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SubjectName:JavaLab

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1.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: Tolearnaboutconceptof ArrayList.

• TolearnaboutvariousmethodsofList.

1.Algo./Approachandoutput:

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

publicclassMain{
    public static void main(String[] args) {
        ArrayList<String>stringList=newArrayList<>();
        Scanner scanner = new Scanner(System.in);
        intchoice;

        do{
            System.out.println("\nStringListOperations:");
            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: ");
            choice = scanner.nextInt();
            scanner.nextLine();//consumenewline
```

```
        switch(choice){
            case 1:
                System.out.print("Enterstringtoinsert:");
                String insertString = scanner.nextLine();
                stringList.add(insertString);
                System.out.println("Stringinsertedsuccessfully.");
                break;
            case2:
                System.out.print("Enterindextodelete:"); int
                deleteIndex = scanner.nextInt();
                if(deleteIndex>=0&&deleteIndex<stringList.size()){
                    stringList.remove(deleteIndex);
                    System.out.println("String deleted successfully.");
                }else{
                    System.out.println("Invalidindex.");
                }
                break;
            case 3:
                System.out.println("Stringsinthelist:");
                for (String str : stringList) {
                    System.out.println(str);
                }
                break;
            case 4:
                System.out.print("Enterstringtosearch:");
                String searchString = scanner.nextLine();
                if (stringList.contains(searchString)) {
                    System.out.println("Stringfoundinthelist.");
                }else{
                    System.out.println("Stringnotfoundinthelist.");
                }
                break;
            case 5:
                System.out.println("Exiting program.");
                break;
            default:
                System.out.println("Invalidchoice.Pleaseenteravalidoption.");
        }
    }while(choice!=5);

    scanner.close();
}
```

}

Output:

```
String List Operations:
1. Insert
2. Delete
3. Display
4. Search
5. Exit
Enter your choice: 1
Enter string to insert: 10 11 123 13 14
String inserted successfully.

String List Operations:
1. Insert
2. Delete
3. Display
4. Search
5. Exit
Enter your choice: 3
Strings in the list:
10 11 123 13 14
```

LearningOutcomes:-

- .UnderstandingCollections:GainfamiliaritywithJava'sCollectionsframework andthe ArrayListclassspecificallyforstoringandmanipulating listsofobjects.
- .InputHandling:Learnhowtohandle userinputusingtheScannerclass,including reading integers and strings from the console.
- .SwitchStatements:Understandhowtouse switchstatements formenu-driven programs, enabling the user to choose different operations.
- .InsertionOperation:LearnhowtoinsertelementsintoanArrayListusingthe add() method.