Deliverable #1 Template

SE 3A04: Software Design II – Large System Design

1 Introduction

The following is a description of the product to be developed, as well as an overview of the SRS.

1.1 Purpose

[[spacebase13]] is a mobile simulation game that models the overall behavior of a space settlement on a celestial body, i.e. a real-life system. The game represents how different sub-systems interact with each other and affect the overall system. It replicates how each of the sub-systems of a space base react to different stimuli from outside of the system. Therefore, the player must ensure that the sub-systems are working in the desired fashion to keep the base operating. The purpose of this document is to provide a general description of this project and to specify the requirements for this game. It is meant to be a form of communication between the developers of this game and its clients, i.e. Dr. Ridha Khedri and the teaching assistants for SFWR ENG 3A04. The SRS is also meant to be used as a reference by the developers to ensure that the specified requirements have been fulfilled.

1.2 Scope

The focus of this SRS is the development of the software product, [[spacebase13]. The game mimics the operations of a space settlement, and places the user as the head of the base. Hence, the key duty of the player is to ensure that the base remains operating. The player does this by keeping an eye on all the sub-systems and maintaining them whenever there is a need. This will be done by assigning tasks to all the members of the base, which could be anything from fixing a breach in the walls of the base to interaction with alien flora and fauna. If there are multiple stimuli happening concurrently, then the player must prioritize the tasks, based on how critical they are and on what level they affect the safety of the community. The main objective of this game is to provide entertainment to its users. However, it will also develop time management skills of the users, as well as improve their multitasking abilities.

1.3 Definitions, Acronyms, and Abbreviations

None were used for this document.

1.4 References

No references were used for this document.

1.5 Overview

This document describes the product software that is to be developed as well as the requirements specifications.

- The second section of this document provides an overall description of the game. It provides product perspective when compared to another related product. It describes major functions of the product as well as the user characteristics. It also explains the constraints of the system as well as the assumptions for this project.

- The third section of this document specifies the functional software requirements of this game. It provides sufficient details to design a system with the specific requirements and to test that the design has fulfilled those requirements.
- The final section of the document is the non-functional requirements, which vary from different perceptions and are used to ensure successful integration of the game into society.
- A Division of Labour section is also placed at the end of the document which details the contributions of each team member.

2 Overall Description

The following is a general description of the product and its requirements. For more specific requirements, see the requirements sections.

2.1 Product Perspective

[[spacebase13]] is an independent and totally self-contained system. It does not require network communication to function normally. [[spacebase13]] will contain elements of various existing simulation games such as [[dwarf fortress]], but is not intended to completely emulate any of them. The simulation is intended for entertainment purposes only, so bears only a thematic relationship to some scientific simulation software. As [[spacebase13]] is an Android app, it may be distributed on the Google Play Store, but that does not constitute part of the system.

2.2 Product Functions

1. The user will be able to view compositions of various sub-views of the system. Each sub-view corresponds to a different subsystem.
2. The user will be able to stimulate the system. Each stimuli will be able to one or many subsystems, with reactions cascading appropriately. Each subsystem will have at least 1 stimuli.
3. The application will simulate the various subsystems and their interactions.
4. Major ways the user will be able to interact with the system include: expanding their station, issuing orders to the population, and managing power and atmospheric controls of their station.

2.3 User Characteristics

Users are expected to have at least a high school level diploma and reading level. Users are expected to be generally familiar with the Android operating system and Android apps. Users are expected to have only a cursory understanding of the subject matter, as [[spacebase13]] is intended for entertainment rather than scientific simulation.

2.4 Constraints

The following are constraints on the development of the system.

1. The system must be produced as an Android app.
2. The system must consist of several separate subsystems. (at least 3)

2.5 Assumptions and Dependencies

The following are assumptions that affect the requirements for the system.

1. It is assumed that the device running [[spacebase13]] will have the Android operating system available.
2. It is assumed that the application will be run with sufficient privileges to read and write necessary files on the device.
3. It is assumed that the device will have access to the Google Play Store (or an alternate distribution method if one is chosen).

2.6 Apportioning of Requirements

The following requirements may be delayed until future versions of the system.

1. Functionality allowing the user to showcase their system (for example on social media).
2. Functionality allowing the user to swap between multiple saved states. (or to save their state at all)
3. Non-token graphical features.
4. More than the minimum number of subsystems.
5. Ability to enable or disable subsystems at runtime.

3 Functional Requirements

This section of the SRS should contain all of the software requirements to a level of detail sufficient to enable designers to design a system to satisfy those requirements, and testers to test that the system satisfies those requirements. Throughout this section, every stated requirement should be externally perceivable by users, operators, or other external systems. These requirements should include at a minimum a description of every input (stimulus) into the system, every output (response) from the system, and all functions performed by the system in response to an input or in support of an output.

You normally have two options for organizing your functional requirements:

1. Organize first by *business events*, then by *viewpoints*
2. Organize first by *viewpoints*, then by *business events*

Choose the one which makes the most sense.

For example, if you wish to organization by business events:

BE1. Business Event

- VP1.1 Viewpoint
  - i. Requirement
  - ii. Requirement
  - iii. ...
- VP1.2 Viewpoint
  - i. Requirement
  - ii. Requirement
  - iii. ...
- VP1.3 ...

BE2. Business Event

- VP2.1 Viewpoint

i. Requirement
ii. Requirement
iii. ...

VP2.2 Viewpoint

i. Requirement
ii. Requirement
iii. ...

VP2.3 ...

OR, if you wish to organization by viewpoints:

VP1. Viewpoint

BE1.1 Business Event

i. Requirement
ii. Requirement
iii. ...

BE1.2 Business Event

i. Requirement
ii. Requirement
iii. ...

BE1.3 ...

VP2. Viewpoint

BE2.1 Business Event

i. Requirement
ii. Requirement
iii. ...

BE2.2 Business Event

i. Requirement
ii. Requirement
iii. ...

BE2.3 ...

4 Non-Functional Requirements

4.1 Look and Feel Requirements

4.1.1 Appearance Requirements

LF1.

4.1.2 Style Requirements

LF1.

4.2 Usability and Humanity Requirements

4.2.1 Ease of Use Requirements

UH1.

4.2.2 Personalization and Internationalization Requirements

UH1.

4.2.3 Learning Requirements

UH1.

4.2.4 Understandability and Politeness Requirements

UH1.

4.2.5 Accessibility Requirements

UH1.

4.3 Performance Requirements

4.3.1 Speed and Latency Requirements

PR1.

4.3.2 Safety-Critical Requirements

PR1.

4.3.3 Precision or Accuracy Requirements

PR1.

4.3.4 Reliability and Availability Requirements

PR1.

4.3.5 Robustness or Fault-Tolerance Requirements

PR1.

4.3.6 Capacity Requirements

PR1.

4.3.7 Scalability or Extensibility Requirements

PR1.

4.3.8 Longevity Requirements

PR1.

4.4 Operational and Environmental Requirements

4.4.1 Expected Physical Environment

OE1.

4.4.2 Requirements for Interfacing with Adjacent Systems

OE1.

4.4.3 Productization Requirements

OE1.

4.4.4 Release Requirements

OE1.

4.5 Maintainability and Support Requirements

4.5.1 Maintenance Requirements

MS1.

4.5.2 Supportability Requirements

MS1.

4.5.3 Adaptability Requirements

MS1.

4.6 Security Requirements

4.6.1 Access Requirements

SR1.

4.6.2 Integrity Requirements

SR1.

4.6.3 Privacy Requirements

SR1.

4.6.4 Audit Requirements

SR1.

4.6.5 Immunity Requirements

SR1.

4.7 Cultural and Political Requirements

4.7.1 Cultural Requirements

CP1.

4.7.2 Political Requirements

CP1.

4.8 Legal Requirements

4.8.1 Compliance Requirements

LR1.

4.8.2 Standards Requirements

LR1.

A Division of Labour

Include a Division of Labour sheet which indicates the contributions of each team member. This sheet must be signed by all team members.

IMPORTANT NOTES

- Be sure to include all sections of the template in your document regardless whether you have something to write for each or not
  - If you do not have anything to write in a section, indicate this by the *N/A*, *void*, *none*, etc.
- Uniquely number each of your requirements for easy identification and cross-referencing
- Highlight terms that are defined in Section 1.3 (**Definitions, Acronyms, and Abbreviations**) with **bold**, *italic* or underline
- For Deliverable 1, please highlight, in some fashion, all (you may have more than one) creative and innovative features. Your creative and innovative features will generally be described in Section 2.2 (**Product Functions**), but it will depend on the type of creative or innovative features you are including.