Individual Assignment # 1: Pattern Documentation using Short Template -- Stable Analysis or Design Pattern

Work on the assigned three (3) concepts that assigned to you and document each one of them into the following short template.

Each Template = 50 Points, divided as following (Must do):

- **Name** 02 Points
- **Context + 3 Scenarios** 04 Points
- **Problems**
  - Functional Reqs 08 Points
  - Non-Functional Reqs (3) 05 Points
- **Challenges (6)** 06 Points
- **Constraints (6)** 03 Points
- **Solution**
  - (Pattern Class Diagram + Description) 06 Points

Total 34 Points

Extra Points for Each Template:

- **Solution (Quality of the Class Diagram), Participants, and CRC Cards:** [04 POINTS]
- **Applicability With Illustrated Examples** [12 POINTS, 06 per CASE STUDY]

**TOTAL** 16+

The purpose of this assignment is to define the context, the right requirements, its challenges and constraints using the following template.

**Pattern Documentation Template:**

- **Name:** Presents the name of the presented pattern. [02 POINTS]

**Length:** Few lines
• Provide short definition of the term (Name)
• Compare the name of the patterns with other selective name and conclude with the right selection of the name.
• Why did you choose that specific name
• Justify the name (such as why use “Any…” as a prefix for BO only)

You may answer the following questions:
• Why did we choose that specific name?
• Suggest a nickname for this pattern that is related to knowledge

• **Problem**: Presents the problem the pattern concentrates on. This is one of the hardest parts in the pattern writing. Do not try to write it quit well in the first iteration, most probably; you will not be able to! The problem should focus on the core purpose of the pattern and should be able to answer the question: In what situation I may benefit from your pattern?

**Length: 1/4 to 1/3 Pgs**

Has to be about a specific problems and descriptions = actual requirements of the pattern

Name the goal of the BO that you signed for and describe the requirements briefly.

There are two types of requirements:
1. Functional Requirements
2. Non-Functional Requirements

+ Functional Requirements [08 POINTS]
+ Non-Functional Requirements [05 POINTS]

• **Context**: Gives possible scenarios for the situations in which the pattern may recur. It is important in this Section that you motivate the problem you solve in an attractive way. For example, if I am writing a pattern about Trust, I would flush the trust in the context of e-commerce, for example. Keep this Section short yet exciting (This Section somewhat serves as an Introduction in conventional paper) [04 POINTS]

**Length: 1/4 to 1/3 Pgs**

• Describe the boundaries
• List basic scenario – context,
• Show by good examples where the pattern can be applied (3 scenario limit)
• For example “account”… would have ownership and handler context, can be applied to banking Internet Providers, private clubs, etc
• Discuss briefly a few unique context of the pattern.

• **Challenges and Constraints**: Illustrates the challenges and the constraints that the problem needs to resolve. You may create two subsections: (1) Challenges and (2) Constraints. In particular, in this Section you try to say, this is not a trivial problem, and trivial solution may not work. Be clear and brief. One major mistake in writing this Section is that you mix the problem statement with the forces themselves. After writing this Section, try to read again the problem statement and make sure that they are not the same! It happens!!
For this project:
List 6 Challenges & 6 Constraints

- **Challenges** [06 POINTS]
- **Constraints** [03 POINTS]

**Solution:** *(Extra 4 Points for good pattern structure and adding participants and CRC cards)* [06 POINTS]

1. **Pattern Structure and Participants**
   - Gives the class diagram of the pattern (EBT or BO). It also introduces briefly each class and its role. (associations, aggregations, dependencies, and specializations) should be included in the class diagram. Association classes, constraints, interfaces, tagged values, and notes must be included in the class diagram. *A full description of the class diagram should be included with the final submission.*

**ADDITIONAL EXTRA WORK**

- **Applicability With Illustrated Examples** [12 POINTS, 06 POINTS per CASE STUDY]:
  - Provides clear, significant, and detailed TWO case studies for applying the pattern in different contexts. The following sub elements represent the required details in one case.
  1. **Case Studies.** Shows the scenario of two cases studies from different contexts
  2. **Class Diagram**– Pattern + IOs
  3. **Use Case.** Presents the different Use Cases and the Actors for each case study, and shows the relation between the different Use Cases, and the relation between these Use Cases and the Actors of the system. You need to insert test case for EBTs and BOs only
  4. **Use Case Description.** Gives detailed description for each Use Case. (Sometimes each would be so long for a paper, but at least a sample of these Use Cases! Just my opinion)
  5. **Behavior Diagram.** Presents the sequence diagrams and/or the state transition diagrams of the Use Cases.

**Length: 2-4 pages total ~ 1 Page each**

Show 2-3 Distinct Scenarios
Description of the problem statement of the particular problem
Describe the Model
Use Case Description (don’t need to do use case diagrams)
Sequence Diagrams

**Check Attached Examples**