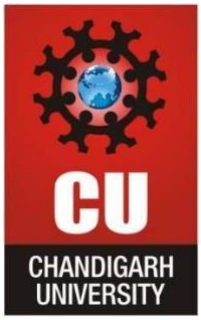
Department of Computer Science & Engineering



UNIVERSITY INSTITUTE OF ENGINEERING

Department of Computer Science & Engineering

Subject Name: Project Based Learning in Java Lab

Subject Code: 20CSP321

Submitted to: Er.Parveen Tanwar Sir
Faculty name: Er. Parveen Tanwar Sir

Submitted by: Priya Bharti
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UID: 20BCS3524
Section: 607
Group: B

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Ex. No	List of Experiments	Conduct (MM: 12)	Viva (MM: 10)	Record (MM: 8)	Total (MM: 30)	Date	Remarks/Signature
1.1	Create an application to save the employee information using arrays.					03/09/22	
1.2	Design and implement a simple inventory control system for a small video rental store.					05/09/22	
1.3	Create a application to calculate interest for FDs, RDs based on certain conditions using inheritance.					10/09/22	
2.1	Create a program to set view of Keys from Java Hashtable.					29/09/22	
2.2	Create a program to show the usage of Sets of Collection interface.					07/10/22	
2.3	Write a Program to perform them basic operations like insert, delete, display, and search in list. List contains String object items where these operations are to be performed.					12/10/22	
2.4	Create a menu-based Java application with the following options. 1.Add an Employee 2.Display All 3.Exit If option 1 is selected, the application should gather details of the employee like employee name, employee id, designation and salary and store it in a file. If option 2 is selected, the application should display all the employee details. If option 3 is selected the application should exit.					13/10/22	
3.1	Create a palindrome creator application for making a longest possible palindrome out of given input string.						
3.2	Create a Servlet/ application with a facility to print any message on web browser.						
3.3	Create JSP application for addition, multiplication and division.						

Department of Computer Science & Engineering

Experiment 2.3

Student Name: Priya Bharti **UID: 20BS3524**

Branch: CSE **Section/Group: 607-B**

Semester: 5th **Date of Performance: 12/10/22**

Subject Name: PBLJ Lab **Subject Code: 20CSP-321**

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:

Java ArrayList class uses a dynamic array for storing the elements. It is like an array, but there is no size limit. We can add or remove elements anytime. So, it is much more flexible than the traditional array. It is found in the java.util package. It is like the Vector in C++.

The ArrayList in Java can have the duplicate elements also. It implements the List interface so we can use all the methods of the List interface here. The ArrayList maintains the insertion order internally.

It inherits the AbstractList class and implements List interface.

The important points about the Java ArrayList class are:

1. Java ArrayList class can contain duplicate elements.
2. Java ArrayList class maintains insertion order.
3. Java ArrayList class is non synchronized.
4. Java ArrayList allows random access because the array works on an index basis.

In ArrayList, manipulation is a little bit slower than the LinkedList in Java because a lot of shifting needs to occur if any element is removed from the array list.

We can not create an array list of the primitive types, such as int, float, char, etc. It is required to use the required wrapper class in such cases.

JAVA CODE/INPUT:

```
import java.util.*;
class string {
   public static void main(String[] args) {
      ArrayList<String> list=new ArrayList<String>();
      Scanner sc=new Scanner(System.in);
      while(true){
         System.out.println("1. Insert");
         System.out.println("2. Search");
         System.out.println("3. Delete");
         System.out.println("4. Display");
         System.out.println("5. Exit");
         System.out.println("Enter your choice :");
         int op=sc.nextInt();

         switch(op){
            case 1:
               System.out.println("Enter the item to be inserted:");
               String inp=sc.next();
               list.add(inp);
               System.out.println("Inserted successfully");
               break;

            case 2:
               System.out.println("Enter the item to search:");
               String search=sc.next();
               boolean a=list.contains(search);
               if(a){
                  System.out.println("Item found in the list.");
               }
               else{
                  System.out.println("Item not found in the list.");
               }
               break;

            case 3:
               System.out.println("Enter the item to delete:");
               String del=sc.next();
               boolean b=list.contains(del);
               if(b==false){
                  System.out.println("Item does not exist.");
                  break;
```

```
            }
            else
               list.remove(String.valueOf(del));
            System.out.println("Deleted successfully");
            break;

         case 4:
            System.out.println("The Items in the list are :");

            Iterator<String> iterator = list.iterator();
            while (iterator.hasNext()){
               String i = iterator.next();
               System.out.println(i);
            }

         case 5:
            System.out.println("Exiting from program");
            break;

         default:
            System.out.println("Please enter correct option");
            break;
      }
      if(op==5){
         break;
      }
   }
  }
}
```

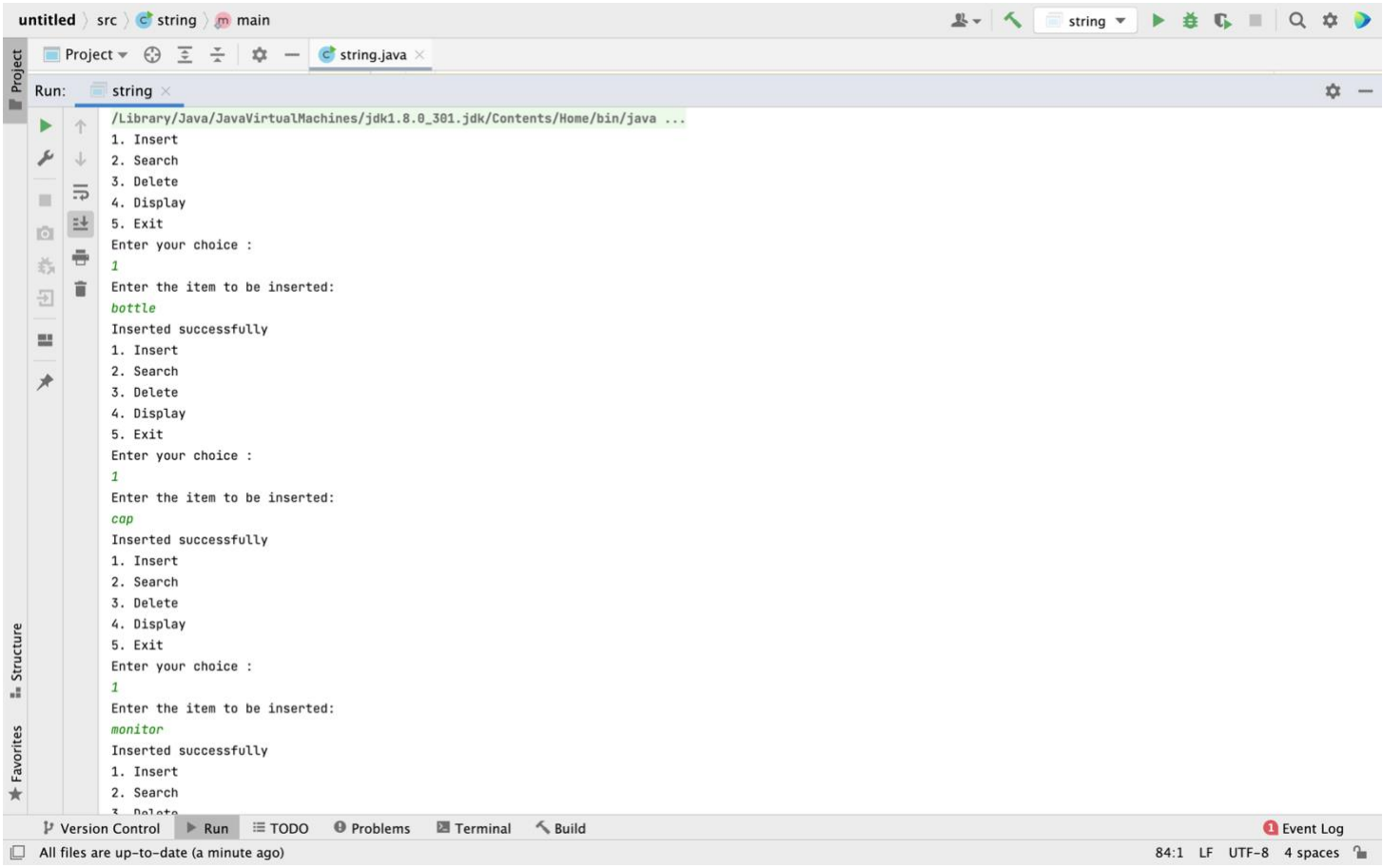
string.java

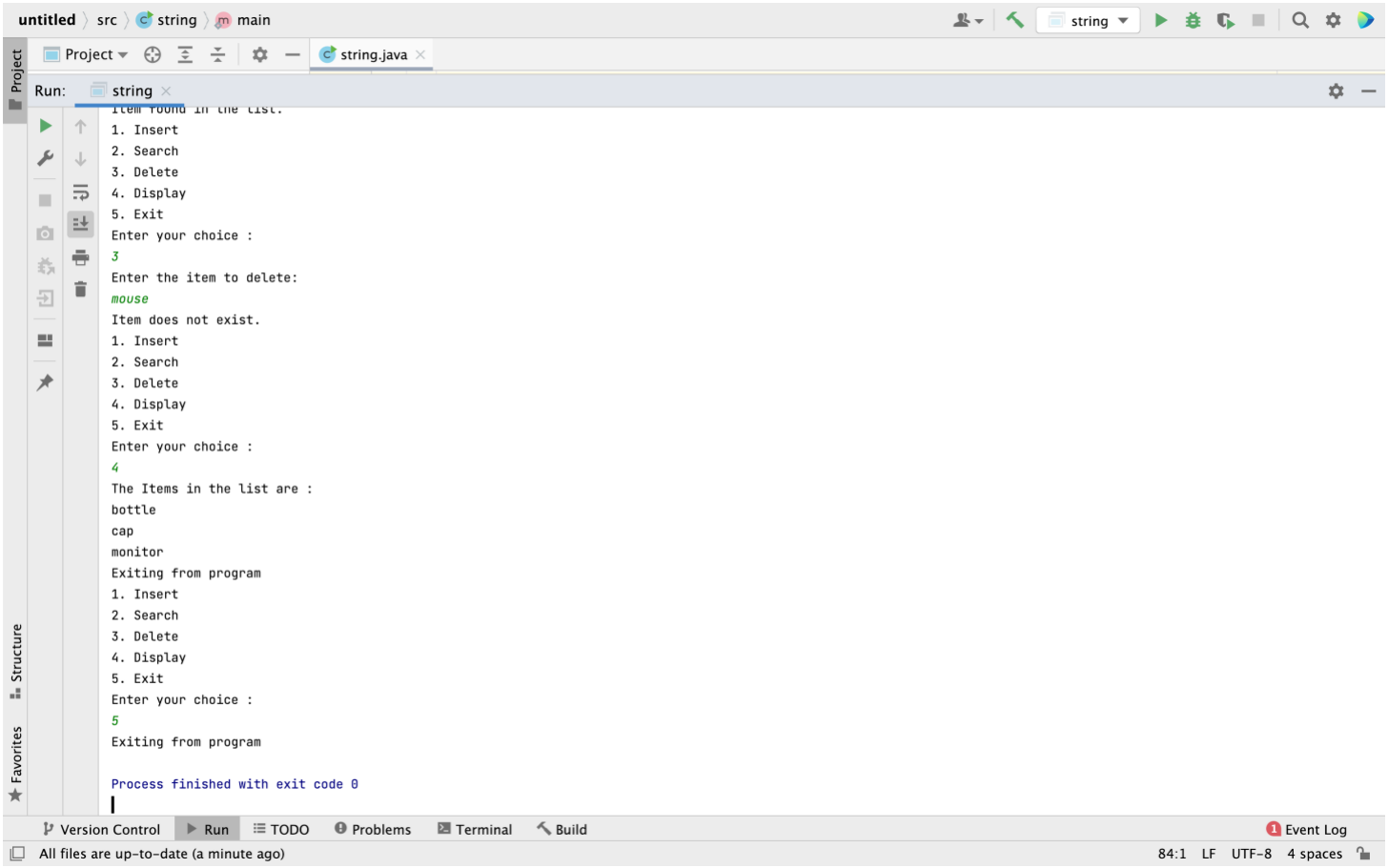
```java
import java.util.*;
class string {
    public static void main(String[] args) {
        ArrayList<String> list=new ArrayList<String>();
        Scanner sc=new Scanner(System.in);
        while(true){
            System.out.println("1. Insert");
            System.out.println("2. Search");
            System.out.println("3. Delete");
            System.out.println("4. Display");
            System.out.println("5. Exit");
            System.out.println("Enter your choice :");
            int op=sc.nextInt();

            switch(op){
                case 1:
                    System.out.println("Enter the item to be inserted:");
                    String inp=sc.next();
                    list.add(inp);
                    System.out.println("Inserted successfully");
                    break;

                case 2:
                    System.out.println("Enter the item to search:");
                    String search=sc.next();
                    boolean a=list.contains(search);
                    if(a){
                        System.out.println("Item found in the list.");
                    }
                    else{
                        System.out.println("Item not found in the list.");
                    }
                    break;

                case 3:
```

string.java

```
36                  System.out.println("Enter the item to delete:");
37                  String del=sc.next();
38                  boolean b=list.contains(del);
39                  if(b==false){
40                      System.out.println("Item does not exist.");
41                      break;
42                  }
43                  else
44                      list.remove(String.valueOf(del));
45                  System.out.println("Deleted successfully");
46                  break;
47
48              case 4:
49                  System.out.println("The Items in the list are :");
50
51                  Iterator<String> iterator = list.iterator();
52                  while (iterator.hasNext()){
53                      String i = iterator.next();
54                      System.out.println(i);
55                  }
56
57              case 5:
58                  System.out.println("Exiting from program");
59                  break;
60
61              default:
62                  System.out.println("Please enter correct option");
63                  break;
64          }
65          if(op==5){
66              break;
67          }
68      }
69  }
70 }
```

OUTPUT:


untitled src string main
string
Project
string.java
Run:
string
/Library/Java/JavaVirtualMachines/jdk1.8.0_301.jdk/Contents/Home/bin/java ...
1. Insert
2. Search
3. Delete
4. Display
5. Exit
Enter your choice :
1
Enter the item to be inserted:
bottle
Inserted successfully
1. Insert
2. Search
3. Delete
4. Display
5. Exit
Enter your choice :
1
Enter the item to be inserted:
cap
Inserted successfully
1. Insert
2. Search
3. Delete
4. Display
5. Exit
Enter your choice :
1
Enter the item to be inserted:
monitor
Inserted successfully
1. Insert
2. Search
Structure
Favorites
Version Control
Run
TODO
Problems
Terminal
Build
Event Log
All files are up-to-date (a minute ago)
84:1 LF UTF-8 4 spaces



Learning outcomes (What I have learnt):

1. I have learnt to use collections.
2. I have learnt to make ArrayList.
3. I have learnt to insert an element in ArrayList.
4. I have learnt to search an element in ArrayList
5. I have learnt to delete an element in ArrayList.
6. I have learnt to diplay elements of ArrayList