|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Software Design Specifications**  ***[Project Title]***  **Version: [xx.xx]**   |  |  | | --- | --- | | Project Code |  | | Supervisor |  | | Co Supervisor |  | | Project Team |  | | Submission Date |  | |   **[Instructions]**   * *No section of template should be deleted. You can write ‘Not applicable’ if a section is not applicable to your project. But all sections must exist in the final document.* * *All comments/examples mentioned in square brackets ([]) are in the template for explanation purposes and must be replaced / removed in final document.* * *This’ Instruction’ section should also be removed in final document.* * *MS-Word Reviewing feature must be used to get the document reviewed by PMs or supervisors.*       **Document History**  *[Revision history will be maintained to keep a track of changes done by anyone in the document.]*   |  |  |  |  | | --- | --- | --- | --- | | Version | Name of Person | Date | Description of change | |  |  |  | [e.g. Document Created] | |  |  |  | [Added Non-functional requirements] | |  |  |  | [Added UseCase x.x.xx] | |  |  |  |  | |  |  |  |  | |  |  |  |  | |  |  |  |  |         **Distribution List**  *[Following table will contain list of people whom the document will be distributed after every sign-off]*   |  |  | | --- | --- | | **Name** | **Role** | |  | Supervisor | |  | Co Supervisor | |  |  |       **Document Sign-Off**  *[Following table will contain sign-off details of document. Once the document is prepared and revised, this should be signed-off by the sign-off authority.*  *Any subsequent changes in the document after the first sign-off should again get a formal sign-off by the authorities.]*   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Version** | **Sign-off Authority** | **Project Role** | **Signature** | **Sign-off Date** | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

**Document Information**

|  |  |
| --- | --- |
| **Category** | **Information** |
| Customer | FAST-NU |
| Project | <Project Title> |
| Document | Software Design Specification |
| Document Version | 1.0 |
| Status | Draft |
| Author(s) | <Names of all the authors of this document> |
| Approver(s) |  |
| Issue Date |  |
| Document Location |  |
| Distribution | Advisor  Project Coordinator’s Office (through Advisor) |

**Definition of Terms, Acronyms and Abbreviations**

*[This section should provide the definitions of all terms, acronyms, and abbreviations required to interpret the terms used in the document properly. ]*

|  |  |
| --- | --- |
| **Term** | **Description** |
| ASP | Active Server Pages |
| DD | Design Specification |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**Table of Contents**

[**1**](#_1v1yuxt) **Introduction 8**

[*1.1*](#_4d34og8) *Purpose of Document 8*

[*1.2*](#_4f1mdlm) *Intended Audience 8*

[*1.3*](#_2u6wntf) *Document Convention 8*

[*1.4*](#_19c6y18) *Project Overview 8*

[*1.5*](#_3tbugp1) *Scope 8*

[**2**](#_28h4qwu) **Design Considerations 9**

[*2.1*](#_nmf14n) *Assumptions and Dependencies 9*

[*2.2*](#_37m2jsg) *Risks and Volatile Areas 9*

[**3**](#_2jxsxqh) **System Architecture 10**

[*3.1*](#_1mrcu09) *System Level Architecture 10*

[*3.2*](#_3j2qqm3) *Software Architecture 10*

[**4**](#_46r0co2) **Design Strategy 11**

[**5**](#_2lwamvv) **Detailed System Design 12**

[*5.1*](#_2xcytpi) *Database Design 12*

[5.1.1](#_1ci93xb) ER Diagram 12

[5.1.2](#_3whwml4) Data Dictionary 12

[5.1.2.1](#_2bn6wsx) Data 1 12

[5.1.2.2](#_qsh70q) Data 2 12

[5.1.2.3](#_3as4poj) Data n 12

[*5.2*](#_1pxezwc) *Application Design 14*

[5.2.1](#_49x2ik5) Sequence Diagram 14

[5.2.1.1](#_2p2csry) <Sequence Diagram 1> 14

[5.2.1.2](#_147n2zr) <Sequence Diagram 2> 14

[5.2.1.3](#_3o7alnk) <Sequence Diagram n> 14

[5.2.2](#_23ckvvd) State Diagram 14

[5.2.2.1](#_ihv636) <State Diagram 1> 14

[5.2.2.2](#_32hioqz) <State Diagram 2> 14

[5.2.2.3](#_1hmsyys) <State Diagram n> 14

[**6**](#_2grqrue) **References 15**

[**7**](#_3fwokq0) **Appendices 16**

# Introduction

## Purpose of Document

*[Describe the purpose of this document and provide a description of the intended audience i.e., the personnel who will be reading this document. Also state the type of design methodology (structural/Object Oriented design methodology) that you will use for the project].*

## Intended Audience

*[Describe people who are concerned with or are expected to use this document.]*

## Document Convention

*[Describe the font and font size that this document will be using]*

## Project Overview

*[Provide a general description of the software system briefly stating its functionality and the basic design approach that you will undertake to develop the software.]*

## Scope

*[List down the scope of the project. Describe what the system will and will not do].*

# Design Considerations

*[This section describes many of the issues which need to be addressed or resolved before attempting to devise a complete design solution. In other words, this section is used to formally set the groundwork for the system design.]*

## Assumptions and Dependencies

*[Assumptions and dependencies for the system and project are already captured in the SRS document. This section should not repeat those issues. Instead it should bring up new issues that are only relevant to design.]*

*Assumption*

*User should know how to train model*

*Data is easy to train because inserted data is clean as it is inserted via forms so it is well maintained*

*Dependencies*

*Hardware*

*No Dependency*

*Software Dependency*

*IPFS depends on Smart Contracts*

*Hospital accepts/reject request of trainee model depends on behalf of smart contracts*

## Risks and Volatile Areas

*[Discuss the most likely sources of change and risks (new requirements, technology, etc.) that would impact the design of the system. If appropriate, describe how the system will be designed to allow timely response to changes or what the contingency path is for changes.]*

*There are no risk and volatile areas in terms of technology however maybe change can occur in output of trained data which can yield new requirements*

# System Architecture

*[This section should provide a high-level overview of how the functionality and responsibilities of the system are partitioned and then assigned to subsystems or components. The main purpose is to gain a general understanding of how the system is decomposed, and how the individual parts work together to provide the desired functionality].*

## System Level Architecture

*[The architecture should decompose the system at a top level in a way that provides a foundation for more detailed design work. The architecture discusses relationships and roles of system elements (subsystems, components, modules, etc.), but does not provide internal details. Areas for consideration are:*

* *System decomposition into elements*
* *The relationship between the elements*
* *Interfaces to external systems*
* *Major physical design issues such as where elements will execute*
* *Global design strategies such as error handling*

*NOTE: You may use appropriate UML diagrams (Package and Component diagrams) to document the overall system architecture. ]*

## Software Architecture

*[The software architecture should include how User level Layer will interact with Database layer. Use diagram for showing the interaction between the layers.*

* *User Interface Layer*
* *Middle Tier*
* *Data Access Layer.*
* *Or other*

*You can give any other architecture also]*

# Design Strategy

*[Describe the design strategies or decisions that impact the overall organization of the system and its high-level structures. This information should provide the reader with insights into the key abstractions and mechanisms used in the system architecture.*

*For the strategy, discuss the reasoning employed (possibly referring to previously stated design goals and principles) and any trade-offs. Areas for consideration include:*

* *Future system extension or enhancement*
* *System reuse*
* *User interface paradigms*
* *Data management (storage, distribution, persistence)*
* *Concurrency and synchronization]*

# Detailed System Design

*[A detailed design should include the following:*

* *Detailed class diagram along with a detailed description of all attributes, functions or methods specifying interactions between different classes/modules.*
* *Logical data model (E/R model)*
* *Detailed GUIs]*

## Database Design

*[A detailed Database design should include the following:*

* *Logical data model (E/R model)*
* *Data dictionary]*

### ER Diagram

*[Entity Relationship Diagram of the system with description]*

### Data Dictionary

*[The convention recommended for writing the data dictionary is as follows.]*

#### Data 1

*[Description (Refer to Template on next page). ]*

#### Data 2

*[Description (Refer to Template on next page). ]*

.

.

#### Data n

*[Description (Refer to Template on next page). ]*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **< Data 1>** | | | | | | | |
| **Name** | | Give primary name of the data or control item, the data store or an external entity. | | | | | |
| **Alias** | | Write other names used for the first entry. | | | | | |
| **Where-used/how-used** | | List all processes that use the data or control item and how it is used (e.g., input to process, output from the process, as a store, as n external entity) | | | | | |
| **Content description** | | Notation for representing content. | | | | | |
|  | | | | | | | |
| **Column Name** | **Description** | | **Type** | **Length** | **Null able** | **Default Value** | **Key Type** |
| *[Column1 Name]* | *[Description of the column]* | | *[Type of column]* | *[Length of column]* | *[Is Column Null able]* | *[Default Value]* | *[If Primary Key than write PK, if Foreign Key then FK, if not a key leave it blank]* |
| *[Column2 Name]* | *[Description of the column]* | | *[Type of column]* | *[Length of column]* | *[Is Column Null able]* | *[Default Value]* | *[If Primary Key than write PK, if Foreign Key then FK, if not a key leave it blank]* |
|  |  | |  |  |  |  |  |

*[Make similar tables for all the data items.*

*The notation to develop content description is given below:*

|  |  |  |
| --- | --- | --- |
| ***Data construct*** | ***Notation*** | ***Meaning*** |
|  |  |  |
|  | *=* | *is composed of* |
| *Sequence* | *+* | *And* |
| *Selection* | *[|]* | *either-or* |
| *Repetition* | *{}n* | *n repetitions of* |
|  | *( )* | *optional data* |
|  | *\* … \** | *delimits comments* |
| ] |  |  |
|  |  |  |
|  |  |  |

## Application Design

*[A detailed application design should include the following:*

* *Detailed Sequence diagram with parameter list*
* *State Transition Diagram*
* *DFD level 1 diagram]*

### Sequence Diagram

#### <Sequence Diagram 1>

*[Diagram & Explanation of diagram]*

#### <Sequence Diagram 2>

*[Diagram & Explanation of diagram]*

.

.

#### <Sequence Diagram n>

*[Diagram & Explanation of diagram]*

### State Diagram

#### <State Diagram 1>

*[Diagram & Explanation of diagram]*

#### <State Diagram 2>

*[Diagram & Explanation of diagram]*

.

.

.

#### <State Diagram n>

*[Diagram & Explanation of diagram]*

# References

*[This section should provide a complete list of all documents referenced at specific point in time. Each document should be identified by title, report number (if applicable), date, and publishing organization. Specify the sources from which the references can be obtained (This section is like the bibliography in a published book)].*

# Appendices

*[Include supporting detail that would be too distracting to include in the main body of the document.]*