



***Software Requirement and Design Specifications***

***Social Butterfly***

***Version: 0.1***

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| --- | --- |
| *Course Code* |  |
| *Instructor* |  |
| *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.*

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## 1. Introduction

#### 1.1. Purpose of Document

This document’s purpose is to explain the working of our project, Social butterfly. And to make it easier for the reader to understand the underlying architecture and limitations of it as well.

#### 1.2. Intended Audience

This document is intended for our course instructor and peers.

#### 1.3 Definition of Terms, Acronyms and Abbreviations

|  |  |
| --- | --- |
| **Term** | **Description** |
| SB | Social Butterfly |
|  | Design Specification |
|  |  |
|  |  |
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|  |  |

#### 1.4 Document Convention

This document will be using Arial font at 10 font size for paragraphs and various font sizes for headings and titles. It will also use **bold** and *italics* for emphasis where required.

## 2. Overall System Description

#### 2.1. Project Background

The project aims to help the developers learn how gigantic social networking websites function. As well as how their development process goes.

#### 2.2. Project Scope

The project aims to incorporate the main basic functionalities required for a social networking website to function. Secure account management and interacting with other users is the core part of the project.

#### 2.3. Not in Scope

The project at this stage does not intend to compete with any existing social networking service. Additionally the project is not intended to be used commercially, therefore it has no monetization features.

#### 2.4. Project Objectives

The project objectives include learning how social networking websites work. How they are developed and maintained.

#### 2.5. Stakeholders

[This section will describe stakeholders of the system. This will include different business user classes that are expected to interact with system and similarly the technical people who are going to be involved in software development/management]

#### 2.6. Operating Environment

The software is web based, meaning it will work on any modern desktop web browser (tested on Chrome 71) regardless of operating system. Hardware wise is required a widescreen to work properly, i.e. smartphones and handheld devices are not supported at this time. The interface required a keyboard and mouse to interact.

#### 2.7. System Constraints

* Modern web browser required (tested on Chrome 71)
* English language interface
* Currently works on localhost, once live it will require internet access to use

#### 2.8. Assumptions & Dependencies

[This section will identify:

* Any assumptions taken regarding the system or environment
* Any dependency of system on any external factor.]

## 3. External Interface Requirements

[This section is intended to specify any requirements that ensure that the new system will connect properly to external components. Place a context diagram showing the external interfaces at a high level of abstraction.]

#### 3.1. Hardware Interfaces

[Describe the characteristics of each interface between the software and hardware components of the system. This description might include the supported device types, the nature of the data and control interactions between the software and the hardware.]

#### 3.2. Software Interfaces

[Describe the connections between this system and other external software components (identified by name and version), including databases, operating systems, tools, libraries, and integrated commercial components. Identify and describe the purpose of the data items or messages exchanged among the

software components. Describe the services needed and the nature of the inter-component communications. Identify data that will be shared across software components. ]

#### 3.3. Communications Interfaces

[Describe the requirements associated with any communication functions the system will use, including email, web browser, network communications standards or protocols, electronic forms, and so on. Define any pertinent message formatting. Specify communication security or encryption issues, data transfer rates, and synchronization mechanisms.]

## 4. Functional Requirements

### *4.1. Functional Hierarchy*

*[This section will give a big picture of overall system functionality. The main modules/features of system and their sub-functions will be described here in the form of a functional hierarchy so that, before getting into the use case, audience could grab the idea of overall system functions.]*

#### 4.2. Use Cases

##### 4.2.1. [Title of use case]

*[Use Case Diagram]*

*[Use Case Description]*

|  |  |
| --- | --- |
| ***Use Case Description*** | |
| ***Use Case name:*** |  |
| ***Use Case Description:*** | |
| ***Primary actor:*** | ***Other actors:*** |
| ***Stakeholders:*** |  |
| ***Relationships*** ***Includes:***   ***Extends:*** | |
| ***Pre-conditions:***   | |
| ***Flow of Events:***  ***1. Actor does.…***  ***3.***  ***4.*** | |
| ***Alternative and exceptional flows:***  ***4.1*** *….* | |
| ***Post-conditions:***   | |

## 5. Non-functional Requirements

#### 5.1. Performance Requirements

[The performance characteristics of the system that are required by the business should be outlined in this section. Performance characteristics include the speed, precision, concurrency, capacity, safety, and reliability of the software. These characteristics define the performance of the project.]

#### 5.2. Safety Requirements

Not applicable

#### 5.3. Security Requirements

The information entered by the user and the posts made by the user as well as the profile picture uploaded is publically visible. Users must observe caution while using the website.

#### 5.4. User Documentation

Not applicable

## SDS

# 6. 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].*

### 6.1. 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 will use UML diagrams (Deployment and Component diagrams) to document the overall system architecture. ]*

### 6.2. 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]*

# 7. 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]*

# 8. 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]*

### 8.1. Database Design

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

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

***8.1.1. ER Diagram***

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

***8.1.2. Data Dictionary***

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

***8.1.2.1 Data 1***

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

8.1.2.2. Data 2

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

*.*

*.*

8.1.2.3 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/howused*** | | *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]* |
|  |  | |  |  |  |  |  |

## 9. Application Design

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

* *Detailed Sequence diagram and Collaboration diagram with parameter list*
* *State Transition Diagram*
* *Activity Diagram*

***9.1.2. Sequence Diagram***

***9.1.2.1 <Sequence Diagram 1>***

*[Diagram & Explanation of diagram]*

9.1.2.2 <Sequence Diagram 2>

*[Diagram & Explanation of diagram]*

*.*

*.*

***9.1.2.3 <Sequence Diagram n>***

*[Diagram & Explanation of diagram]*

***9.1.3. State Diagram***

***9.1.3.1 <State Diagram 1>***

*[Diagram & Explanation of diagram]*

9.1.3.2 <State Diagram 2>

*[Diagram & Explanation of diagram]*

*.*

*.*

*.*

***9.1.3.3 <State Diagram n>*** *[Diagram & Explanation of diagram]*

***9.1.4. Activity Diagram***

***9.1.4.1 <Activity Diagram 1>***

*[Diagram & Explanation of diagram]*

***9.1.4.2 <Activity Diagram 2>***

*[Diagram & Explanation of diagram]*

## 10. 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).]*

## 11. Appendices

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