Project Test Plan

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# Introduction

This document shall be used to create a test plan for the medical project.

## Objectives

The main objective of this document is to come up with all the necessary parts of a fully-fledged test plan. This includes identifying the scope of testing that will be done, identifying any references needed to perform the testing, defining the environment in which the tests will be run, and identifying the classifications of the tests themselves. This document will also explore any risks involved with meeting the test plan. Approvals will be noted at the end of the document.

# Scope

## Identification

This test plan covers the testing of two key pieces of software, the data collection software and the data analysis software. All testing outlined in this document must be run against the final version of these software. The final version of the application containing both pieces of software that passes all testing shall be known as version Med656 1.0.

## System Overview

The medical project will consist of two pieces of software. The first being a data collection tool, and the second being software that will be used to analyze data collected into a database by the first tool. The two pieces of software are described below.

The data collection portion of this project will consist of the following. There are several different medical devices to be used for this project that record various types of data. The data provided by these devices consists of different file formats, and the data is different from device to device. The data files from the device will likely be exported in one zip file that will need to be extracted and processed, however the contents of the zip files will vary. The software will have to determine the contents of the zip file and how to process the files within. Due to how long data transfers take to download the data from a device, there may be a need to convert the data from a binary format to another format in order to speed up the process of getting data off the device. The software needs to able to take in files provided by the medical devices and be able to translate them in a way where they can be stored in a database. The software needs to run in the background of a PC and wait for files that need to be processed. The software will have to interact with a database to insert the data that has been processed in order for the data to be stored for later analysis. The software should allow for some basic configuration such as designating a folder on the PC to be a listener. Files moved or copied into this folder will be processed by the software when they are added. The software should have the ability to process multiple zip files if more than one is placed into the processing folder at a time.

Data analysis software needs to be created to analyze the data that is captured from the data collection tool mentioned above. This piece of software will be a separate stand-alone application that may need to be implemented within the current UAH Medical Web Portal. The software needs to perform data analysis over different intervals of time such as one week, one month, etc. There will need to be some way to manage user access to the various medical data that has been inserted into the database that this software will access. Below are some proposed data analysis ideas that can be incorporated into the project.

• Simple Moving Average

• Data correlation discovery between the multiple devices.

• Possibly determine when an individual moves from walking to running or simply being able to identify the activities that were being performed while the data was being captured.

The data analysis possibilities will likely not fully be realized until the project team understands the different types of data that are available. Also, there will need to be collaboration with the customer for additions or changes to the data measurements provided by this software.

## Document Overview

This document contains information relevant only to the software, testing, and planning associated with such. None of the material in this document is to contain actual names, medical data, or information about actual people living or dead. Medical information is private and no actual data from actual people will be included in this document. As such, this document may be distributed freely and made publicly available.

## Relationships

This document is closely related to the Software Development Plan (SDP). As the SDP is created, this document will need to be maintained to keep its relevance. Any tests described by this document will be closely related to the features, classes, or functions described in the SDP and thus as these elements are updated or changed, this document will need to be updated or changed. Updates to this document will be under revision control as described in the Configuration Management Plan.

# References

# Software Test Environment

This section describes the test environment. There will be 2 test environments. One for the data collection software and another for the data analysis software.

## Data Collection Test Environment

### Software

Tools to be used during testing of the data collection software are listed below. A detailed description of the tool, its intended use, where or who to get it from and any other relevant details are below.

* Visual Studio (x.x.x) – This tool will be utilized for local development of the software, but also development and execution of unit tests. Visual Studio x.x.x and the unit test plugin can be obtained here: \*\*\* and \*\*\*.
* Windows 7 – This will be the developing OS. All development and testing should be performed on this OS for this piece of software.
* GitHub – This is the repository software to be used to store all tests.
* Mock Database – This has not been decided upon yet, but there will need to be a mock database of some sort to test the data collection software against. It will be the responsibility of the team to find or create this tool.

### Hardware and Firmware

Hardware to be used during testing of the data collection software is listed below. A detailed description of the hardware, its intended use, where or who to get it from and any other relevant details are below.

* PC – a PC will be required for testing. This will be the responsibility each team member to provide for himself.
* Internet Connection – an internet connection will be required for saving and retrieving the tests. It is also the responsibility of each team member to provide this for himself.

### Other Materials

Any other materials to be used during testing of the data collection software are listed below. A detailed description of the material, its intended use, where or who to get it from and any other relevant details are below.

* Mock patient data – This is made up data that can be imbedded in the tests for automation purposes. This is to be provided by the team.

### Proprietary Nature, Acquirer’s Rights, and Licensing

### Installation, Testing, and Control

### Participating Organizations

### Personnel

### Orientation Plan

### Tests to be Performed

# Test Identification

## General Information

### Test Levels

### Test Classes

### General Test Conditions

### Test Progression

### Data Recording, Reduction, and Analysis

## Planned Tests

### Items to be Tested

### Project-unique Identifier of a Test

# Test Schedule

# Requirements Traceability

# Notes

# Annexes

# Risks

## Schedule

## Technical

## Management

## Personnel

## Requirements

# Approvals