Java & DSA - ASSIGNMENT - DAY 15

Please practice the following activities-

1. You have data of some amazon customers. The information consist of:
   whether the customer has amazon prime (0 or 1)

   whether the customer has amazon upi pay enabled (0 or 1)

   number of products ordered in the last 10 days (integer)

   add a field of custom voucher (discount) based on the following criteria:

   10% for people with either amazon pay or prime

   20% for people with both amazon pay and prime

   30% for people with both amazon pay, prime and also who have ordered

   more than 5 products in last 10 days

2. You are preparing a weekly diet plan for your friend. Ask your friend to enter his/her favourite dish one by one from the console. Start storing these in an ArrayList.
   Avoid taking the data if:

   a. dish is already present in the list
   b. 7 dishes have been stored

   Display the dish with the shortest name

   Delete the dishes if they have any of the following terms

   "cheese"

   "butter"

"pastries"

"fries"

3. A set of names in a List<String> form has been provided, however the names have a lot of unnecessary whitespaces. Apply String.trim() to each of the names ("Raman ", " Kalam ", " Ramanujan ", "Bose ")

4. Given a string s:
   String s = "I like the evening in India, the one magic moment when the sun balances on the rim of the world, and the hush descends, and ten thousand civil servants drift homeward on a river of bicycles, brooding on God and the cost of living";

   a. Write a program to count the frequency of the words in the string using collections.

   optional:

   b. display the collection by sorting using the word (ascii)
   c. display the collection by sorting using the word frequency

5. Earlier in the day, you had tried out the code for fellowship research. Solve the same using an appropriate collections framework.
   The problem statement for your reference:-

   A number of researchers are there in a research institution. There are researchers with IDs 1 to 100 who are free to do the research. Array A with length N represents the researchers' IDs who have done the respective research. The researcher who has done a total number of researches more than the researches of all the other researchers put together, will get the Fellowship. For example, consider the below array:

   A = [5, 3, 1, 5, 5, 52, 78, 5, 91, 5, 5, 5, 88]

   It tells us that first research is done by researchers with ID 5, second research is done by researcher with ID 3 and so on.

   Here, ID 5 will get the Fellowship because he has done 7 researches and the rest of them together have done 6 researches together.

Write a function

```
class Fellowship {
	public int getFellowship(int[] A){
		// Implement Your Code Here
	}
}
```

which, given an array A consisting of N whole numbers, returns the ID of the researcher who gets the fellowship

The function should return −1 if nobody in array A gets a fellowship.