JAVA CHEATSHEET

In simple words, Java is an object-oriented programming language. It conceptualizes a very crucial idea: to represent objects in a machine, like they are represented in real life. I will, obviously, not give you a detailed explanation of how Java brings objects to life (if you are interested though, find the links below for learning resources).

Java uses classes to represent entities. Cars, students, courses, restaurant menus are all abstract entities. However, these entities are brought to life with the help of objects. A menu for Pizza Hut is a form of a restaurant menu. The computer programming course that we study in our freshman year is a form or example of a course. These forms or examples are objects of a class.

Everything in Java is a class. The speciality of a class is that it can hold properties and methods. A car has properties like its model, color, price and methods like start engine, switch on radio, etc.

If you have experience with any other programming language (especially C or C++), you're good to go. If you're new to programming, we will not be dealing with the code as much as we will be dealing with version control. Understanding the code will give you an upper hand but it's manageable.

We will be using Java through Visual Studio Code (all of the code during the workshop will be edited through VSCode). VSCode has extensions that make coding and executing Java projects easy (and fun).

Java programs are of the form:

```
public class ClassName {
public static void main(String[] args){
//this is a comment
Student Suha = new Student();
//this creates an object Suha of the form Student
}

public class Student{
//each Student has a name and rollnumber
    private String name;
    private int rollnumber;
    //these are attributes
```

```
//each student has their own getRollnumber method
    public int getRollnumber(){
        return rollnumber;
    }
}
```

Public and private signify whether or not the class, attribute or method is accessible outside the class/file. Usually, we keep our attributes private and methods public.

Things you need to know (in case you don't already):

- **Create a java file and open it in VSCode (the editor is very intuitive, if you still have trouble figuring it out, feel free to reach out to me). If everything goes right, it'll create a java project for you.**
- **Each new class must be in a new file with the same name as that of the class and extension .java**
- **F5 key runs your project.**
- **The output is displayed in a terminal window (integrated) that can be toggled into view by Ctrl+` on Windows.**

Learning resources:

- **https://www.udacity.com/courses/java-developer-nanodegree--nd035**
- **https://www.codecademy.com/learn/learn-java**
- **https://www.w3schools.com/java/**
- **https://www.youtube.com/watch?v=RRubcjpTkks (Java in 14 minutes)**
- **https://www.edx.org/learn/java**
- **https://code.visualstudio.com/docs/languages/java**