Questions related to Assignment #4

Scenario based examples:

Question 1 – Student Management System

A university wants to maintain a list of students enrolled in a course. Each student has a name, roll number, and grade.

Tasks:

1. Create an ArrayList to store student names.

2. Add at least 5 students to the list.

3. Display all students and their count.

4. Remove a student who has dropped the course.

5. Update the grade of a particular student.

Question 2 – Inventory Management

A small store tracks its products in a list. Each product has a product name and price.

Tasks:

1. Create an ArrayList to store product names.

2. Add, remove, and update products using ArrayList methods.

3. Find the total number of products available.

4. Check if a particular product exists in the list.

Question 3 – Task Scheduler

A company maintains a daily task list for employees.

Tasks:

1. Create an ArrayList of tasks.

2. Add tasks like "Check emails", "Team meeting", "Code review".

3. Mark a task as completed by updating it in the list.

4. Display all pending tasks.

Question 4 – Library Management System

A library stores book titles in an ArrayList.

Tasks:

1. Add at least 10 books to the ArrayList.

2. Display books using a loop.

3. Remove books that are no longer available.

4. Find if a particular book is in the library.

5. Display the total number of books available.

Question 5 – Banking Application

A bank maintains a list of customer names.

Tasks:

1. Store the names in an ArrayList.

2. Add new customers dynamically.

3. Remove customers who closed their accounts.

4. Display all customers in alphabetical order.

5. Count the total number of active customers.

Question 6 – Generic ArrayList Example

A company wants to maintain employee IDs as integers and names as strings.

Tasks:

1. Create two ArrayLists: one for IDs (Integer) and one for names (String) using Generics.

2. Add at least 5 employees.

3. Display all employee IDs and names.

4. Ensure type safety using Generics.

Question 7 – Movie Collection

A user wants to maintain a list of favorite movies.

Tasks:

1. Store the movie names in an ArrayList.

2. Add, update, and remove movies.

3. Display movies in reverse order.

4. Check whether a particular movie exists in the collection.

Question 8 – Shopping Cart System

An e-commerce website stores selected items in a shopping cart.

Tasks:

1. Create an ArrayList of items.

2. Add items dynamically as the user selects them.

3. Remove items if the user cancels them.

4. Count the total items in the cart.

5. Display all items before checkout.