Deadline: Monday, December 11, 2023

Yaşar University
Fall, 2023-2024
SE3313 – Software Design and Architecture

Assignment Week-10

1. **Goal:** Using the State Pattern

   The slides between 45-71 in Lecture Notes-10 present the new design for the"Gumball Machine" game. Revise these slides and then implement this design. Most of the codes neccessary for you to implement this game in Java is already given in these slides. However, you also need to write the code for the missing classes/methods yourself to fully complete the design.

   ** Submit the Java source files and the screenshot(s) from the execution of your implementation in a single folder named ***Task1***.

2. **Goal:** Using the Iterator with ArrayList and HashMap data structures.

   Create an empty ArrayList named *A* of Integers. Also, create a HashMap named *M* where the key is a String and the value is an Integer. Put 5 elements in *M* where the keys are "k1", "k2", "k3", "k4", "k5", and the values are 1, 2, 3, 4, 5.

   Using ***Iterator*** class of Java. Go over the elements in M one by one and add the *value* of each map element to *A.* Then, again using an Iterator, print the elements in A. Do not use any data structure except A and M to keep the data temporarily for the copying process.

   - You can see the links below for further information about **Iterator**.

     https://developer.classpath.org/doc/java/util/Iterator-source.html

     https://docs.oracle.com/javase/8/docs/api/java/util/Iterator.html

   - You will need the following libraries:

     ```
     import java.util.Map;
     import java.util.HashMap;
     import java.util.Iterator;
     import java.util.ArrayList;
     ```

   ** Submit the Java source files and the screenshot(s) from the execution of your implementation in a single folder named ***Task2***.

   ** Put the folders Task1 and Task2 in a single folder named ***Week10-Assignment*** (in zip/rar format).