

## **Lab 2: Arrays**

### **Exercise 1:**

Write a program to get the list of products with duplicate values

### **Exercise 2:**

Write a program to get the sorted list of Products name

### **Exercise 3:**

Write a Java program to test if an array contains a specific value.

### **Exercise 4:**

Write a Java program to find the length of the longest consecutive elements sequence from a given unsorted array of integers.

Sample array: [49, 1, 3, 200, 2, 4, 70, 5]

The longest consecutive elements sequence is [1, 2, 3, 4, 5], therefore the program will return its length 5.

### **Exercise 5:**

Write a program to Take 20 integer inputs from user and print the following:

- number of positive numbers
- number of negative numbers
- number of odd numbers
- number of even numbers
- number of 0s.

## **Lab 2: OOPS**

Q1: Create a program for a Car shop to calculate the no of cars sold. Car class has three attributes: speed (int), car owner (String), car type (String). Write methods to get and set above values of the car object. Also devise a way to calculate the number of cars sold by the car shop.

Q2: Create a program for a Hostel to calculate the no of students registered. Student class has three attributes: Student\_ID (int), Student\_Name (String), Student\_class (String). Write methods to get and set above values of the Student object. Also devise a way to calculate the number of students registered in the hostel.

Q3: Create a program for an Author to calculate the number of books he/she has written. Book class has three attributes: Book\_Name (String), Book\_Price (Double), Book\_Type (String). Write methods to get and set above values of the Student object. Also devise a way to calculate the number of books written by the author.

Q4: Create a program for a Company to calculate the number of employees working in that company. Employee class has three attributes: emp\_Name (String), emp\_Designation(String), emp\_ID (Integer). Write methods to get and set above values of the Employee object. Also devise a way to calculate the number of employees working in the company.

Q5: We have bug tracking system, in this we have a requirement to create application first on which different projects will be created, one Application may have multiple projects.

## **Requirement #1**

Application class will have application id and application name.

Create an ApplicationTest class first , and from here we need to add application using addApplication method of ApplicationService class. addApplicationMethod will take application object.

User should be prompted accordingly that application has been created successfully with application detail.

## **Requirement #2**

Application can be edited by the application owner only. Assume that you need to test the application editing feature. In the ApplicationService class create public Application updateApplication(int applicationId); method, that will be taking id value and new application name that has to be edited.

## **Requirement #3**

Application can be deleted by the application owner only. Assume that you need to test the application deleting feature. In the ApplicationService class create public void deleteApplication(int applicationId); method, that will be taking id value and based on that application must be deleted.

#### **Requirement #4**

As number of applications can be created, assume that you have an array of size 50, where you can create applications. Show the list of available applications; create a suitable method to test. This method should return the array of Applications.

#### **Requirement #5**

Update the Application class, so that you can accommodate the creation date of the application as well. Test your application for changes.

#### **Requirement #6**

We want to get the list of applications based on date range. Test the feature, based on output create a test method and for the same we want you to create an appropriate method in the service class. which will return the array of applications based on date range.

#### **Requirement #7**

We want you to test a feature to get the list of applications based on free text search. Like, user can provide the application name or date, and it must return the application, this will include everything in the application.

