جامعة نيويورك أبوظبي
NYU | ABU DHABI

CS-UH 2012: Software Engineering

Assignment 2

Assignment Deadline: Check Brightspace and course schedule

Assignment Type: Individual Effort and Individual Submission. **While this assignment relates to the application being developed in the group project, you must complete this assignment individually**. The results of this individual assignment (Assignment 2) will play a role in shaping the overall delivery of your team project delivery 3, which will be a team. Further details regarding the connection between Assignment 2 and Project Delivery 3 will be discussed in class. **But it is important to emphasize that Assignment 2 constitutes individual effort work.**

Submission Method: Your submission for this assignment should be in PDF format, following the provided template below. You will submit your work to Brightspace. Ensure that your document is well-structured, with each section clearly addressing its respective task and providing necessary details as outlined in the assignment instructions. Please refer to the template below.

Assignment Evaluation and Weight: The assignment will be graded out of 100 points and is worth 6% of your final course grade.

Assignment Overview:

This assignment aims to perform an analysis and design of the most significant use case scenario within the context of your project. It involves the development of System Sequence Diagrams (SSDs), domain models, operation contracts, UML interaction diagrams, and a class diagram based on one significant use case from your project. The purpose of this assignment is to deepen your understanding of the process of software design.

Assignment Instructions and Template:

Section 1: Include the Use Case Scenario: *(This task is mandatory but has no points)*

Begin your Assignment 2 submission with the inclusion of only one use case scenario from your project. This scenario should represent a substantial functionality within your system, avoiding trivial use cases like login or logout. You have the flexibility to select a use case that you previously submitted for Assignment 1, enhance an existing one, or introduce a new use case that aligns with your team project.

Section 2: System Sequence Diagram (SSD): *(15 points)*

Create a System Sequence Diagram that illustrates the main success scenario of the selected use case. This SSD should clearly depict the interactions between the actor(s) and the system, showcasing the sequence of messages exchanged during the use case execution.

Section 3: Domain Model: *(15 points)*

Develop a domain model that encompasses the fundamental concepts, attributes and associations relevant to the chosen use case scenario. The domain model should include all significant concepts, their attributes along with data types, and associations. Each association within the domain model should be well-defined with a name and multiplicity.

Section 4: Operation Contract: *(20 points)*

Based on the SSD, select the most significant operation (**only one operation**) that represents a key step in the use case's main success scenario. Write an operation contract for this operation using the template we discussed in class. In the post-conditions section of the operation contract, explicitly describe any of the following: the creation of an object instance, the formation of an association, or the modification of an attribute (20 points).

Section 5: UML Interaction Diagram: *(25 points)*

Utilize the operation contract developed in the previous step as a reference. Create a UML interaction diagram that visualizes the interactions between objects during the execution of the selected operation. Annotate the messages in the diagram with GRASP patterns such as Expert, Creator, etc., where applicable.

Section 6: Class Diagram: *(25 points)*

Convert the domain model from step 3 into a class diagram.

Additional Guidelines:

1. Use Case Selection: Ensure that the chosen use case scenario reflects a significant aspect of your system's functionality. Avoid selecting overly simplistic use cases and focus on those that contribute substantially to your project.
2. Submission Format: Compile your assignment into a single PDF file for submission.
3. UML Drawing Tool: You are encouraged to utilize specialized UML drawing tools to create accurate and well-structured UML diagrams. However, you can also use any non-specialized tools (E.g., powerpoint, keynote, draw.io etc).