
import java.util.ArrayList;
import java.util.Scanner;
public class EvenOddList {
  public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    ArrayList<Integer> inputList = new ArrayList<>();
    ArrayList<Integer> evenNumbers = new ArrayList<>();
    ArrayList<Integer> oddNumbers = new ArrayList<>();
    System.out.println("Enter integers (type -1 to stop):");
    while (true) {
      int num = sc.nextInt();
      if (num == -1) break;
      inputList.add(num);
      if (num % 2 == 0) {
        evenNumbers.add(num);
      } else {
        oddNumbers.add(num);
      }
    }
    System.out.println("Input List: " + inputList);
    System.out.println("Even Numbers: " + evenNumbers);
    System.out.println("Odd Numbers: " + oddNumbers);
  }
}
```