Experiment No: 2.3

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Aim:

Write a Program to perform the basic operations like insert, delete, display and search in list. List contains String object items where these operations are to be performed.

Objective: The Goal of this project is to design and implement basic operations like insert, delete, display and search in list. The List contains object items where these operations are to be performed

Algorithm:

Initialize list

repeat until exit:
    display menu options (insert, delete, display, search, exit)
    read user choice

    switch user choice:
        case 'insert':
            prompt user for string to insert
            append string to list
            display success message
        break

        case 'delete':
            prompt user for string to delete
            search for string in list
            if string found:
                remove string from list
                display success message
            else:
                display error message

```
    break

    case 'display':
        iterate over list:
            print each string
    break

    case 'search':
        prompt user for string to search
        search for string in list
        if string found:
            display success message with index
        else:
            display error message
    break

    case 'exit':
        exit loop
    break

    default:
        display error message for invalid choice
    break
```

Code:

```
import java.util.ArrayList;
import java.util.Scanner;

public class Main {
    private static ArrayList<String> stringList = new ArrayList<>();
    private static Scanner scanner = new Scanner(System.in);

    public static void main(String[] args) {
        while (true) {
            System.out.println("\n DEBDULAL DAS 21BCS9011");
            System.out.println("\nChoose an operation:");
```

```
        System.out.println("1. Insert");
        System.out.println("2. Delete");
        System.out.println("3. Display");
        System.out.println("4. Search");
        System.out.println("5. Exit");
        System.out.print("Enter your choice: ");
        int choice = scanner.nextInt();
        scanner.nextLine();

        switch (choice) {
            case 1:
                insert();
                break;
            case 2:
                delete();
                break;
            case 3:
                display();
                break;
            case 4:
                search();
                break;
            case 5:
                System.out.println("Exiting program...");
                System.exit(0);
            default:
                System.out.println("Invalid choice. Please enter a valid option.");
        }
    }
}

private static void insert() {
    System.out.print("Enter the string to insert: ");
    String str = scanner.nextLine();
```

```
    stringList.add(str);
    System.out.println("String inserted successfully.");
}

private static void delete() {
    System.out.print("Enter the string to delete: ");
    String str = scanner.nextLine();
    if (stringList.remove(str)) {
        System.out.println("String deleted successfully.");
    } else {
        System.out.println("String not found in the list.");
    }
}

private static void display() {
    if (stringList.isEmpty()) {
        System.out.println("List is empty.");
    } else {
        System.out.println("List contents:");
        for (String str : stringList) {
            System.out.println(str);
        }
    }
}

private static void search() {
    System.out.print("Enter the string to search: ");
    String str = scanner.nextLine();
    if (stringList.contains(str)) {
        System.out.println("String found in the list.");
    } else {
        System.out.println("String not found in the list.");
    }
}
```

}

Output:

```
 DEBDULAL DAS 21BCS9011

Choose an operation:
1. Insert
2. Delete
3. Display
4. Search
5. Exit
Enter your choice: 1
Enter the string to insert: 7
String inserted successfully.

Choose an operation:
1. Insert
2. Delete
3. Display
4. Search
5. Exit
Enter your choice: 1
Enter the string to insert: 3
String inserted successfully.

Choose an operation:
1. Insert
2. Delete
3. Display
4. Search
5. Exit
Enter your choice: 2
Enter the string to delete: 3
String deleted successfully.

Choose an operation:
1. Insert
2. Delete
3. Display
4. Search
5. Exit
```

```
Enter your choice: 3
List contents:
7

Choose an operation:
1. Insert
2. Delete
3. Display
4. Search
5. Exit
Enter your choice: 4
Enter the string to search: 7
String found in the list.

Choose an operation:
1. Insert
2. Delete
3. Display
4. Search
5. Exit
Enter your choice: 5
Exiting program...


...Program finished with exit code 0
Press ENTER to exit console.
```

Objective:

i. Learned about various operation on a list
ii. Learned about Insertion
iii. Learned about Deletion
iv. Learned about Searching
v. Learned how to use cases.