**Software Design Document[[1]](#footnote-1)**

Front matter

Project Title , Date of Issue and Status

[Issuing organization ] + Authorship

Introduction

Purpose

System overview

Assumptions, Constraints and Dependencies,

Supporting materials; Definitions and Acronyms

Summary + overview of document

**Design Considerations**

System Architecture

* Architectural Design

Activity Diagram\*

Data Design

* Data Description
* Data Dictionary

(Database Schema: Databases, Tables, Fields)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Data Type** | **Allow Nulls** | **Field Description** |
| aTableName | aFieldName | Varchar(50) | Yes | This field … |
|  |  |  |  |  |

[Data Migration, if any]

Context View point

* UML Use Case Diagram
* Use Cases /narrative
* [Data Flow Diagram]

Composition

* [UML Package Diagram]
* Deployment Diagram

User /Human Interface Design

* Overview of User Interface
* Screen Image 1 + Description (Mockups adequate)

Structure

* UML Class Diagrams
* [Object Diagrams]

Collaboration Viewpoint

* UML Collaboration Diagram

Interaction

* UML Sequence Diagram

[State Machine/Chart]

[Appendices]

Complete list of Design Viewpoints as per IEEE P1016 SDD Descriptions

|  |  |  |
| --- | --- | --- |
| **Design Viewpoint** | **Design Concerns** | **Example Design Languages** |
| Context (6.2) | Systems services and users | UML Use Case Diagram, Structured Analysis Data Flow Context Diagram |
| Composition (6.3)  *Can be refined into new viewpoints, such as: functional (logical) decomposition and run-time (physical) decomposition.* | Composition and modular assembly of systems in terms of subsystems and (pluggable) components, buy vs. build, reuse of components | *Logical:* UML Package Diagram, UML Component Diagram, Architecture Description Languages, Structure Chart  *Physical:* UML Deployment Diagram |
| Logical (6.4) | Static structure (Classes, Interfaces and their relationships)  Reuse of Types and implementations (Classes, data types) | UML Class Diagram, UML Object Diagram |
| Dependency (6.5) |  |  |
| Information (6.6) with Data Distribution Overlay and Physical Volumetric Overlay | Persistent Information | UML Class Diagram, variety of ER Diagrams |
| Patterns (6.7) | Reuse of Patterns and available Framework Template | UML Collaboration Diagram |
| Interface (6.8) | -- | -- |
| Structure (6.9) | Internal structure of components in terms of components and classes in terms of classes | UML Internal (composite) Structure Diagram, UML Class Diagram |
| Interaction (6.10) | Object Interaction, messaging | UML Sequence Diagram, UML Communication Diagram |
| State Dynamics (6.11) | Dynamic state transformations | UML State Machine Diagram, Statechart Diagram, State Transition Table (Matrix), Automata, Petri Net |
| Algorithm (6.12) | Procedural logic | Decision Table, JSP, PDL, (pseudo) code C#, Java, etc. |
| Resources (6.13)  *May be refined into resource based viewpoints with possible Overlays* | Resource utilization | UML RT Profile, UML Class Diagram, UML OCL |

1. Do take a look at Address Book Example at http://www.cs.gordon.edu/courses/cs211/AddressBookExample/index.html

   This gives you an idea of the design process. Also look at http://www.uml-diagrams.org/uml-25-diagrams.html [↑](#footnote-ref-1)