

Assignment ~ 4

1] Explain the different ways of constructing an ArrayList?

Ans:

```
import java.util.*;  
class ArrayList  
{  
    public static void main(String args[])  
    {  
        ArrayList<String> alist = new ArrayList<String>();  
        alist.add ("John");  
        alist.add ("Sam");  
        alist.add ("Tom");  
        alist.add ("Lucky");  
    }  
}
```

II displaying Elements.

```
System.out.println(alist);
```

II Adding "Tina" at the fourth position

```
alist.add (3, "Tina");
```

II displaying elements.

```
System.out.println (alist);
```

O/P :

[John, Sam, Tom, Lucky]

[John, Sam, Tom, Lucky, Tina].

2) How do you increase the current capacity of an ArrayList?

ensureCapacity() method is used to increase the current capacity of a ArrayList is automatically increased when we try to add more element than the current capacity to manually increase the current capacity ensureCapacity() method is used.

→

imp. java.util :

class ArrayList

{

 public static void main (String args[])

{

 ArrayList< Integer > numbers = new ArrayList<

 < Integer > c;

 // now the capacity of the ArrayList number is 10.

 numbers.ensureCapacity(15);

 // now the capacity will be 15.

}

.

3) How do you decrease the current capacity of an ArrayList to the current size()?

Trim to size() method is used to trim the current capacity of ArrayList to current size of the ArrayList.

→

imp. java.util :

```
class ArrayList
```

```
{
```

```
    public static void main (String args[])
```

```
{
```

```
        ArrayList < Integer > numbers = new
```

```
            ArrayList < Integer > () ;
```

Now the capacity of the arraylist is 10.

```
        numbers.add (5) ;
```

```
        numbers.add (4) ;
```

```
        numbers.add (3) ;
```

```
        numbers.add (9) ;
```

```
    numbers.trimToSize () ;
```

Now the capacity will be 4.

```
}
```

Q] How do you find the no. of elements present in the arraylist.

Using size () method returns no. of elements present in an arraylist.

→ Import java.util. :

```
import java.util.List ;
```

```
public class nemo,
```

```
{
```

```
public static void main (String args []).
```

```
{
```

```
ArrayList alist = new ArrayList () :
```

```
alist.add ("Apple");
```

```
alist.add ("Tiger");
```

```
alist.add ("Rose");
```

```
alist.add ("Ant");
```

```
System.out.println ("The size of the  
ArrayList is : " + alist.size ());
```

```
}
```

```
}.
```

Output :

The size of the ArrayList is : 4.

Q] How do you find out whether the given ArrayList is empty or not .

Empty() method of ArrayList is used to check whether the given ArrayList is empty or not . This method returns true if an ArrayList contains no elements otherwise return false .

```
import java.util *;
```

```
public class ArrayList {
```

```
public static void main (String args []).
```

```
{
```

```
ArrayList <String> list = new ArrayList () System.  
out.println (list.isEmpty ()).
```

```
// return list.add ("A").
```

```
system.out.println(list.isEmpty());  
    || false list.clear();  
system.out.println(list.isEmpty());  
{  
}
```

Output:

True
False
True.

- 6) How do you check whether the given element is present in arraylist or not?

Using contains() method of ArrayList, we can examine whether the arraylist contains the given element or not. This method return true if element is otherwise return False.

→ import java.util.*;

```
class ArrayList {  
    public static void main (String args [])  
{
```

```
ArrayList <String> list = new ArrayList <> c :
```

```
list.add ("A");  
list.add ("B");  
list.add ("C");  
list.add ("D");
```

```
System.out.println (list.contains ("A")) .
```

System.out.println(list.contains("z")).

{

}

o/p

True.

False.

Q] How do you get the position of a particular elements in an arraylist.

We can use indexof() & lastindexof methods to find the posn of a given element in an arraylist. indexof() method returns index of first occurrence of a specified elements where as lastindexof() returns index of last occurrence of a specified element in an arraylist. If element is not found they will return -1.

→ import java.util.*;

class ArrayList .

{

public static void main(String args) .

{

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

list.add("Apple");

list.add("Banana")

list.add("John")

list.add("Sam")

list.add("Tina")

System.out.println("The index of the element Apple").

```
list. indexof ("Apple");
```

```
}
```

Output :

The index of the element

Apple : 1.

8) How do you convert an ArrayList to array

Using toArray () method of ArrayList class to array () method returns an array containing all elements of the ArrayList. This method act as a bridge betw normal arrays & collection framework in java

```
import java.util.*;
```

```
class ArrayList {
```

```
public static void main (String args []) {
```

```
.
```

```
ArrayList < String >. list = new ArrayList < > ();
```

```
list.add ("A");
```

```
list.add ("B");
```

```
list.add ("C");
```

```
list.add ("D");
```

If convert to arrays array.

```
Array [ ] array = list.toArray ();
```

System.out.println(Arrays.toString(array));

|| Iterate & convert to desired type.

for (Array i : A : array) || for each loop.
{

String s = (String) o;

System.out.println(cs);

g.

Output:

{A, B, C, D}

A

B

C

D.

Q] How do you retrieve an element from a particular posⁿ of an ArrayList?

Get() method returns an element from an ArrayList
This method takes index of the element as an argument.

→ import java.util.*;

class ArrayList {

public static void main (String args[]) .

{ .

ArrayList<String> list = new ArrayList<
<> arrays, aslist.

c "alex", c "John" "dough", "Sam")

```
string first name = list.get(0);  
string 3rd name = list.get(2);  
  
System.out.println(1st name);  
System.out.println(3rd name);  
{  
}  
{.
```

Output :

alex
dough.

Q) How do you replace a particular element in an arraylist with the given element?

Set() method replaces a particular element in an arraylist with the given element.

This method takes two arguments one is the index of the element to be replaced & another one is element to be placed at that posn.

Ans. import java.util *;

class ArrayList {

public static void main (String args []) {

{

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

Date: / /

```
list.add ("EVS");
list.add ("osy");
list.add ("Java");
list.add ("oop");
```

```
System.out.println (list);
list.set (2 "c++");
System.out.println (list);
}
}.
```

Output:

```
[EVS, osy, JAVA, oop].
[EVS, osy, c++, oop].
```

d) How do you open an element at the end of an ArrayList?

add () method appends an element at the end of an ArrayList.

Output:

```
Javac Add.java.
Java Add.
```

White	Red
Black	pink
Blue	yellow

Q2] How do you insert an element at a particular posn. of an ArrayList?

add () method which takes index & an element as arguments can be used to insert an element at a particular posn of an ArrayList. The elements at the right side of that posn are shifted one posn right i.e. Indice posn are increased by 1.

→ import . java . util * ;

class add {

 public static void main (String args ()) {

}

 ArrayList < Integer > list = new ArrayList () :

 list . add (15) ;

 list . add (22) ;

 list . add (30) ;

 list . add (40) ;

 // Add element 35 at fourth posn list . add (3, 35);

 // add (index, element)

 System . out . println (list) ;

}

}

Output :

javac Add . java .

java Add .

[15, 22, 30, 35, 40]

Q] How do you remove an element from a particular posn. of an arraylist?

Remove () method which takes int type as an argument is used to remove an element from a particular posn of an ArrayList.

→ import . java. util. * ;

class Remove

{

public static void main (String args)

{

ArrayList < String > list = new ArrayList

< String > (Arrays.asList ("John", "Sam", "Tim"
,"Sima")) .

But System.out.println (list);

|| list size is 4.

|| remove element from arraylist 1st posn.

list.remove (1);

System.out.println (list);

|| list size is 3

{

{

Output :

[John , sam , Tim , Sima]

[John , Tim , Sima] .