Java Fundamentals

Welcome to the Java Fundamentals course! These first assignments are mainly for 'getting your feet wet' in using Java. These should be fairly easy to complete as it is assumed you would have no problems writing this program in C#. The assignments are therefore mostly 'looking up' how similar things are done in Java.

If you feel confident in your programming skills, feel free to only complete assignment 3.

Week 01 – Assignment 01 – In-class exercise

During the programming 1 course (C#) you have probably seen this simple example:

```
void Start()
{
    string name = Console.ReadLine();
    int age = int.Parse(Console.ReadLine());
    Console.WriteLine(name + " " + age);
}
```

Try to recreate this as a Java application

Tips:

- You can use System.out.println() for showing text
- You can use the java.util.Scanner class for reading input

Week 01 – Assignment 02 – Programming 1 arrays exercise

During the programming 1 course, the following exercise was given to practice the use of arrays in C#. Again, try to recreate this application in Java,

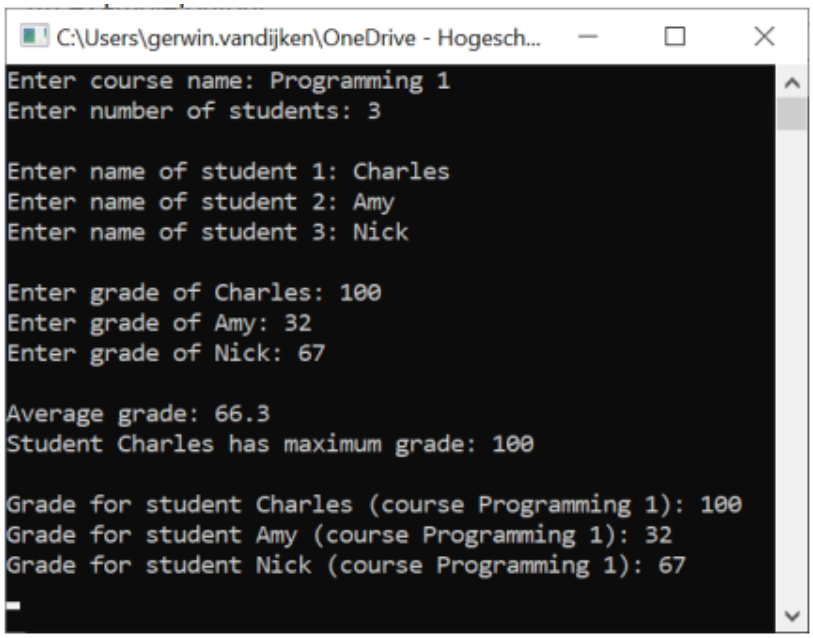
Original assignment:

Ask for the name of a course. Then ask how many students have taken a test. After that, ask for the students' names, one by one. Lastly, ask for each student's grade.

After entering all the data, assign the average grade and the highest grade stating the name of the person who has been awarded the highest grade (if several students have the highest grade, only one grade should be shown).

Lastly, provide a complete overview of all students and their grades.

An example output:



Tips:

- use two arrays: one for the names and one for the grades;
- the sizes of the two arrays are equal to the number of students entered

Week 01 – Assignment 03 – Simple absenteeism registration application

In this assignment we will use classes to create a similar application to the one before, but this time with a bit more Object Oriented Programming.

This application can be used during classes to register absenteeism.

1. Create a new command line app in Java
2. Add a class 'Student' to your project and give it fields with appropriate data types for:
    a. Name
    b. Present/Absent
3. In the main method, ask for the number of students in the group and store this in a variable.
4. Add a variable containing a collection of students, with the given size. An example of a collection is the array, but you are free to use a different type of collection.
5. Start a loop that will allow the user to enter the names of all students, in the following format:
    a. Please enter the name of student #1 and press [ENTER]:
    b. Make sure the first student displayed is 1 and not 0
6. Store every student as a new object in the collection
7. Write back the list of students to the command line
8. Start a loop that will allow the user to register if students are present, in the following format:
    a. Is student #1 (name) present? [Y/N + ENTER]:
    b. Store the result in the student object
9. Write back the list of students with their present/absent status to the command line
10. Compare your program to the expected result below and improve where necessary.

An example output:

```
Please enter the size of your group and press [ENTER]
3
group size: 3
Please enter the name of student #1 and press [ENTER]:
Piet
Please enter the name of student #2 and press [ENTER]:
Ali
Please enter the name of student #3 and press [ENTER]:
Marie

Student #1: Piet
Student #2: Ali
Student #3: Marie

Is student #1(Piet) present? [Y/N + ENTER]:
n
Is student #2(Ali) present? [Y/N + ENTER]:
y
Is student #3(Marie) present? [Y/N + ENTER]:
y

Student #1: Piet         | Present: false
Student #2: Ali          | Present: true
Student #3: Marie        | Present: true
```