**PO4\_DGELV\_DIGITAL ELEVATOR**

**SRS DOCUMENT**

**Version 1.6**

**Document Status**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Document Name** | **Author** | **Last Modified** | **Version** | **Status** |
| PO4\_DGELV\_DIGITALELEVATOR\_SRS | Mostafa Sayed | 2/16/2020 | 1.7 | Proposed |

**Revision History**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Change** | **Author** | **Date** | **Version** | **Status** |
| Initial Release, specifying software used functions. | Mira Mousa | 1/24/2020 | 1.0 | Draft |
| The State machine diagram was added. | Salma Amr | 1/24/2020 | 1.1 | Proposed |
| Review points 1, 2, 3  are covered. | Salma Amr  Mira Mousa | 1/31/2020 | 1.2 | Proposed |
| Review points 4, 6, 7 are covered. | Mira Mousa | 2/4/2020 | 1.3 | Proposed |
| Document Cross Review, Updated History table | Mohamed Nafea | 2/6/2020 | 1.4 | Proposed |
| Review points 5, 8, 9, 10, 11 are covered. | Mira Mousa | 2/9/2020 | 1.5 | Proposed |
| Reviewed and test scopes are added | Salma Amr | 2/12/2020 | 1.6 | Proposed |
| Review, update SRS according to Review of V1.4  Change the designs of the table | Mostafa Sayed | 2/16/2020 | 1.7 | Proposed |

**Reference History**

|  |  |  |
| --- | --- | --- |
| **Reference Document** | **Version** | **Status** |
| PO4\_DGELV\_DIGITALELEVATOR\_CYRS | 1.4 | Released |
| PO4\_DGELV\_DIGITALELEVATOR\_HSI | 1.3 | Released |

**Table of Contents**

Table of Contents

[1.Introduction 4](#_Toc32876834)

[1.1 Purpose 4](#_Toc32876835)

[1.2 Specification Objectives 4](#_Toc32876836)

[1.3 Project Description 4](#_Toc32876837)

[2. System Overview 4](#_Toc32876838)

[2.1 Definition 4](#_Toc32876839)

[2.2 Software Requirement 5](#_Toc32876840)

[2.2.1 Logging system 5](#_Toc32876841)

[2.2.2 First calling 5](#_Toc32876842)

[2.2.3 Logining In 6](#_Toc32876843)

[2.2.4 Elevator movement 8](#_Toc32876844)

[2.2.5 Reset 8](#_Toc32876845)

# 

# 1.Introduction

This section introduces the software requirements specification (SRS) for Digital Elevator project with locking system.

## 1.1 Purpose

This SRS the software functional and nonfunctional requirements.

## 1.2 Specification Objectives

The objectives of this system are to:

* Provide a Software system overview for a digital Elevator with lock system.
* Specify the software requirement to control the hardware for the user interface.
* Specify the software requirement to control the movements of the digital Elevator.

## 1.3 Project Description

The major feature of the digital elevator as listed below:

* Check if the user is signed in/up or not.
* Check the limit number of users (maximum number of users is 10).
* Display the status using a user-friendly interface.
* Require the password and userID.
* Two buttons to control the system:

1. Button for up movement.
2. Button for down movement.
3. Pushing Two Buttons together resets the system.

# 2. System Overview

## 2.1 Definition

The digital Elevator has a lock system with 10 users storing capability that can be configured and edited by the user with high security sequence to ensure that only approved users can use the elevator.

The system controls the movement of the motors and user interface features of the elevator.

## 2.2 Software Requirement

### 2.2.1 Logging system

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_01\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/3/2020 |
| **Description** | * This software shall accept users from 0 to NumberOfUsers, NumberOfUsers = 10. * When UserNum is more than NumberOfUsers then the system will reject it. * Status shall be Accepted or Rejected. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_01\_V1\_4 | | |
| **Input** | UserNum as userID from 0 to NumberOfUsers | | |
| **Output** | Status (Accepted/Rejected) | | |
| **Test Scope** | VTD | | |

### 2.2.2 First calling

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_02\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/3/2020 |
| **Description** | * Software shall ask the user for NewID with limitation of 10 characters and NewPassword with limitation of 4 digits. * Status can be ValidSignUp or InvalidSignUp. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_02\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_08\_V1\_3 | | |
| **Input** | NewID, NewPassword | | |
| **Output** | Status | | |
| **Test Scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_03\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/3/2020 |
| **Description** | * Software shall check if NewID is already taken, the software asks for another one and increment number of trials NumOfTrials. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_09\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_08\_V1\_3 | | |
| **Input** | NewID, NewPassword | | |
| **Output** | Status | | |
| **Test Scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_04\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/10/2020 |
| **Description** | * Software shall check NumOfTrials if Exceeded 3, it returns Status = Blocked. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_09\_V1\_4 | | |
| **Input** | NumOfTrials | | |
| **Output** | Status | | |
| **Test Scope** | ITD | | |

### 2.2.3 Logining In

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_05\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/3/2020 |
| **Description** | * Software shall ask the user for UserID and UserPass to be able to use the elevator. * if Correct, return Status=LoggedIn else Status=LoginError | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_08\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_08\_V1\_3 | | |
| **Input** | UserID ,UserPass. | | |
| **Output** | Status | | |
| **Test Scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_06\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/10/2020 |
| **Description** | * Software shall check status is LoggedIn ,it displays Ok on LCD (LCDOK\_Signal). | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_08\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_07\_V1\_3 | | |
| **Input** | Status | | |
| **Output** | LCDOK\_Signal | | |
| **Test Scope** | VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_07\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/10/2020 |
| **Description** | * Software shall check status if LoginError, it displays not Ok on LCD (LCDNOK\_Signal). | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_08\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_07\_V1\_3 | | |
| **Input** | Status | | |
| **Output** | LCDNOK\_Signal | | |
| **Test Scope** | VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_08\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/10/2020 |
| **Description** | * Software shall check status if LoginError, it enables buzzer sound (BUZZERON\_Signal). | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_03\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_06\_V1\_3 | | |
| **Input** | Status | | |
| **Output** | BUZZERON\_Signal | | |
| **Test Scope** | VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_09\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/3/2020 |
| **Description** | * Software shall check status if loginError found , Allow the user for another trial and increment NumTrials. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_04\_V1\_4 | | |
| **Input** | Status | | |
| **Output** | NumTrials | | |
| **Test Scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_10\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/10/2020 |
| **Description** | * Software shall check NumTrials if it Exceeds 3 trials The system Status will be TempBlocked. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_04\_V1\_4 | | |
| **Input** | NumTrials | | |
| **Output** | Status | | |
| **Test Scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_11\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/10/2020 |
| **Description** | * Software shall check if Status is TempBlocked then the system will be blocked for 3 seconds. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_04\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_04\_V1\_3 | | |
| **Input** | Status | | |
| **Output** | None | | |
| **Test Scope** | VTD | | |

### 2.2.4 Elevator movement

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_12\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/3/2020 |
| **Description** | * Software shall read the Up/Down switches signal to control the movement then return Status = UpMove or Status = DownMove. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_05\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_03\_V1\_3 | | |
| **Input** | BUTTONUP, BUTTONDOWN. | | |
| **Output** | Status | | |
| **Test Scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_13\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/10/2020 |
| **Description** | * Software shall check Status for deciding movement direction if UpMove was detected, the signal moves the elevator up else DownMove, the signal moves the elevator Down. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_06\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_02\_V1\_3 | | |
| **Input** | Status | | |
| **Output** | SignalUp or SignalDown. | | |
| **Test Scope** | ITD | | |

### 2.2.5 Reset

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_14\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/3/2020 |
| **Description** | * This software shall detect if the up/down push buttons are pressed together for 2 sec and change the Status to reset. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_07\_V1\_4  REQ\_ PO4\_DGELV \_HSI\_04\_V1\_3 | | |
| **Input** | SignalUp and SignalDown. | | |
| **Output** | Status | | |
| **Test Scope** | VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_ PO4\_DGELV \_SRS\_15\_V1\_5 | | |
| **Author** | Mira Mousa | **Date** | 2/10/2020 |
| **Description** | * This software shall detect if the Status is reset the system will be cleared and the status returned NotsignedIn. | | |
| **Coverage** | REQ\_ PO4\_DGELV \_CYRS\_07\_V1\_4 | | |
| **Input** | Status | | |
| **Output** | Status | | |
| **Test Scope** | VTD | | |