**ArrayListExercise**

1.

1. O(n^2)
2. O(n)
3. O(n^2)
4. O(n^2)

2.

First loop:  
anArray = {0, 1, 2, 3, 3, 4, 5, 7}

Second loop:

anArray = [0, 1, 2, 3, 3, 4, 5, 6}

3.

1. T(n)=1+(2n)+1=2n+2, O(n)
2. T(n)=O(rl×c2×cl×4), O(rl×c2×cl)
3. T(n)=2n+2n+2n=6n, O(n)
4. T(n)=O(log2​(n)), O(log2​(n))

4. O(log n) - Binary Search

5. Abstract data type is a collection of codes and methods that only shows for the user to pick from, but not implement to the actual code. Implementations like Stack, Queue, and List.

6.

| Array List | List |
| --- | --- |
| The implementation of the list | Behaviour of a data structure |
| Can be use dynamically | Can be used in different data structures |
| Higher memory | Lower memory |
| Shows less options of methods | shows many different options of methods |

7.

import java.util.ArrayList;

import java.util.Arrays;

public class test {

public static void main(String[] args) {

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

Integer[] elementsToAdd = {12,25,34,46};

arrayList.addAll(Arrays.asList(elementsToAdd));

System.out.println(arrayList);

int element\_remove = arrayList.indexOf(25);

arrayList.remove(element\_remove);

System.out.println(arrayList);

}

}

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