

COMP 248 - Tutorial #11

Arrays

Question 1: What will be the output of the following code?

A)

```
class Parray1{
    public static void main(String[] args)
    {
        int i;
        int a[] = {5, 2, 3, 1, 1, 0, 2, 1, 0, 1};
        for (i = 0; (i < 10); i++)
        {
            if (a[i] == 0)
                break;
            if (i % 3 == 0)
                continue;
            System.out.println("a[" + i + "]: " + a[i]);
        }
    }
}
```

B)

```
class Parray2{
    public static void main(String[] args)
    {
        int[] data = {1,3,5,8,11,15};
        int sum = 0;
        for(int i = 1; i < data.length; ++i) {
            sum = sum + data[i] - data[i-1];
            System.out.println("sum = " + sum);
        }
    }
}
```

C)

```
class Parray3 {

    static int sumIf (int[] a, boolean[] b) {
        int sum = 0;
        for (int i = 0; i < a.length; ++i)
            if(b[i])
                sum = sum + a[i];
        return sum;
    }

    public static void main(String[] args)
    {
        int[] data = {1, 2, 3, 4, 5, 6, 7};
        boolean[] filter = {true, false, true, true, false, true, true};
        System.out.println("data:" + sumIf(data, filter));
        for(int i = 0; i < filter.length; ++i)
            filter[i] = !filter[i];
        System.out.println("data:" + sumIf(data, filter));
    }
}
```

Question 2: Write a method called `clearArray` that has one parameter which is an array of `int` values. When it is called it will set all the elements of the array to zero.

Question 3: Write a method called `sum2` that has two parameters called `row` and `n`. `row` is an array of floating-point numbers; `n` is an integer which will be greater than or equal to 0. The method will return the sum of the first `n` elements of the array `row`.

Question 4: Assume the following class:

```
public class Airplane {
    private int nbOfPassengers;
    private double weight;
    private int maxSpeed;

    public double getWeight() {
        return weight;
    }
    public int getMaxSpeed() {
        return maxSpeed;
    }
}
```

A) Write a static method called `getAverageWeight()` that takes an array of `Airplanes` as parameter and computes and returns the average weight of the airplanes in the array.

B) Write a static method called `findFasterAirplane()` that takes an array of `Airplanes` as parameter and returns the fastest airplane in the array. If several airplanes have the same maximum speed, return null.

Question 5: Write a main method to display a histogram for the marks of students in a class of 20 students. The marks of a student will be store in an array called `marks` and each element of this array will be an integer between 0 and 9 (inclusively).

The histogram will consist of a series of stars for each possible value of a mark. The number of stars for each mark depends on how many students received this mark.

For example, if the array `marks` contains:

0	5	5	7	8	7	8	9	9	6	8	6	9	7	7	9	4	7	8	8
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Your program must display the following histogram:

```
0: *
1:
2:
3:
4: *
5: **
6: **
7: *****
8: *****
9: *****
```