**Exercise: UML Class Diagram and Sequence Diagram**

**Part A:**

Using the javadoc for Java's Reader class, create a full UML class diagram for the Reader class and all nested subclasses. There should be 10 total classes in your diagram, with Reader being the top-level class. You do not need to include Object as the superclass of Reader.

Java Reader javadoc: <https://docs.oracle.com/en/java/javase/20/docs/api/java.base/java/io/Reader.html>

For each class, you must provide the following details:

* Constructors
* Method declarations (full signature, such as "int read(char cbuf[])"
* You do not need to list the fields in each class – methods only

**Part B:**

Given the following code, you must create a Sequence Diagram using the classes that you just created as lifelines. Don't worry about anything not shown in the code snippet below, and don't worry about it compiling or working. We just want to see that you've used the appropriate method calls and fully described how data is passed across lifelines.

For creating the loop, you can just draw a rectangle, right click on it, and choose Ordering -> To Back. Then create a text box at the upper-left hand corner of the loop, and put the loop condition there.

**int** bufSize = 16;

InputStreamReader inputStream = **new** FileReader("text.txt");

BufferedReader bufReader = **new** LineNumberReader(inputStream,bufSize);

**int** c = inputStream.read();

while (bufReader.ready()) {

String line = bufReader.readLine();

}

System.*out*.println(line);