**Lab 1 - Java Refreshment**

* **Submission date: 30 Sept 11:00 pm**
* **When submitting the code, please add the group in the following format: Name Surname - Group [Letter]. For example, “Luis Miralles - D”**

This first lab is going to be a quick review of Java. Android applications are based on two languages Kotlin and Java. But in this module, we are going to use Java. You can use eclipse, the terminal, or any online java compiler such as

* <https://www.programiz.com/java-programming/online-compiler/>
* <https://www.tutorialspoint.com/compile_java_online.php>
* <https://www.jdoodle.com/online-java-compiler/>

Generally, the labs are ranked in the lab, on the same day. But this first week, we will allow uploading the lab through Brightspace. The labs are going to be ranked on a weekly basis and that is one part of the total mark. There will also be a final assignment and we will give you instructions in the coming weeks.

**Part 1 - Sports Player Class (0.2 pts)**

Create the “Sports player class” in which there is a person that has the following attributes:

* Year of Birth: Note that it is better to ask for the year of birth than for the age; as the age can change over time.
* Category: Only has two values (Men and women) to represent whether the person plays in the men’s or women’s category.
* Country: It represents the country for which the player is playing.

Make sure the attributes are encapsulated. Use a constructor with parameters and also a constructor without parameters.

**Part 2 - Tennis player inheritances from the class “Sports player” (0.2 pts)**

* Create a new class called “Tennis player ” as a subclass of “Sports player” in which there are the following attributes:
* Height: In which the value is set in meters
* Born: City and country in which the player was born.
* Coach: Name of the coach
* Best ATP Ranking: The lowest ranking in the player’s professional career.
* Prize money: Set the price in US dollars.
* Plays: Only has two values(right-handed or left-handed).
* Create the constructor for the class which calls the constructor of the parent class, in this case, “Sports player”.

**Part 3 - Adding the toString() method (0.2 pts)**

Add to both classes “Sports player” and “Tennis player” the method toString in such a way that the “toString method” of the child class calls to that of the parent’s class.

It is very important to show the details of the players in a structured and tidy way.

For height translate it into feet when printing the values.

Print as an example the attributes of Emma Raducanu and Daniil Medvedev (Winners of US open)

Details of Emma Raducanu:

* Height: 1.75 m
* Born: Toronto, Canada
* Wimbledon: 4R (2021)
* Coach: Andrew Richardson
* Plays: Right-handed
* Highest ranking: No. 23
* Prize money: US$2,803,376

Details of Daniil Medvedev:

* Country: Russia
* Born: 1996
* Moscow, Russia
* Height: 1.98 m
* Plays: Right-handed
* Coach: Gilles Cervara
* Prize money US: $19,793,705

**Part 4 - Interfaces (0.2 pts)**

Create a Java interface which is an abstract class with methods that can be implemented in different classes to make the relationships more flexible. https://www.javatpoint.com/interface-in-java

The class interface is called “PrintValues” and has two methods:

* ShowNacionality() simply prints the country for which the country is playing.
* ShowAge() prints the current age of the players based on today’s year.

**Part 5 - Static variables (0.2 pts)**

Use a static variable to count how many players are created. Create a new method to show this variable. Correctly set this variable as an attribute of the object or as a global variable of the constructor.