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:
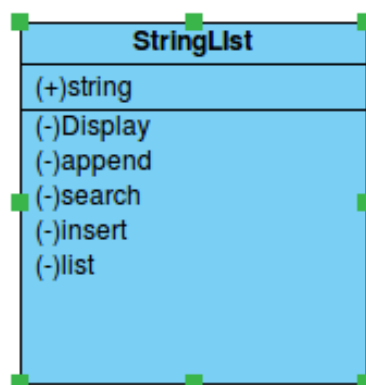
PROGRAM:

```java
/*
/*created by:
aharish.m
 */

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);
```

```java
				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 an string at the end
2. To insert an string at particular index
3. To search for a string
4. To display all the string
5. To List all string starts with given letter
6. Exit
Enter your choice:1
Enter a string:aharish
The given string is added at the end
1. To add an string at the end
2. To insert an string at particular index
3. To search for a string
4. To display all the string
5. To List all string starts with given letter
6. Exit
Enter your choice:1
Enter a string:lokesh
The given string is added at the end
1. To add an string at the end
2. To insert an string at particular index
3. To search for a string
4. To display all the string
5. To List all string starts with given letter
6. Exit
Enter your choice:2
Enter a string:vijay
Enter the index:2
The given string is added at the given index
1. To add an string at the end
2. To insert an string at particular index
3. To search for a string
4. To display all the string
5. To List all string starts with given letter
6. Exit
Enter your choice:3
Enter a string:aharish
The string aharish is found at the index 0
1. To add an string at the end
2. To insert an string at particular index
3. To search for a string
4. To display all the string
5. To List all string starts with given letter
6. Exit
Enter your choice:4
The available string are:

aharish
lokesh
vijay
1. To add an string at the end
2. To insert an string at particular index
3. To search for a string
4. To display all the string
5. To List all string starts with given letter
6. Exit
Enter your choice:5
enter string starting letter
a
aharish
1. To add an string at the end
2. To insert an string at particular index
3. To search for a string
4. To display all the string
5. To List all string starts with given letter
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.