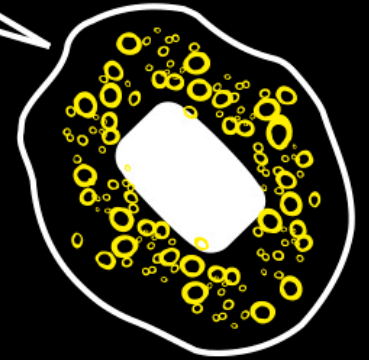
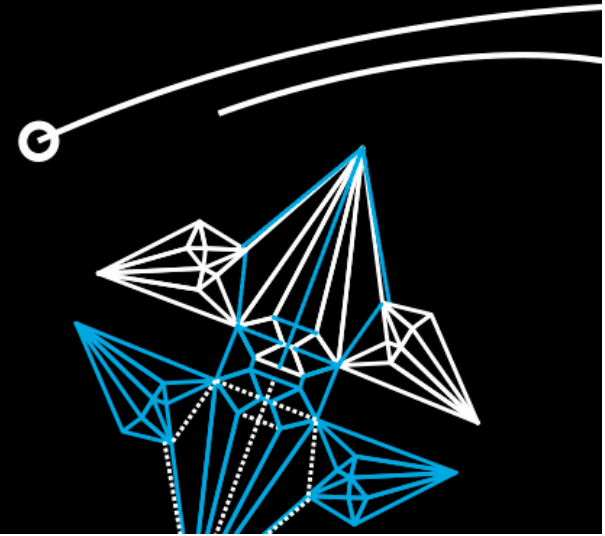


UNIVERSITY OF TWENTE.



Module 2 Programming Q&A Arrays and Lists

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WHAT WILL HAPPEN WITH THIS FRAGMENT?

```
public static void main (String [] args) {  
    int [] a = new int [26];  
    for (int i = 0; i <= a.length; i++) {  
        a[i] = 0;  
    }  
}
```

- a. All elements of the array set to 0
- b. Complains that array not initialised
- c. Error: nullpointer exception
- d. Error: array index out of bounds exception

WILL THIS COMPILE?

```
int [] b = new int [2];  
b[0] = 1;  
b[1] = "1";
```

- a. Yes, and it will work fine
- b. No, because "1" and 1 are of different types
- c. Yes, but execution will throw an error
- d. No, because the index is out of bounds

WILL THIS COMPILE?

```
Object [] b = new Object [2];
```

```
b[0] = 1;
```

```
b[1] = "1";
```

- a. Yes, and it will work fine
- b. No, because "1" and 1 are of different types
- c. Yes, but execution will throw an error
- d. No, because the index is out of bounds

WHAT WILL HAPPEN?

```
List<String> b = new ArrayList<String>(4);  
b.add("y");  
b.add("x");  
System.out.println(b.size());
```

- a. Print 2
- b. Print 4
- c. Does not compile
- d. Print null

WHAT WILL HAPPEN?

```
String[] b = new String [4];  
b[0] = "y";  
b[1] = "x";  
System.out.println(b.length);
```

- a. Print 2
- b. Print 4
- c. Does not compile
- d. Print null

WHAT WILL HAPPEN?

```
String[] b = new String [4];
```

```
b[0] = "y";
```

```
b[1] = "x";
```

```
b[2] = "z";
```

```
System.out.println(b[3]);
```

- a. Print 2
- b. Print 4
- c. Does not compile
- d. Print null

WHAT WILL HAPPEN?

```
public static void main (String [] args) {  
    int [] a = new int [26];  
    for (int i = -1; i < a.length -1; i++) {  
        a[i + 1] = 0;  
    }  
}
```

- a. All elements of the array set to 0
- b. Complains that array not initialised
- c. Error: nullpointer exception
- d. Error: array index out of bounds exception

WHAT IS A GOOD POSTCONDITION

```
public static void main (String [] args) {  
    int [] a = new int [26];  
    for (int i = 0; i < a.length; i++) {  
        a[i] = 0;  
    }  
}
```

- a. ensures (\forall int j; $0 \leq j \ \&\& \ j < a.length; a[j] == 0$);
- b. ensures (\exists int j; $0 \leq j \ \&\& \ j < a.length; a[j] == 0$);
- c. ensures (\forall int j; $0 \leq j \ \&\& \ j \leq a.length; a[j] == 0$);
- d. ensures (\exists int j; $0 \leq j \ \&\& \ j \leq a.length; a[j] == 0$);