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Assignment - 3

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Java Programming

Implement list interface with arraylist and linked list.

Definition:

Arraylist:

This is a resizable array implementation of the list interface. It provides random access to elements and its efficient for accessing elements by index.

Linked list:

This is a doubly linked list implementation of list interface. It allows the fast insertion and deletion however, accessing elements by index is slower compared to array list.

Syntax:

=> Arraylist <type> arraylist = new list < > ( );

=> linked list <type> linked list = new linked list < > ( );

Code with output:

=> Java program demonstrating how to use both arraylist and linked list to implement the list interface.

```
import java.util.ArrayList;
import java.util.LinkedList;
import java.util.List;
Public class List Example {
  Public static void main (String[] arr ()
{
  List <String> arraylist = new ArrayList <>();
  arraylist.add ("Apple");
  arraylist.add ("Banana");
  arraylist.add ("cherry");
  System.out.println ("ArrayList");
  for (String fruit : arraylist)
    {
      System.out.println(fruit");
    }
List <String> linked list : new linked list <>();
linked list.add ("Dog");
Linked List.add ("elephant");
Linked List.add ("Fox");
System.out.println ("In Linked list");
for (String animal: linked list);
  System.out.println (animal);
}
```

```
arrayList.remove(1);
arrayList.add(1, "BlueBerry");
System.out.println("In modified arrayList");
for (String fruit: arrayList)
System.out.println(fruit);
}
LinkedList.remove("Elephant");
LinkedList.add(10, "Cat");
System.out.println("In modified LinkedList");
for (String Animal: LinkedList)
 {
  System.out.println(animal);
 }
}
}
```

Output:

ArrayList:

Apple, Banana, Cherry

LinkedList:

Elephant, Dog, Fox

modified array list:

Apple, Banana, Cherry

modified LinkedList:

Cat, Dog, Frog