ACS 560 Software Engineering

HW 9 (Due on Nov. 6, 11:59pm, 2022 in BitBucket)

(1) **A simple queue class**. Add String objects to the queue, and remove them according to normal queue semantics. This class provides the following methods:

```
public interface QueueExercise  {
        /**
         * Return and remove the head of the queue.
         * Throws QueueEmptyException if the queue is empty.
         */
         public String remove() throws QueueEmptyException;

         /**
          * Add an item to the end of the queue.
          */
         public void add(String item);

         /**
          * Return but do not remove the head of the queue.
          * Throws  QueueEmptyException if the queue is empty.
          */
         public String peek() throws QueueEmptyException;

         /**
          * Returns true if the queue is empty.
          */
         public boolean isEmpty();
}
```

For the above scenarios, write down as many possible unit tests as you can think of. Here are some hints to get you started: what is likely to break? How should the queue behave when it is first initialized? After it's been used for a while? Does it really do what it claims to do?

(2) **Unit testing (JUnit)**. The Clock.java code contains a bug or several bugs. Please use JUnit to help identify all bug(s). The source code can be downloaded from course website. In your submission, please indicate where are the bug(s) and how you fix it/them, and include the JUnit test class. The goal of the code is to represent a Clock in both 12 hour and 24 hour formats.

Here are some hints to get you started: Do the 12 hour and 24 hour formats display properly? Does adding hour, minute, second work properly?

I will be looking for thorough testing and improving the code as you see fit.

Please upload your (1) queue test descriptions file and (2) all source code (Junit project code) to Bitbucket and put them under the directory “Homework_09” in the “Homework_ACS560” repository.