California State University Fullerton

CPSC 462



Object Oriented Software Design

SW Architecture Document (SAD)

for the



Hotel Reservation

System

|  |  |  |
| --- | --- | --- |
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Revision History:

| Version | Date | Summary of Changes | Author |
| --- | --- | --- | --- |
| 1.0 | 2021-11-15 | * Initial Release | Josh Ibad |

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NOTE TO STUDENTS:

1. See Larman §8.2 Process: Inception and Elaboration, Chapter 13, §39.2 Notation, The Structure of a SAD, §39.3 Example, A NextGen POS SAD, §39.4 Example, A Jakarta Struts SAD
2. Delete this NOTE before you deliver

# Architectural Representation

…

<Summarize key architectural decision in format call technical memoa short one-page description of a descision and its motivation>

# Architectural Decisions

## Low Coupling / High Cohesion GRASP Decision

### Decision to be made

<Describe the specific dilemma you’re facing, for example: What specific question are you trying to answer? What specific problem are you trying to solve? Include in your description the properties a good and poor decision will have>

### Options Considered

| Low Coupling / High Cohesion | Static View | Dynamic View |
| --- | --- | --- |
| Option 1  (Rejected) | <insert rejected class diagram SNIPPET here> | <insert rejected sequence diagram SNIPPET here> |
| Option 2  (Selected) | <insert Selected class diagram SNIPPET here> | <insert rejected sequence diagram SNIPPET here> |
| Design Model Reference | <point to paragraph, page number, and where on the page the selected option snippet appears in your bigger, overall design’s Static View> | <point to paragraph, page number, and where on the page the selected option snippet appears in your bigger, overall design’s Dynamic View> |

### Selection and Rationale

Option 1 has been discarded because <…>

Option 2 has been selected because <…>

## Creator GRASP Decision

### Decision to be made

<Describe the specific dilemma you’re facing, for example: What specific question are you trying to answer? What specific problem are you trying to solve? Include in your description the properties a good and poor decision will have>

### Options Considered

| Creator | Static View | Dynamic View |
| --- | --- | --- |
| Option 1  (Rejected) | <insert rejected class diagram SNIPPET here> | <insert rejected sequence diagram SNIPPET here> |
| Option 2  (Selected) | <insert Selected class diagram SNIPPET here> | <insert rejected sequence diagram SNIPPET here> |
| Design Model Reference | <point to paragraph, page number, and where on the page where the selected option snippet appears in your bigger, overall design’s Static View> | <point to paragraph, page number, and where on the page where the selected option snippet appears in your bigger, overall design’s Dynamic View> |

### Selection and Rationale

Option 1 has been discarded because <…>

Option 2 has been selected because <…>

## Information Expert GRASP Decision

### Decision to be made

<Describe the specific dilemma you’re facing, for example: What specific question are you trying to answer? What specific problem are you trying to solve? Include in your description the properties a good and poor decision will have>

### Options Considered

| Information Expert | Static View | Dynamic View |
| --- | --- | --- |
| Option 1  (Rejected) | <insert rejected class diagram SNIPPET here> | <insert rejected sequence diagram SNIPPET here> |
| Option 2  (Selected) | <insert Selected class diagram SNIPPET here> | <insert rejected sequence diagram SNIPPET here> |
| Design Model Reference | <point to paragraph, page number, and where on the page where the selected option snippet appears in your bigger, overall design’s Static View> | <point to paragraph, page number, and where on the page where the selected option snippet appears in your bigger, overall design’s Dynamic View> |

### Selection and Rationale

Option 1 has been discarded because <…>

Option 2 has been selected because <…>

## Controller GRASP Decision

### Decision to be made

Who should be responsible for handling an input system event?

<Describe the specific dilemma you’re facing, for example: What specific question are you trying to answer? What specific problem are you trying to solve? Include in your description the properties a good and poor decision will have>

### Options Considered

| Controller | Static View | Dynamic View |
| --- | --- | --- |
| Option 1  (Rejected) | <insert rejected class diagram SNIPPET here> | <insert rejected sequence diagram SNIPPET here> |
| Option 2  (Selected) | <insert Selected class diagram SNIPPET here> | <insert rejected sequence diagram SNIPPET here> |
| Design Model Reference | <point to paragraph, page number, and where on the page where the selected option snippet appears in your bigger, overall design’s Static View> | <point to paragraph, page number, and where on the page where the selected option snippet appears in your bigger, overall design’s Dynamic View> |

### Selection and Rationale

Option 1 has been discarded because <…>

Option 2 has been selected because <…>

# Logical View

## Package Diagrams

<insert diagram here>

### Presentation (UI) Layer Components

N/A

### Domain (Application) Layer Components

#### <Component 1>

<inert Component 1 description and purpose here. Components are represented as sub packages in the diagram above and as subfolders in your computer’s filesystem>

#### <Component 2>

<inert Component 2 description and purpose here. Components are represented as sub packages in the diagram above and as subfolders in your computer’s filesystem>

#### <Component …>

…

### Technical Services Layer Components

#### <Component 1>

<inert Component 1 description and purpose here. Components are represented as sub packages in the diagram above and as subfolders in your computer’s filesystem>

#### <Component 2>

<inert Component 2 description and purpose here. Components are represented as sub packages in the diagram above and as subfolders in your computer’s filesystem>

#### <Component …>

…

## Interface Diagrams

### Presentation (UI) Layer Interface Diagrams

N/A

### Domain Layer Interface Diagrams

<insert Interface Diagram(s) here. Just the interface’s class diagram. Nothing else>

### Technical Services Interface Diagrams

<insert Interface Diagram(s) here. Just the interface’s class diagram. Nothing else>

## Design Patterns

### Polymorphism GRASP Pattern

#### Generalization / Specialization Diagrams

| Static View |
| --- |
| <Insert Class Diagram showing the hierarchy of software classes. The base class should correspond to a general concept from your Domain Model. Show at least 3 realizations (derived classes) that define specific polymorphic specializations. All classes should be implemented and functional in your implementation model (i.e., the code).> |
| <describe the above diagram here> |

#### Factory Pattern Diagrams

| Static View | Dynamic View |
| --- | --- |
| <Insert Class diagram showing the factory pattern used to create specific product instances here> | <Insert Sequence diagram showing the factory pattern used to create specific product instances here> |
| <describe the above diagram here> | <describe the above diagram here> |

#### Source Code References

| Source code file name | Line number(s) |
| --- | --- |
|  |  |
|  |  |

### Protected Variations GRASP Pattern

#### Generalization / Specialization Diagrams

| Static View |
| --- |
| <Insert Class diagram showing the external interface and at least two realizations here. All classes should be implemented and functional in your implementation model (i.e., the code).> |
| <describe the above diagram here> |

#### Abstract Factory Pattern Diagrams

| Static View | Dynamic View |
| --- | --- |
| <Insert Class diagram showing the factory pattern used to create specific product instances here> | <Insert Sequence diagram showing the factory pattern used to create specific product instances here> |
| <describe the above diagram here> | <describe the above diagram here> |

#### Source Code References

| Source code file name | Line number(s) |
| --- | --- |
|  |  |
|  |  |