Ex No: 4	ARRAY LIST
Date: 16/08/2019	

Aim:

* To create an array of strings and append a string at the end and search for a string to sort a string from array.

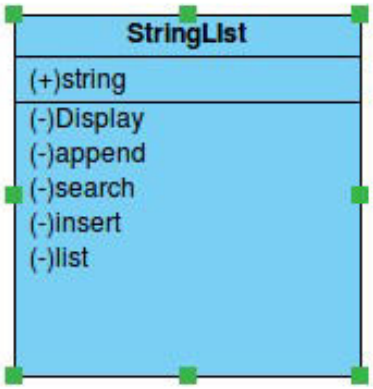
Requirements:

* To add a string to the array at the end.
* To insert a string at particular index.
* To search for a string in array.
* To sort a string with a particular index.

Algorithm:

1. Create a package stringcollection.
2. Create a class StringList.
3. Declare array of string structure.
4. Define the requirement in different cases.
5. Declare case(1) for appending a string to the array.
6. Declare case(2) for inserting a string at a particular index.
7. Declare case(3) for searching a string.
8. Declare case(4) to display all the strings starts with given letter.
9. Declare case(5) to display all the strings.
10. Stop.

Class Diagram:



Program:

```
/*
 * This program is to maintain the list of strings
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 */

package stringcollection;

import java.util.*;

public class StringList {

	public static void main(String[] args) {
		int option;
		String n;
		int index,i;
		String a;
		Scanner sc=new Scanner(System.in);
		ArrayList<String> nums;


		nums=new ArrayList<String>();

		while(true)
		{
			System.out.println("1. To add a string at the end");
			System.out.println("2. To insert a string at particular
index");
			System.out.println("3. To search for a string");
			System.out.println("4. To display all the strings starts with
a given letter");
			System.out.println("5. To display all the strings");
			System.out.println("6. Exit");
			System.out.print("Enter your choice:");

			option=sc.nextInt();
			switch(option)
			{
			case 1:
				System.out.print("Enter a string:");
				n=sc.next();
				nums.add(n);
				System.out.println("The given string is added at the
end");
				break;
			case 2:
```

```
                        System.out.print("Enter a string:");
                        n=sc.next();
                        System.out.print("Enter the index:");
                        index=sc.nextInt();
                        nums.add(index,n);
                        System.out.println("The given string is added at the
given index");
                        break;
                  case 3:
                        System.out.print("Enter a string:");
                        n=sc.next();
                        index=nums.indexOf(n);
                        if(index<0)
                        {
                              System.out.println("The given string is not
available in the list");
                        }
                        else
                        {
                              System.out.printf("The string %s is found at the
index %s\n",n,index);
                        }
                        break;
                  case 4:
                        System.out.println("Enter a letter:");
                  a=sc.next();

                  for(i=0;i<nums.size();i++)
                  {
                      if(nums.get(i).startsWith(a))
                      {
                          System.out.println(nums.get(i));
                      }
                  }
                  break;
                  case 5:
                        System.out.println("The available strings are:");
                        for(i=0;i<nums.size();i++)
                        {
                              System.out.println(nums.get(i));
                        }
                        break;
                  case 6:
                        System.out.println("Thankyou for using string list
application !!!");
                        break;
                  default:
                        System.out.println("Please enter a valid number !!!");
                  }

                  if(option==6)
                  {
                        break;
                  }
            }
```

```
        }
}
```

Output:

```
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
6. Exit
Enter your choice:1
Enter a string:sarathi
The given string is added at the end
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
6. Exit
Enter your choice:1
Enter a string:suriya
The given string is added at the end
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
6. Exit
Enter your choice:1
Enter a string:sugu
The given string is added at the end
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
6. Exit
Enter your choice:1
Enter a string:sakthi
The given string is added at the end
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
6. Exit
Enter your choice:2
Enter a string:tamil
Enter the index:2
The given string is added at the given index
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
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6. Exit
Enter your choice:3
Enter a string:sugu
The string sugu is found at the index 3
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
6. Exit
Enter your choice:4
Enter a letter:
s
sarathi
suriya
sugu
sakthi
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
6. Exit
Enter your choice:5
The available strings are:
sarathi
suriya
tamil
sugu
sakthi
1. To add a string at the end
2. To insert a string at particular index
3. To search for a string
4. To display all the strings starts with a given letter
5. To display all the strings
6. Exit
Enter your choice:6
Thankyou for using string list application !!!
```

Result:

* Thus, the Java program to create ArrayList using StringList is written and executed successfully.