

II Explain the different ways of Constructing an ArrayList ?

```
import java.util.*;  
public class ArrayList_Example {  
    public static void main (String args []) {  
        ArrayList < String > list = new ArrayList < String > ();  
        list.add ("Mango");  
        list.add ("Apple");  
        list.add ("Banana");  
        list.add ("Grapes");  
        System.out.println (list);  
    }  
}
```

O/P :

[Mango , Apple, Banana, Grapes]

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

```
import java.util.ArrayList;  
public class Main {  
    public static void main (String args[]) {  
        ArrayList<String> al = new ArrayList<String>();  
        al.add ("C");  
        al.add ("A");  
        al.add ("E");  
        al.add ("Java2s.com");  
        al.add ("D");  
        al.add ("F");  
        al.add (1, "Java2s.com");  
        System.out.println (al);  
        System.out.println (al.size());  
        al.ensureCapacity (100);  
        System.out.println (al.size());  
    }  
}
```

Output :

```
[C, Java2s.com, A, E, Java2s.com, D, F]
```

Q] How do you decrease the current capacity of an ArrayList to the current size.

Package beginnerbook.com ;

import java.util.ArrayList ;

5 public class TrimExample {

public static void main (String args[])

{

ArrayList < Integer > arrayList = new ArrayList<
< Integer > (50);

10 arrayList.add (1);

arrayList.add (2);

arrayList.add (3);

arrayList.add (4);

arrayList.add (5);

15 arrayList.add (6);

arrayList.add (7);

arrayList.add (8);

arrayList.add (9);

arrayList.add (10);

arrayList.add (11);

20 arrayList.trimToSize();

System.out.println (arrayList);

}

Output : [1, 2, 3, 4, 5, 6, 7, 1, , ,]

25

Q] How do you find the number of elements present in an ArrayList ?

```
import java.util.ArrayList ;  
public class ArrayList {  
    public static void main (String [] args) {  
        System.out.println ("Welcome to the Java  
5 program to find the length of array list");  
    }  
}
```

```
ArrayList < String > listOfBanks = new ArrayList ();  
int size = listOfBanks.size();
```

```
10 System.out.println ("Size of array list after  
creating : " + size);
```

```
listOfBanks.add ("citibank");
```

```
listOfBanks.add ("chase");
```

```
15 listOfBanks.add ("bank of America");  
size = listOfBanks.size();
```

```
System.out.println ("length of ArrayList after  
adding elements : " + size);
```

```
20 listOfBanks.clear();
```

```
size = listOfBanks.size();
```

```
System.out.println ("size of ArrayList after  
clearing elements : " + size);
```

```
} }
```

25 Output :

```
Welcome to Java program to find length of ArrayList  
the size of array list after creating : 0  
the length of array list of after adding element : 3  
the length of ArrayList after clearing element : 0
```

5) How do you find out whether the given arraylist is empty or not?

```

import java.util.ArrayList;
public class GFG {
    public static void main (String[] args)
    {
        ArrayList < Integer > arr = new ArrayList
            < Integer > (10);
        boolean ans = arr.isEmpty();
        if (ans == true)
            System.out.println ("The arraylist is empty");
        else
            System.out.println ("The arraylist is not empty");
        arr.add (1);
        ans = arr.isEmpty();
        if (ans == true)
            System.out.println ("The arraylist is empty");
        else
            System.out.println ("The arraylist is not empty");
    }
}

```

25) output

ArrayList is empty

The arraylist is not empty.

How do you check whether the given element is present in an arraylist or not?

```
import java.util.ArrayList;  
import java.util.List;  
public class Demo {  
    public static void main (String args[])
```

```
List alist = new ArrayList();
```

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

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

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

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

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

```
System.out.println ("The element C is available in ArrayList ? " + alist.
```

```
contains ("C"));
```

```
System.out.println ("The element Z is available in ArrayList ? " + alist.contains  
("Z"));
```

```
}
```

```
}
```

Output

The element C is available in ArrayList?

True

The element Z is available in ArrayList? False

7) How do you get the position of a particular element in an arraylist?

import java.util.ArrayList;

import java.util.List;

public class Demo {

public static void main (String args[])

List alist = new ArrayList();

alist.add ("Orange");

alist.add ("Apple");

alist.add ("Peach");

alist.add ("Guava");

alist.add ("Mango");

System.out.println ("The index of
element Apple in ArrayList : " + alist.

indexof ("Apple"));

}

}

20 output :

The index of element apple in ArrayList : 1

8) How do you convert an ArrayList to Array?

```
import java.util.ArrayList;  
import java.util.Arrays;  
  
public class Arrayhist {  
    public static void main (String args [])  
    {  
        ArrayList<String> list = new ArrayList<> (2);  
        list.add ("A");  
        list.add ("B");  
        list.add ("C");  
        list.add ("D");  
    }  
}
```

```
object [] array = list.toArray ();  
System.out.println (Arrays.toString (array));  
for (Object o : array) {  
    String s = (String) o;  
    System.out.println (s);  
}  
}

```
object [] array = list.toArray ();
System.out.println (Arrays.toString (array));
for (Object o : array) {
 String s = (String) o;
 System.out.println (s);
}
}
```


```

20 output

[A , B , C , D]

A

B

C

D

9) How do you retrieves an element from a particular position of an ArrayList?

```
import java.util.ArrayList;  
import java.util.Arrays;  
public class ArrayList  
{  
    public static void main (String args [])  
    {  
        ArrayList < String > list = new ArrayList <>  
            (Arrays.asList ("alex", "brian",  
                "charless", "dough"));  
  
        String firstName = list.get(0);  
        String secondName = list.get(1);  
  
        System.out.println (firstName);  
        System.out.println (secondName);  
    }  
}
```

Output: alex
brian

10) How do you replace a particular element in an arrayList with the given element?

```
import java.util.ArrayList;
import java.util.List;
public class ArrayList {
    public static void main(String args[]) {
        5
        List<String> top5Books = new ArrayList<String>();
        top5Books.add("Clean Code");
        top5Books.add("Clean Coder");
        top5Books.add("Effective Java");
        top5Books.add("Head First Java");
        top5Books.add("Head First Design");
    }
}
```

```
10
System.out.println("ArrayList before replace:");
    + top5Books);

```

```
15
top5Books.set(1, "Introduction to Algorithms");
System.out.println("ArrayList after replace:");
    + top5Books);

```

3
J

O/P:

```
20
ArrayList before replace:[clean code,
clean coder, effective Java, Head
first Java, Head first design]
```

```
25
ArrayList after replace:[clean code,
introduction to algorithm, effective Java,
Head first Java, Head first design]
```

Q) How do you append an element at the end of the array list ?

```
import java.util.*;  
public class ArrayList {  
    public static void main (String args[])  
    {  
        new  
        ArrayList<String> names = ArrayList <String>();  
  
        System.out.println ("initial size "+  
                           name.size());  
        name.add ("Amy");  
        name.add ("Bob");  
        name.add ("Cindy");  
        System.out.println ("new size "+  
                           name.size());  
  
        for (int j=0 ; j< names.size(); j++)  
            System.out.println ("element " + j + " : "  
                               names.get(j));  
    }  
}
```

y

y

Q How do you insert an element at a particular position of an arraylist.

```
package com.tutorialspoint;  
import java.util.ArrayList;  
public class ArrayList {  
    public static void main(String args[]) {  
        ArrayList<Integer> arrlist = new ArrayList<Integer>(5);  
        arrlist.add(15);  
        arrlist.add(22);  
        arrlist.add(30);  
        arrlist.add(40);
```

```
arrlist.add(2, 25);  
for (Integer number : arrlist) {  
    System.out.println("Number = " + number);  
}
```

```
}
```

Number = 15

Number = 22

Number = 25

Number = 30

Number = 40

Q13) How do you remove an element from a particular position of an ArrayList?

```
public class ArrayList  
{  
    public static void main (String args[])  
    {  
        ArrayList<String> nameslist = new ArrayList<  
            <String>> (Arrays.asList ("alex",  
            "brian", "charless"));  
  
        System.out.println (nameslist);  
        nameslist.remove(1);  
        System.out.println (nameslist);  
    }  
}
```

Output : [alex, brian, charless]
[alex, charless]

Q14) How do you remove the given element from an ArrayList?

```
import java.util.List;  
import java.util.ArrayList;  
public class GFG  
{  
    public static void main (String [] args)  
    {  
        List < Integer > al = new ArrayList < >();
```

al.add(10);
al.add(20);
al.add(30);
al.add(1);
al.add(2);
al.remove(1);
al.remove(1);
System.out.println("Modified ArrayList")

y

y o/p:

Modified ArrayList is: [10, 1, 2]

Q15) How do you remove all elements of an arraylist at a time?

```
import java.util.ArrayList;  
public class Q15 {  
    public static void main(String args[]){  
        ArrayList<String> list = new ArrayList<String>();
```

list.add("Geeks");

list.add("for");

list.add("Geeks");

list.add("Gaurav");

```
System.out.println("ArrayList : " + list);
```

```
System.out.println(" size of ArrayList = "  
    + list.size());
```

```
list.clear();
```

```
System.out.println("\n After clear\n"  
    + "ArrayList : " + list);
```

```
System.out.println(" size of ArrayList : "  
    + list.size());
```

```
}  
}
```

O/P : ArrayList = 4 size of ArrayList : 4
After clear

ArrayList : []

size of ArrayList = 0



How do you retrieve a portion of an ArrayList ?

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

```
public class GFGI {
```

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

throws exception

arrlist.add("D");

arrlist.add("E");

System.out.println("original arrlist:"
+ arrlist);

5 List<String> arrlist2 = arrlist.sublist
(2, 4);

System.out.println("sublist of arrlist"
+ arrlist2);

}

10 catch (IndexOutOfBoundsException e) {

}

System.out.println("Exception thrown:" + e);

}

catch (IllegalArgumentException e) {

15 System.out.println("Exception thrown:" + e);

}

}

}

17 How do you join two arraylist?

import java.util.*;

public class GFD {

20 public static void main { String args[] }

{

ArrayList<String> list1 = new ArrayList<String>();

list1.add("Geeks");

list1.add("for");

list1.add("forGeeks");

Q) System.out.println (" ArrayList 1 :" + list1);

ArrayList <String> list2 = new ArrayList<String>();

list2.add ("GeeksforGeeks")

list2.add ("A Computer portal");

System.out.println (" ArrayList 2 :" + list2);

list1.addAll (list2);

System.out.println (" Joined ArrayLists :" + list1);

Q) How do you insert more than one element at a particular position of an ArrayList?

```
import java.io.*;
import java.lang.*;
import java.util.*;

class GFG {
    public static void main (int [] insertx
                           (int n, int arr [], int x, int pos)
                           {
```

int i;

int newarr [] = new int [n+1];

for (i=0; i<n+1; i++) {

if (i< pos-1)

newarr [i] = arr [i];

else if (i==pos-1)

newarr [i] = x;

else

 newarr[i] = arr[i-1];

}

return newarr;

}

public static void main (String args [])

{

 int n=10;

 int i;

 int arr [] = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };

 System.out.println ("Initial Array :\n" + Arrays.toString (arr));

 int pos x= 50;

 int pos = 5;

 arr = insertx (n, arr, x, pos);

 System.out.println ("Array with " + x + "
 # is inserted at position " + pos
 ":\n" + Arrays.toString (arr));

19)

```
import java.util.*;  
public class allmethods  
{  
    public static void main(String[] args) throws Exception  
    {  
        try  
        {  
            ArrayList<Integer> al = new ArrayList<Integer>(20);  
            al.add(1);  
            al.add(2);  
            al.add(3);  
            al.add(4);  
            System.out.println("added element  
in list "+al);  
            System.out.println();  
            System.out.println();  
            al.ensureCapacity(15);  
            al.add(40);  
            al.add(20);  
        }  
    }  
}
```

System.out.println(" modified
arraylist (ensurecapacity) -> add")

System.out.println();

System.out.println();

al.add(25);

al.trimToSize();

System.out.println("modified

arraylist(trimToSize = " + al);

System.out.println();

System.out.println();

int size = al.size();

System.out.println("size of list"
+ size);

System.out.println();

System.out.println();

(+ al) == null

System.out.println("list is empty = " + al.isEmpty());

System.out.println();

System.out.println();

al.add(10);

al.add(20);

if (al.contains(10))

{ System.out.println ("The element 10 is available in array list"); }

else

{ System.out.println ("The element 10 is not available in array list"); }

else

{ System.out.println ("The element 10 is available in array list"); }

else

{ System.out.println ("The element 10 is not available in array list"); }

if (al.contains(60))

{ System.out.println ("The element 60 is available in the ArrayList"); }

else

{ System.out.println ("The element 60 is not available in the ArrayList"); }

int i=al.indexOf(10);

if (i) = -1

{ System.out.println ("the index of "+ "10 is "+ i); }

else

```
System.out.println("the index of  
of " + "10 is " + i);  
else
```

```
System.out.println("10 is not  
present in " + theList);
```

```
Object[] object = arr.toArray();  
for (Object obj : objects)
```

```
System.out.println(obj + "");  
int retrieved = arr.get(2);
```

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

```
System.out.println("Retrieved element  
is " + retrieved);  
arr.set(2, 55);
```

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

```
System.out.println("printing new  
list: " + arr);
```

```
arraylist1.add ("E1");
arraylist1.add ("E2");
arraylist1.add ("E3");
```

```
System.out.println ("First")
```

```
arraylist = " " + arraylist1;
```

```
ArrayList<String> arraylist2 = new
```

```
ArrayList<String>();
```

```
arraylist2.add ("F1");
arraylist2.add ("F2");
arraylist2.add ("F3");
```

```
arraylist3 = " " + arraylist2;
```

```
System.out.println ("Second")
```

```
arraylist = " " + arraylist3;
```

```
ArrayList<String> aal = new
```

```
ArrayList<String>();
```

```
aal.addAll (arraylist1);
```

```
aal.addAll (arraylist2);
```

```
System.out.println ("Final")
```

```
arraylist = " " + aal;
```

```
a1.clear();
```

empty());
}

Catch (IndexOutOfBoundsException)

{

System.out.println("Exception
thrown: " + e);

}

Catch (IllegalArgumentException)

{

System.out.println("Exception thrown: " + e);

}

}

}