CSE 274: Data Abstraction and Data Structures
Project #4: Map and Hashing

Outcomes:

- Use Java's Collection classes (specifically, java.util.HashMap and java.util.TreeMap)
- Implement the HashMap ADT

General requirements:

- Follow good programming practices.
    - Format your code so that it is readable using generally accepted guidelines for formatting source code.
    - Don't make code more complicated than it needs to be. If you find yourself repeating code, cutting and pasting code, etc., write a method to perform that task.

Specific requirements:

Part 1: Using maps to solve problems

- Download `covid-data.csv` and add it to the *top folder* of a new Eclipse project.
- Download `Data.java` and add it to the source code of your project. Verify that your project is correctly set up by running the *`main()`* method in `Data.java`. It should run without errors.
- Implement all 12 unimplemented methods in `Data.java`.

Part 2: Implementing HashMap using separate chaining and Java's LinkedList class

- Download the `Map.java` interface, and the partially implemented `HashMap274.java`. Add these to a new Eclipse project (separate from the project of Part 1). The instance variables in HashMap274, and the inner `Entry` class are both public. Do not change these. They must remain `public` in order for us to test your code.
- Implement:
    - `public V get(K key)`
    - `public V put(K key, V value)`
    - `public V remove(K key)`
    - `public Set<K> keySet()`
- Code should follow standard formatting guidelines

Submit:

Submit a single *zip* file called Program#4 containing the following files. You must use these exact names. Do not modify these names with your own. We will be able to distinguish yours from other students' files through Canvas.

- `Data.java`
- `HashMap274.java`