# -Activities.

## 1.

A. O(n^2)
B. O(n)
C. O(n)
D. O(n)

## 2.

A.
[0, 1, 2 , 3 , 3 , 3 , 3, 3 ]

B.
[0, 1 , 2, 3, 3, 4, 5, 6]

## 3.

A.

O(n) – T(n) = n + 4

B.

O(n^3) – T(n) = n^3 + 4

C.

O(n) – T(n) = 3n + 4

D.

O(n) – T(n) = n + 3

## 4.

O(n) =  Sequential Searching
O(1) =  Linear searching
O(n^2) = Binary search
O(n log n) = Merge sort

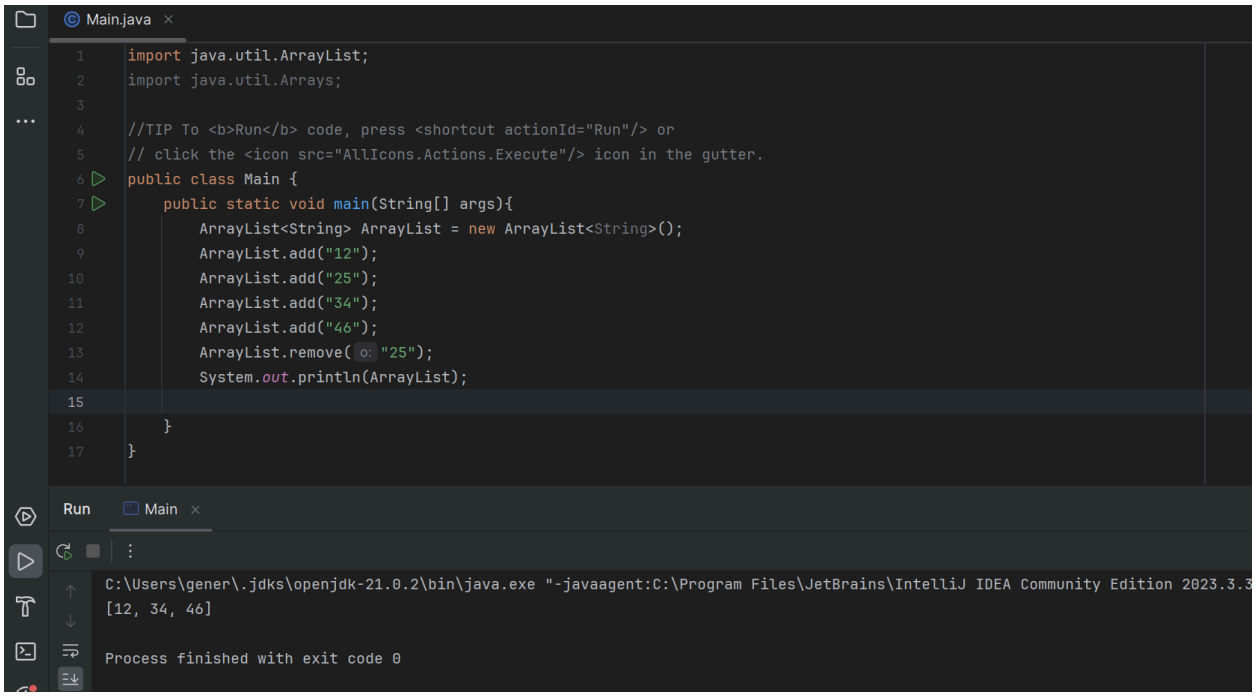
## 5.

Abstract data types (ADT's) are objects/classes that's behavior is defined by the number amount and the amount of operations it's given.
Uses are:
-List data type
-Stack data type
-Queue data type

## 6.

| Lists | Arraylist |
| --- | --- |
| Is an interface | Is a class |
| Stores data in a sort of list(Like a shopping list). | Can be used to make an array ,easily changing, inserting or removing inputs. |
| | |

7.


Main.java
import java.util.ArrayList;
import java.util.Arrays;
//TIP To Run code, press <shortcut actionId="Run"/> or
// click the <icon src="AllIcons.Actions.Execute"/> icon in the gutter.
public class Main {
public static void main(String[] args){
ArrayList<String> ArrayList = new ArrayList<String>();
ArrayList.add("12");
ArrayList.add("25");
ArrayList.add("34");
ArrayList.add("46");
ArrayList.remove( o: "25");
System.out.println(ArrayList);
}
}
Run
Main
C:\Users\gener\.jdks\openjdk-21.0.2\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.3
[12, 34, 46]
Process finished with exit code 0