

Lec 12

ArrayList, Big O



```
import java.util.Scanner;
public class iPhone{
    public static void main(String[] args) {
        String[] contacts = new String[2];
        addContacts (contacts);
        System.out.println(contacts[0]);
    }
    public static void addContacts(String[] contacts) {
        Scanner scnr = new Scanner(System.in);
        int i = 0;
        String s;
        while(true) {
            System.out.print("enter name (Quit to exit): ");
            s = scnr.next();
            if(s.equals("Quit")) {
                break;
            }
            else {
                contacts[i] = s;
                i++;
            }
        }
    }
}
```

Run with: Adam Ali Uma Quit

- A) Compiler error
- B) Adam
-  C) Runtime error
- D) Infinite loop
- E) null

ArrayList

```
import java.util.ArrayList;
```

```
ArrayList<type> name = new ArrayList<type>();
```

```
name.add(element);
```

```
element = name.get(index);
```

```
size = name.size();
```

```
import java.util.Scanner;
import java.util.ArrayList;
public class Ex3 {
    public static void main(String[] args) {
        ArrayList<String> students = new ArrayList<String>();
        getStudents(students);
        System.out.println(students.get(0));
    }
    public static void getStudents(ArrayList<String> students) {
        Scanner scnr = new Scanner(System.in);
        String s;
        while(true) {
            System.out.print("enter name (Quit to exit): ");
            s = scnr.next();
            if(s.equals("Quit")) {
                break;
            }
            else {
                students.add(s);
            }
        }
    }
}
```

Run with: Adam Ali Uma Quit

- A) Compiler error
- ➡ B) Adam
- C) Runtime error
- D) Infinite loop

Algorithms

What is the order of the for loop?

```
for(int i = 0; i<n; i++) {  
    k = k+5;  
}
```

- A) $O(k)$
- B) $O(i)$
-  C) $O(n)$
- D) $O(n * \text{constant})$
- E) $O(k * n)$

What is the order of the for loop?

```
for(int i = 0; i<n; i++) {  
    for(int j = 0; j<i; j++) {  
        k = k + i + j;  
    }  
}
```

- A) $O(n)$
- B) $O(n^2)$
- C) $O(\text{constant} * n^2)$
- D) $O(i * j)$
- E) None of the above

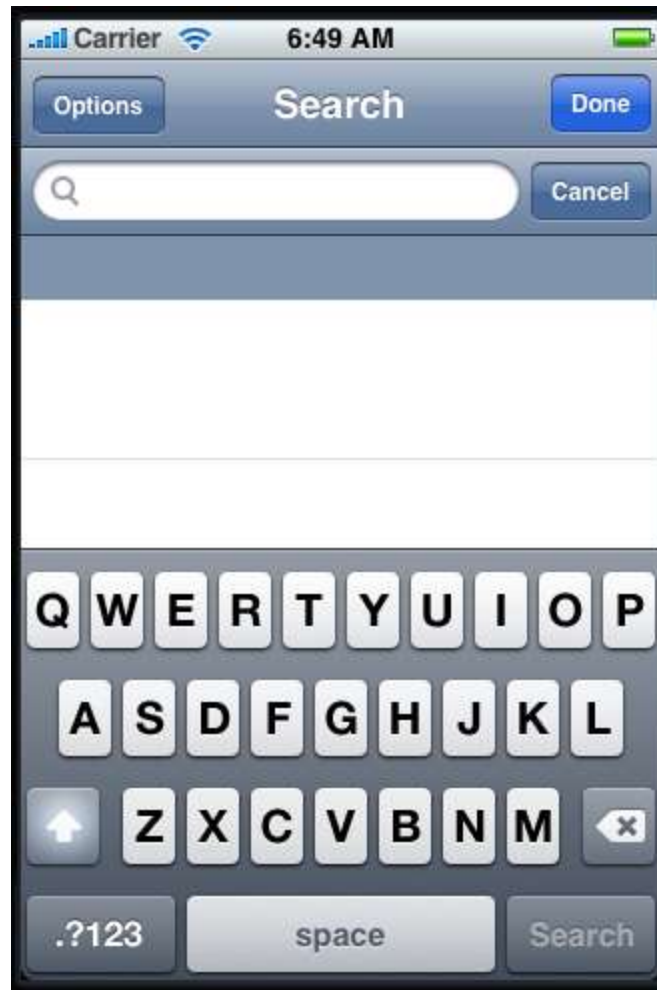
What is the order of the program?

```
for(int i = 0; i<10; i++) {  
    k = k + 4;  
}
```

```
for(int i = 0; i < n; i++)  
    for(int j = 0; j<20; j++) {  
        k = k + i + j;  
    }  
}
```

- A) $O(n)$
B) $O(10 + n)$
C) $O(10 + 20n)$
D) $O(20n)$
E) None of the above

Search



Search

String staff =

{adam, hubert, bryan, andy, jerry, spencer, aaron, neil}