EyeBallin’ WRS

Team Bob’s Bullies

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# Revision History

Version 0.1 3:00pm 10-07-19

Preliminary layout of the document is set up.

# 1. Introduction

## 1.1 Purpose

We are creating an android app to assist the visually impaired to allow indoor navigation to different rooms across floors.

## 1.2 Scope

To keep the project do-able, we are focusing only on the inside of the WSU Everett building.

## 1.3 Objectives and Success Criteria

We are aiming to complete a functional prototype by the end of the semester to allow a user to start from one place within

## 1.4 Definitions, Acronyms, and Abbreviations

Idk some stuff will go here

## 1.5 Overview

What is the difference between this and purpose?

# 2. Preliminary Definition

## 2.1 Preliminary Domain

|  |  |
| --- | --- |
| **PD\_ID** | **Preliminary Domain Description** |
| PD1 | Elderly with speech, hearing, vision, muscle weakness, or memory loss. |
| PD2 |  |

## 2.2 Preliminary Functional Requirements (Tim)

|  |  |
| --- | --- |
| **P FR\_ ID** | **Preliminary FR Description** |
| PFR1 | Generating desired sentences and representing them pictorially as well as associating with an sound/voice. |
|  |  |

## 2.3 Preliminary Non-Functional Requirements

|  |  |
| --- | --- |
| **PNFR\_ ID** | **Preliminary NFR Description** |
| PNFR1 | Generating desired sentences and representing them pictorially as well as associating with a sound/voice. |
|  |  |

# 3. Issues with the Preliminary Definition Given

## 3.1 Domain Issues

|  |  |  |
| --- | --- | --- |
| **Domain Issue ID** | **Domain Issue Description** | |
| DI1 | PD\_ID | PD1. People with vision and hearing impairedness, memory loss. |
| 1. Ambiguous or incomplete. Each category can cover a wide range of disabilities resulting in widely varying levels of impairment. 2. Unsound: issues of muscle weakness are unlikely to be helped via a phone app. What functional requirements might help such a person? | |
| Option 1 | Consider which categories of disability we can easily support with the minimum number of functional requirements and prioritize functional requirements to target those first. |
| Option 2 | Consider which categories of disability have the most sufferers and prioritize the requirements that target those first. |
| Option 3 | For each category of disability, research characteristics that define levels of minimal, moderate, and severe disability. Identify requirements that will aid each category and level, and determine if there are levels of disability that the team cannot realistically support. |
| Choice | Option 3 |
| Rationale | Option three provides the most complete domain knowledge of the listed options. It also provides greater granularity when conducting traceability of requirements to problems within the domain. |
| Revised wording |  | 3.1.8.1 |

## 3.2 Functional Requirements Issues

|  |  |  |
| --- | --- | --- |
| **FR Issue ID** | **Description** | |
| FRI1 | PFR\_ID | PFR1. Having an accurate and detailed map of the inside of WSU Everett, including floors. |
| 1. How to decide where the map data will come from. | |
| Option 1 | Use Google Maps Indoors API |
| Option 2 | Use Google Maps Indoors API and add our own floor data |
| Option 3 | Create our own floor map and add our own data |
| Choice | Option 2 or 3 |
| Rationale | The Google Maps Indoors API does not currently have the insides of the WSU Everett building mapped out. So we need to figure out either how to use their API with our own data, or create our own API with our own data |
| Satisfied by | FR1 | |

## 3.3 Non-Functional Requirements(NFR) Issues

|  |  |  |
| --- | --- | --- |
| **NFR Issues ID** | **Description** | |
| NFRI1 | PNFR\_ID | PNFR1. The system shall be secure. |
| What is the definition of security? | |
|  | |
|  |  |
| Option1 | Confidentiality |
| Option2 | Integrity |
| Option3 | Authentication |
| Choice | 1 |
| Rationale | For the particular smartphone app. being considered, confidentiality seems the most relevant (in relation to HIPAA). |
|  |  |
|  |  |
| Satisfied by |  | |

# 

|  |  |  |
| --- | --- | --- |
| **NFR Issues ID** | **Description** | |
| NFRI2 | PNFR\_ID | PNFR1. The system shall be usable. |
| What mechanism does the system support for Confidentiality? | |
|  | |
|  |  |
| Option1 | Password |
| Option2 | Access Card |
| Option3 | Retinal Scan |
| Choice | 1 + 2 |
| Rationale | Easy to implement and cheap, and yet provides a satisfactory level of assurance. |
|  |  |
|  |  |
| Satisfied by |  | |

# 4. WRS

## 4.1 W

### 4.1.1 Problem

|  |  |  |
| --- | --- | --- |
| **Problem ID** | **Problem Description** | **Corresponding Goals** |
| P1 | What does this even mean?????? | G1 |
| P2 |  |  |
| P3 |  |  |
| P4 |  |  |

### 4.1.2 Goals

|  |  |  |  |
| --- | --- | --- | --- |
| **Goal ID** | **Goal Description** | **Backward Traceability** | **Forward Traceability** |
| G1 |  | P1 | FO1 |
| G2 |  | P1 |  |
| G3 |  | P1 |  |
| G4 |  | P1 |  |
| G5 |  | P2 |  |

### 4.1.3 Improved Understanding of Domain, Stakeholders, Functional, and Non-Functional Objectives

#### 4.1.3.1 Improved Domain

|  |  |
| --- | --- |
| **Improved Domain ID** | **Improved Domain Description** |
| ID1 | HOPE shall provide functions that allow a person suffering from one or more disabilities listed in 3.1.3.1 to augment their ability to communicate in order to conduct their daily activities. |
|  |  |
|  |  |

#### 4.1.3.2 Stakeholders

|  |
| --- |
| Stakeholders |
| Bolong |
| Visually Impaired people |
| Investors |
| Meme Connoisseurs |

#### 4.1.3.3 Improved Functional Objectives (Tim)

Based on the above information and our goals, the functional objectives of HOPE are:

|  |  |  |  |
| --- | --- | --- | --- |
| **Improved FR**  **Objective ID** | **Objective Description** | **Alleviates Problems** | **Achieves Goals** |
| IFRO1 | HOPE shall provide functions that allow a person suffering from one or more disabilities listed in 3.1.3.1 to augment their ability to communicate in order to better conduct their daily activities. | P1 | G1, G4 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

#### 4.1.3.4 Improved Non-Functional Objectives

|  |  |  |  |
| --- | --- | --- | --- |
| **Improved NFR**  **Objective ID** | **Objective Description** | **Alleviates Problem** | **Achieves Goal** |
| INFRO1 |  | P1 | G2 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

## 4.2 RS

### 4.2.1 Functional Requirements (Tim)

|  |  |
| --- | --- |
| **FR ID** | **Description** |
| FR1 | If a user makes a sound to the system, the system shall make a sentence from the detected sound. |
| Satisfies Functional Requirement Issue | FRI1 |
| Satisfies Objectives | FO1, FO2, FO3 |
| Satisfied by prototype feature |  |

* This has to be further refined in terms of specification(s).

### 4.2.2 Non-Functional Requirements

|  |  |  |
| --- | --- | --- |
| **NFR ID** | **Nonfunctional Requirement 1** | |
| NFR1 | The system shall be secure, which means confidentiality. | |
| Operationalized Functional Requirements | OFR1  OFR2 | The system shall provide login function with password .  The system shall read access card. |
| Satisfies Nonfunctional Requirement Issue | NFRI1 | |
| Satisfies Non-functional Objective | NFO2 | |
| Constrains | FO1, FO2, FO3, FO4 | |
| Satisfied by prototype feature |  | |

### 4.2.3 Specifications

|  |  |
| --- | --- |
| **Functional Specification ID** | **Functional Requirement** |
| FS1 | If a textual sentence is entered to the system, the system shall make a sound corresponding to the input sentence. |
| Satisfies Functional Requirement | FR1 |
| Satisfies Objectives | FO1, FO2, FO3 |
| Satisfied by prototype feature |  |

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# 5. Preliminary Prototype

# 6. Prototype Interface Mock-ups

# 7. User Manual