



King AbdulAziz University

Faculty of Computing and Information Technology

Advanced Programming - CPIT 252

HW 2

Due Date: 26/4/2022

Overview

For this homework, you are required to identify the appropriate design patterns for a given scenario and then write the code that simulates the scenario. Necessary design pattern components should be included; however, problem-domain specifics can be simulated by writing to standard output.

Scenario

In a chemistry lab, scientists use a simulation program to research the different elements. The program allows researchers to combine elements and then display the molecular model of the resulting compound. The program is designed with two main principles:

- 1- A compound could consist of both single elements and other compounds.
- 2- Each element is drawn differently when drawing the molecular model.

Your job is to identify the appropriate design patterns to satisfy both principles.

The Extra Mile

If a compound has already been simulated, load a cached model instead of rendering a new one.