Practice 3

In this practice, we'll be using Java's I/O utilities to explore the source code and byte code of Java core APIs.

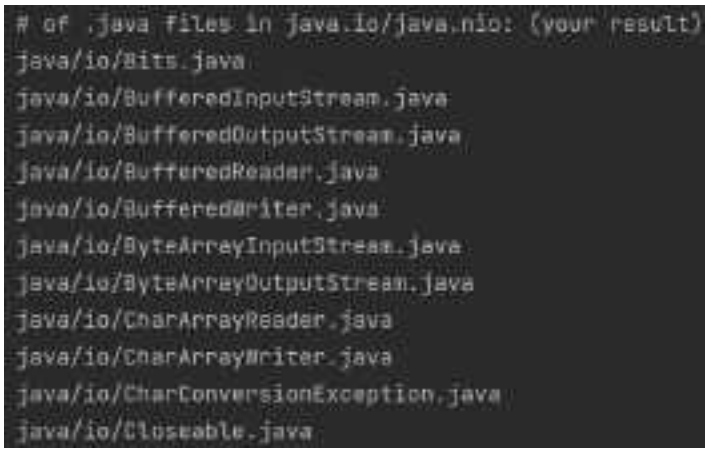
Java Source Code

The `src.zip` in your `$JAVA_HOME` (`$JAVA_HOME` refers to JDK installation directory) contains the Java programming language source files for all classes that make up the Java Core API (that is, sources files for the `java.*` , `javax.*` and some `org.*` packages,). This source code is provided for informational purposes only, to help developers learn and use the Java programming language.

We provided the `src.zip` in JDK 1.8.0. Please write a program to:

- Read the `src.zip` file.
- Count and print all the `.java` source files in the `java.io` and `java.nio` directories.

Sample output:



Java Byte Code

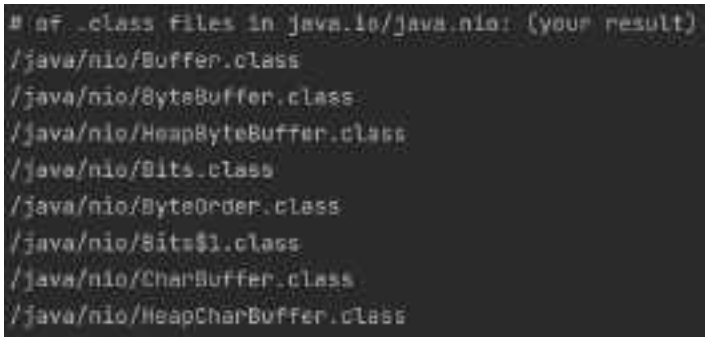
The `rt.jar` file in your `$JAVA_HOME/jre/lib` contains all of the compiled class files for Java Core API. JRE provides `rt.jar` as bootstrap classes to be loaded when JVM starts, so that you could use core APIs such as `java.lang.String` , `java.util.ArrayList` and `java.io.InputStream` . A `.jar` file is essentially a zip file for `.class` files and you could use zip tools such as WinRAR to explore its content.

We provided the corresponding `rt.jar` in JDK 1.8.0. Please write a program to:

- Read the `rt.jar` file.

- Count and print all the `.class` bytecode files in the `java.io` and `java.nio` packages.

Sample output:



Think

The `src.zip` and `rt.jar` we provided are from the same JDK installation. Does the count of `.java` source files in `java.io` and `java.nio` packages the same as the `.class` files in these two packages? If not, why? (We'll explore this question in the next lab practice.)