

Lab Assignments-Collections

Q1. Consider the four core interfaces, Set, List, Queue, and Map. For each of the following four assignments, specify which of the four core interfaces is best-suited, and explain how to use it to implement the assignment.

- ABC Pvt Ltd needs to record the names of all its employees. Every month, an employee will be chosen at random from these records to receive a free toy.
- It has decided that each new product will be named after an employee but only first names will be used, and each name will be used only once. Prepare a list of unique first names.
- It decides that it only wants to use the most popular names for its toys. Count up the number of employees who have each first name.
- It acquires season tickets for the local lacrosse team, to be shared by employees. Create a waiting list for this popular sport.
- It should allow to update the element from the list at second position
- It should allow sorting of product as per the allocation.
- It should allow you to trim the size of list
- Display the product list as per the allocation order.

Q2.Consider shopping App.Add the product details in the cart as per your choice of category of products and perform following operations for the same.

- Add the products details in unordered way
- Production collection should only accept unique products
- Check what happens when you provide null values for product and handle the situation through exception handling
- Check the size of collection
- Clone the collection into another collection object
- Perform sorting by product id ,name and price
- Create another collection object to store the product collection in ordered format
- Try to retrieve the first and last product in the collection

Q3.Consider an Health Checkup App for patients and perform the following operations.

- Patient should be able to enroll details for checkup
- Display the patient record through Iterator
- Retrieve the details of first and last patient.
- Retrieve only first five records of patient from the app.

@Note-use set interface for storage
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Q4.Create a HashMap program to store the details of employee with (id, name, salary, designation, department) and perform following features

- Display employee records as per the key
- Display number of records in the employee
- Check whether the employee collection isEmpty or not

- Test if a map contains a mapping for the specified key .
- Perform search on map object by name of employee
- Fetch employee by key and as well as value
- Perform the serialization on map values and stored in data.ser file and even deserialized to fetch the data.

Q5.Create a collection of student(id,name,standard) class through vector object and perform following operations on student object

- Insert the records of student
- Get the capacity of object
- Get the size of object
- Checks whether the specified element is present in the Vector.
- Get the 2nd student record
- Set the standard of student at 3rd record
- @Note-Also create a stack object of Student and work with different operation available in stack

Q6.Consider a Movie booking app in which we want to store the details of ticket. Please consider following points to work on it.(need to work with two class-Ticket and customer)

- Store all the tickets in object
- Display all tickets
- Retrieve the first and last booking of ticket
- Remove the first booked ticket
- It should allow us to book ticket in two way is from first and even last
- Sort the first five booked tickets
- Fetch the size of booked tickets
- Fetch the name of the ticket booked at 5 th position
- Fetch the names of customer starting with A who have booked the ticket.