Individual Assignment # 1: Define the right requirements & Signup Sheet

Extra Point = Double the Points - Must satisfy all the extra points.

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.

  **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

- **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)

  **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.

- **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

- **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!!

**Length: 1/2 Pgs**
- Describe the challenges that will be overcame by the pattern
- Describe the constraints related to the pattern such as multiplicities, limits and range.
- Make sure to list the challenges and constraints as bullets.

*For this project:*
**List of challenges = 8 challenges.**
*Any Extra Challenges and Constraints will be graded for extra points.*

- **Solution:**
  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.*
  2. **CRC- Cards**: Summarizes the responsibility and collaboration of each participant (class). Each participant should have only one well defined responsibility in its CRC- Card. Participants with more than one responsibility should be presented with more than one CRC- Card, each CRC- Card will handle one of these responsibilities. *(Extra Points)*

**Length: 1/3 pgs for Description**
Describe the constraints related to the pattern such as multiplicities, limits and range.
Describe some of the challenge must be over come by the pattern
  Note: not ALL IO & BO may not always have inheritance

**Length: 1/2 pgs for Detail Models (Extra Points)**
Describe the model, role story, such as scenarios, how they play together

**Length: 1/2+ pgs for Participants (Extra Points)**
Each name and short description, and how they behave within the model. Such as classes and patterns in the patterns.

**Length: 1+ CRC Cards (Extra Points)**

- **Applicability With Illustrated Examples (Extra Points)**: Provides clear, significant, and detailed ONE case study 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. 

5. **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)

6. **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

**Signup Sheet.**

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