

SWE 6853 - Design Patterns

Assignment-2 (10 points)

Due: 7/16/2023

Directions: Carefully answer the following question. You may consult your book, your notes, D2L discussions, and any other reference material, including online references. You may *not* discuss them with others, whether they are members of the class or not. However, you are encouraged to discuss them with me and your classmates (in D2L discussions and/or chat room) *after* the due date. Late submissions (up to two days late) will be accepted for 50% of the grade. Submissions more than two days late will not be graded. NO EXCEPTIONS. Good luck and let me know if you have any questions.

Abstract Factory Homework

Use the Abstract Factory pattern to model an application that creates different types of students. To make it more interesting, assume after creating these students, your model also allows the client to query the features of the different types of students. To keep it simple, consider two basic types of students: graduate and undergraduate. Further, a student can be either national or international. Assume there is a common graduate student interface that national students and international students implement. This interface has methods to get the student name and get the student features. There is also a common undergraduate student interface that national undergraduate students and international undergraduate students implement. This interface has methods to get the undergraduate student name and get the undergraduate student features. Draw the UML-like class diagram showing the classes, the relationships, and the necessary operations to design this student query system using Abstract Factory. Please comment your methods and explain as much as you need to so I will be able to understand your model.