Lecture 2 - Advanced Kotlin - Homework

- Create a small program with classes and properties that describe a real world concept in a simple way
    - Use at least five different class types
    - Try to use both var, val and lateinit var mutability and nullability
    - Use different visibility modifiers
    - Different types of flow-control
    - Bonus points for use of companion objects, secondary constructors, custom get/set accessors
- For example, you might model a “Hospital” which has some of the following classes and properties
    - Departments, with their name, responsibility and so on
    - Workers, with their salary, department, name and salary
    - Patients, with their name, what their illness is
    - Size
    - There might be some functions like “treatIllness” which requires a patient and a worker that can treat the illness, it might return a “result” like a boolean true or false if the illness was cured
    - This is just a random example, try to be creative, try to create something interesting, but not too complex

Additional concept ideas:

- A Football club (or any sports club)
- A school or a university
- A coffee shop
- A restaurant

Advanced Kotlin

Expanding on the previous project and homework, try to add concepts of abstraction, polymorphism, inheritance, interfaces, delegates and higher-order functions, as well as collections and operators on the collections.
Getting familiar with the collections API is important because you’ll be dealing with a lot of data manipulation (filtering, sorting, extracting, transforming) in Android apps. The API comes with a bunch of pre-built functions. Whatever you might need to do with data stored in a collection, there’s an operator, or multiple chained operators to get the job done. Play with it and see what you can come up with.

Examples:

- Calculate the total daily profit of a coffee shop.

- Find the best goalscorer in a football team, and the player with the most minutes played.
- Group the university students by the lectures they are attending.