



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 4

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Subject Name: PBLJ LAB

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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.
2. **Implementation/Code:**

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

public class StringListOperations {

    private static ArrayList<String> list = new ArrayList<>();

    public static void insertItem(String item) {
        list.add(item);
    }

    public static void deleteItem(String item) {
        if (list.contains(item)) {
            list.remove(item);
            System.out.println(item + " has been removed.");
        } else {
            System.out.println(item + " not found in the list.");
        }
    }

    public static void displayList() {
        if (list.isEmpty()) {
            System.out.println("The list is empty.");
        } else {
            System.out.println("List items: " + list);
        }
    }

    public static void searchItem(String item) {
        if (list.contains(item)) {
            System.out.println(item + " is found in the list.");
        } else {
            System.out.println(item + " is not found in the list.");
        }
    }
}
```



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```
    }  
}  
public static void main(String[] args) {  
    Scanner sc = new Scanner(System.in);  
    int choice;  
  
    do {  
        System.out.println("\nSelect an operation:");  
        System.out.println("1. Insert Item");  
        System.out.println("2. Delete Item");  
        System.out.println("3. Display List");  
        System.out.println("4. Search Item");  
        System.out.println("5. Exit");  
        choice = sc.nextInt();  
        sc.nextLine();  
  
        switch (choice) {  
            case 1:  
                System.out.print("Enter item to insert: ");  
                String insertItem = sc.nextLine();  
                insertItem(insertItem);  
                break;  
            case 2:  
                System.out.print("Enter item to delete: ");  
                String deleteItem = sc.nextLine();  
                deleteItem(deleteItem);  
                break;  
            case 3:  
                displayList();  
                break;  
            case 4:  
                System.out.print("Enter item to search: ");  
                String searchItem = sc.nextLine();  
                searchItem(searchItem);  
                break;  
            case 5:  
                System.out.println("Exiting program.");  
                break;  
            default:  
                System.out.println("Invalid choice! Please choose a valid option.");  
        }  
    } while (choice != 5);  
}
```

```
        sc.close();  
    }  
}
```

3. Output:

```
Select an operation:
```

- 1. Insert Item
- 2. Delete Item
- 3. Display List
- 4. Search Item
- 5. Exit

```
1
```

```
Enter item to insert: Apple
```

```
Select an operation:
```

- 1. Insert Item
- 2. Delete Item
- 3. Display List
- 4. Search Item
- 5. Exit

```
2
```

```
Enter item to delete: Apple
```

```
Apple has been removed.
```

```
Select an operation:
```

- 1. Insert Item
- 2. Delete Item
- 3. Display List
- 4. Search Item
- 5. Exit

```
3
```

```
The list is empty.
```

6. Learning Outcomes:

1. Learn how to perform basic CRUD (Create, Read, Update, Delete) operations on a List of String objects in Java.
2. Understand how to use the ArrayList class for dynamically storing and manipulating a collection of items.
3. Practice handling user input using the Scanner class for interaction with the program.
4. Implement methods for searching, deleting, and displaying items in a list efficiently.
5. Gain familiarity with control flow and loops to allow for continuous user interaction until the program is exited.