In this first session we introduce the main features of Java, Eclipse, Maven and Git. We speak about the main advantages of Object Oriented Programming, and the reason why it represents a very important step in the direction of the progress of abstraction. We see the main concepts of objects and classes, and how they are constructed. Classes have fields and methods: we see how fields are defined and initialised and how methods are defined, implemented and called.

We then speak about primitives: a *special* kind of objects, including `int`, `float`, `double`, `char` and others, which are allocated in the `stack` and not on the `heap` (the `stack` is faster and more efficient, but less flexible). We see operators, aliasing and execution control.

In order for you to be able to have a look at the code also after the lecture, this is a list of the classes we see, in the order we look at them and with reference to the topic they are supposed to cover.

- `com.andreamazzon.session1.helloworld.HelloWorld`: very first example of Java class. We see how a class is defined, and the `main` method.
- classes in `com.andreamazzon.session1.oophelloworld`: we see a class, `Message`, with two methods and one field. Here we see how methods are defined and implemented, and how fields are defined and initialised. The class `OopHelloWorld` contains the `main` method. It shows a first example about how methods are called and fields manipulated.
- `com.andreamazzon.session1.operators.Operators`: operators acting with primitives are shown and introduced. We have various examples of their use.
- code in `com.andreamazzon.session1.tank`: here we observe the phenomenon of `aliasing`: for objects which are not `primitives`, we manipulate their reference rather than their value. So when you assign `FirstObject = SecondObject`, they are allocated in the same piece of memory. In this classes we see the consequences of that.
- `com.andreamazzon.session1.divisible.Divisible`: very simple example of `if/else` statement.
- code in `com.andreamazzon.session1.testval`: again on `if/else` statement. The class `Comparison` have two methods, that return a `boolean` value. One of those shows the use of the `ternary operator`.
- code in `com.andreamazzon.session1.oopdivisible`: also about the `if/else` statement, but this is a first exercise for you. In the `main` method of `MainDivisible`, you have to construct an object instance of `CheckDivisible`, call the appropriate method and give a value to its fields.
- `com.andreamazzon.session1.randomvariable.WhileRandom`: here we start to see iterations, and in particular this is an example of `do..while` (or `while`, if we write it slightly differently). Important to note the Java `Random()` class.
- `com.andreamazzon.session1.elevator.Elevator` very easy example of `for` loop.
- code in `com.andreamazzon.session1.gauss`: example of the use of the `for` loop: the class `SumOfIntegers` has a method which computes the sum of the first n natural numbers, printing them as well.
- code in `com.andreamazzon.session1.primenumbers`: exercise for you, on the `for` loop and `if` statement: you have to write a class with a method to check if a number is prime.
- `com.andreamazzon.session1.switches.ARandomSwitch`: example of the `switch` statement.