Tutorial 1

Task 1: Review the content of Lecture 00, lecture 01, and lecture 02, answer the following questions:

1. What is the difference between a "compiler" and an "interpreter"?
2. If you have the source code for a Java program, and you want to run that program, you will need both a compiler and an interpreter. What does the Java compiler do, and what does the Java interpreter do?
3. Java is a "platform-independent language." What does this mean?

Task 2: Watch the video of ‘Lecture 02_Java Runtime Environment and IDE’, this task simply draws together the steps in the previous example in the video:

1. Running your first Java Application
   - Enter the MyJavaProgram class source code into a text editor.

```
public class MyJavaProgram
{
      public static void main(String[] args)
      {
            System.out.println("My Java program running!");
      }
}
```

   - Save it in a file called MyJavaProgram.java (make sure it is saved as a plain text file with the correct extension).
   - From the source code folder in a command window, compile the class using the “javac” compiler.
   - If necessary, fix any errors, and continue to compile and edit your code until it compiles successfully.
   - Once you have successfully generated a compiled “.class” byte code file, run the program by using the “java” runtime.

2. Add packages and run your program again

   - Make a copy of your MyJavaProgram class
   - Rename the file ‘MySecondProgram’
   - Add an appropriate package statement to the top of the source file (e.g. `package com.exercise.task2)`
   - Change the message in System.out.println so you can be certain which class you are running
   - Compile the class and make sure the “.class” is located in the correct folder
   - Run the program (remember you need the fully qualified class name, e.g. `com.exercise.task.MySecondProgram`)

3. Passing an argument and run your program
   - Make a copy of your MySecondProgram class
   - Rename the file ‘MyThirdProgram’

- Change the message in System.out.println again so you can be certain which class you are running
- Add statement ‘`System.out.println(args[0])’` to your code so you can print an argument
- Compile and run the program from command line while passing a String as argument

Adapted from: Parsons, D. (2020) *Foundational Java Key Elements and Practical Programming*, Springer