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| UAHealth Bit Vault Software Test Description |
| CPE 656/658 Software Studio |
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# Revision History

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| --- | --- | --- | --- |
| Revision # | Revision Date | Description of Change | Author |
| 0.1 | 2/22/16 | Initial Draft | T. Wilkins |

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Revision History 2

# Scope

## Identification

This document shall apply to the final release of the UAHealth Bit Vault Software.

## System Overview

The UAHealth Bit Vault Software is designed to be a place for doctors, patients, and administrators to store patient’s biometric data and run experiments on that data. This is the first deployment of this system. The software will be deployed on a server in the UAH lab for Dr. Malenkovich. At the end of the development period, the software will be deployed and ownership shall be transferred to Dr. Malenkovich.

## Document Overview

This document is to describe the testing that will be performed on the UAHealth Bit Vault Software for customer acceptance. Test descriptions and all dependent information are included in this document.

# Referenced Documents

# Test Preparations

## Pytest Tests

### Hardware Preparations

In order to run the Pytest tests, you must have a physical computer capable of running the latest distribution of Ubuntu. Follow the hardware requirements for this distribution. Ubuntu is not required to run the tests, but the hardware requirements for Ubuntu serve as a minimum requirement to run the Pytest tests.

The computer you use must have access to the UAHealt server in order to run the Pytest tests. The computer can be the same machine as the UAHealth server, but this is not required.

### Software Preparations

You must have Python 3.5.1 installed on this computer. The OS may be Windows 7/2012 or later, or Ubuntu 14.04.4 LTS or later LTS version. You must also install Pytest and Selenium through “pip”.

### Other pre-test Preparations

# Test Descriptions

## Pytest.CreateAccount

### Create Physician

#### Requirements Addressed

* 3.1.1.1.2.1: minimum information stored for physician account
* 3.1.1.1.4.2: System Administrators shall be able to enable users
* 3.1.1.7: Physicians create their own accounts
* 3.1.1.7.1: System Administrators shall verify the creation of a physician account
* 3.1.6.1: The system shall allow account creation
* 3.1.6.1.1: The system shall force account approval for physicians

#### Prerequisite Conditions

* Users should be logged off
* User ‘hfarsworth’ should not exist

#### Test Input

N/A

#### Expected Test Results

* User ‘hfarnsworth’ is able to log in

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Create Experiment Admin

#### Requirements Addressed

* 3.1.1.1.3.1: minimum information stored for experiment admin account
* 3.1.1.1.4.2: System Administrators shall be able to enable users
* 3.1.1.7: Experiment administrators create their own accounts
* 3.1.1.7.1: System Administrators shall verify the creation of a experiment admin account
* 3.1.6.1: The system shall allow account creation
* 3.1.6.1.1: The system shall force account approval for experiment admins

#### Prerequisite Conditions

* Users should be logged off
* User ‘awong’ should not exist

#### Test Input

N/A

#### Expected Test Results

* User ‘hfarnsworth’ is able to log in

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Create Patient

#### Requirements Addressed

* 3.1.1.1.1.1: minimum information stored for patient account
* 3.1.1.1.2.5: Physician user can add a patient to the system
* 3.1.1.3.1: Display patient ID to physician at the time of creation
* 3.1.1.7.2: Physicians shall create their patients accounts
* 3.1.6.1: The system shall allow account creation
* 3.1.6.1.2: Patients shall not need approval for account creation

#### Prerequisite Conditions

* Users should be logged off
* User ‘pfry’ should not exist

#### Test Input

N/A

#### Expected Test Results

User ‘pfry’ is able to log in

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Delete Patient

#### Requirements Addressed

* 3.1.1.1.2.6: Physicians can delete patients

#### Prerequisite Conditions

* Users should be logged off
* User ‘pfry’ should exist
* User ‘pfry’ should have a password ‘P@ssword10’

#### Test Input

N/A

#### Expected Test Results

User ‘pfry’ should not be able to login

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Delete Physician

#### Requirements Addressed

* 3.1.6.3: System administrator can delete accounts

#### Prerequisite Conditions

* Users should be logged off
* User ‘hfarnsworth’ should exist
* User ‘hfarnsworth’ should have a password ‘P@ssword10’

#### Test Input

N/A

#### Expected Test Results

User ‘hfarnsworth’ should not be able to login

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Delete Experiment Admin

#### Requirements Addressed

* 3.1.6.3: System administrator can delete accounts

#### Prerequisite Conditions

* Users should be logged off
* User ‘awong’ should exist
* User ‘awong’ should have a password ‘P@ssword10’

#### Test Input

N/A

#### Expected Test Results

User ‘awong’ should not be able to login

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

## Pytest.EditAccount

### Physician Can Edit His Account

#### Requirements Addressed

* 3.1.1.1.2.2: Physician can update his account
* 3.1.6.2: System shall allow users to edit their account

#### Prerequisite Conditions

* Users are logged off
* User ‘testPhysician’ should exist
* User ‘testPhysician’ should have a password of ‘P@ssword10’
* User ‘testPhysician’ should have email ‘tphysician@aol.com’
* User ‘testPhysician’ should have address of ‘home’
* User ‘testPhysician’ should have phone number of ‘123-456-7890’

#### Test Input

N/A

#### Expected Test Results

User should have an email of ‘tphysician@yahoo.com’

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Sys Admin Can Edit Patient Account

#### Requirements Addressed

* 3.1.1.1.4.4: System administrator can update patient account information

#### Prerequisite Conditions

* Users are logged off
* User ‘testPatient’ should exist
* User ‘testPatient’ should have a password of ‘P@ssword10’
* User ‘testPatient’ should have email ‘tpatient@aol.com’
* User ‘testPatient’ should have address of ‘home’
* User ‘testPatient’ should have phone number of ‘123-456-7890’
* User ‘fitadmin’ should exist
* User ‘fitadmin’ should have a password of ‘Password1!’

#### Test Input

N/A

#### Expected Test Results

User ‘tpatient’ should have an address of ‘somewhere else’

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Sys Admin Can Edit Exp Admin Account

#### Requirements Addressed

* 3.1.1.1.4.4: System administrator can update experiment administrator account information

#### Prerequisite Conditions

* Users are logged off
* User ‘testExpAdmin’ should exist
* User ‘testExpAdmin’ should have a password of ‘P@ssword10’
* User ‘testExpAdmin’ should have email ‘texpadmin@aol.com’
* User ‘testExpAdmin’ should have address of ‘home’
* User ‘testExpAdmin’ should have phone number of ‘123-456-7890’
* User ‘fitadmin’ should exist
* User ‘fitadmin’ should have a password of ‘Password1!’

#### Test Input

N/A

#### Expected Test Results

User ‘testExpAdmin’ should have a phone number of ‘555-555-5555’

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Sys Admin Can Edit Physician Account

#### Requirements Addressed

* 3.1.1.1.4.4: System administrator can update physician account information

#### Prerequisite Conditions

* Users are logged off
* User ‘testPhysician’ should exist
* User ‘testPhysician’ should have a password of ‘P@ssword10’
* User ‘testPhysician’ should have email ‘tphysician@aol.com’
* User ‘testPhysician’ should have address of ‘home’
* User ‘testPhysician’ should have phone number of ‘123-456-7890’
* User ‘fitadmin’ should exist
* User ‘fitadmin’ should have a password of ‘Password1!’

#### Test Input

N/A

#### Expected Test Results

User ‘testPhysician’ should have an email of ‘tpatient@uah.edu’

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

## Pytest.Login

### Login Physician

#### Requirements Addressed

* 3.1.1: System shall provide user authentication
* 3.1.1.5: System shall allow user to log out of account

#### Prerequisite Conditions

* Users are logged off
* User ‘testPhysician’ exists with password ‘P@ssword10’

#### Test Input

N/A

#### Expected Test Results

User ‘testPhysician’ is able to login to system.

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Login Experiment Admin

#### Requirements Addressed

* 3.1.1: System shall provide user authentication
* 3.1.1.5: System shall allow user to log out of account

#### Prerequisite Conditions

* Users are logged off
* User ‘testExpAdmin’ exists with password ‘P@ssword10’

#### Test Input

N/A

#### Expected Test Results

User ‘testExpAdmin’ is able to login

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Login Patient

#### Requirements Addressed

* 3.1.1: System shall provide user authentication
* 3.1.1.5: System shall allow user to log out of account

#### Prerequisite Conditions

* Users are logged off
* User ‘testPhysician’ exists with password ‘P@ssword10’

#### Test Input

N/A

#### Expected Test Results

User ‘testPatient’ is able to login

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Login System Admin

#### Requirements Addressed

* 3.1.1: System shall provide user authentication
* 3.1.1.5: System shall allow user to log out of account

#### Prerequisite Conditions

* Users are logged off
* User ‘fitadmin’ exists with password ‘Password1!’

#### Test Input

N/A

#### Expected Test Results

User ‘fitadmin’ is able to login

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Login Bad Pass

#### Requirements Addressed

* 3.1.1: System shall provide user authentication

#### Prerequisite Conditions

* Users are logged off
* User ‘testPhysician’ exists with password ‘P@ssword10’

#### Test Input

N/A

#### Expected Test Results

User ‘testPhysician’ cannot login with incorrect password

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Login Bad User

#### Requirements Addressed

* 3.1.1: System shall provide user authentication

#### Prerequisite Conditions

* User ‘fake’ does not exist

#### Test Input

N/A

#### Expected Test Results

User ‘fake’ is not able to login

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

## Pytest.Password

### Good Password

#### Requirements Addressed

* 3.1.1.4: System requires a minimum security criteria
* 3.1.1.4.1: Password must be at least 10 characters
* 3.1.1.4.2: Password shall contain at least 1 upper and 1 lower case character
* 3.1.1.4.3: Password shall contain at least 1 number
* 3.1.1.4.4: Password shall contain at least 1 special character

#### Prerequisite Conditions

* Users are logged off
* User ‘pjfry’ does not exist

#### Test Input

N/A

#### Expected Test Results

User ‘pjfry’ gets created

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation

#### Assumptions and Constraints

See WebUITestDocumentation

### Password Length

#### Requirements Addressed

* 3.1.1.4: System requires a minimum security criteria
* 3.1.1.4.1: Password must be at least 10 characters

#### Prerequisite Conditions

* Users are logged off
* User ‘pfry’ does not exist

#### Test Input

N/A

#### Expected Test Results

System generates password length error

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation

#### Assumptions and Constraints

See WebUITestDocumentation

### Password Case

#### Requirements Addressed

* 3.1.1.4: System requires a minimum security criteria
* 3.1.1.4.2: Password shall contain at least 1 upper and 1 lower case character

#### Prerequisite Conditions

* Users are logged off
* User ‘pfry’ does not exist

#### Test Input

N/A

#### Expected Test Results

System generates password case error

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation

#### Assumptions and Constraints

See WebUITestDocumentation

### Password Digit

#### Requirements Addressed

* 3.1.1.4: System requires a minimum security criteria
* 3.1.1.4.3: Password shall contain at least 1 number

#### Prerequisite Conditions

* Users are logged off
* User ‘pfry’ does not exist

#### Test Input

N/A

#### Expected Test Results

System generates password digit error

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation

#### Assumptions and Constraints

See WebUITestDocumentation

### Password Special Char

#### Requirements Addressed

* 3.1.1.4: System requires a minimum security criteria
* 3.1.1.4.4: Password shall contain at least 1 special character

#### Prerequisite Conditions

* Users are logged off
* User ‘pfry’ does not exist

#### Test Input

N/A

#### Expected Test Results

System generates a special character error

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation

#### Assumptions and Constraints

See WebUITestDocumentation

### Reset Password

#### Requirements Addressed

* 3.1.1.1.4.3: System Administrators can reset passwords

#### Prerequisite Conditions

* Users are logged off
* User ‘testPatient2’ exists with password ‘P@ssword10’
* User ‘fitadmin’ exists with password ‘Password1!’

#### Test Input

N/A

#### Expected Test Results

User ‘testPatient2’ has a new password of ‘Password1!’

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

## Pytest.Security

### Patient To Patient

#### Requirements Addressed

* 3.1.1.1.1.3: Patient cannot view other patients data

#### Prerequisite Conditions

* Users are logged out
* Users ‘testPatient’ and ‘testPatient2’ exist
* User ‘testPatient’ has a password of ‘P@ssword10’

#### Test Input

N/A

#### Expected Test Results

User ‘testPatient’ cannot navigate to ‘testPatient2’s data view

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Physician To Patient

#### Requirements Addressed

* 3.1.1.1.2.4: Physician can only view his patients data

#### Prerequisite Conditions

* Users are logged out
* Users ‘testPhysician’ and ‘testPatient2’ exist
* User ‘testPhysician’ is not ‘testPatient2’s assigned physician

#### Test Input

N/A

#### Expected Test Results

User ‘testPhysician’ is not able to view to ‘testPatient2’s data

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Patient Cannot Create Patient

#### Requirements Addressed

* 3.1.1.1.2.5: Only a physician can create a patient

#### Prerequisite Conditions

* Users are logged out
* User ‘testPatient’ exists
* User ‘testPatient3’ does not exist

#### Test Input

N/A

#### Expected Test Results

User ‘testPatient’ is not able to create user ‘testPatient3’

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Exp Admin Cannot Create Patient

#### Requirements Addressed

* 3.1.1.1.2.5: Only a physician can create a patient

#### Prerequisite Conditions

* Users are logged out
* User ‘testExpAdmin’ exists
* User ‘testPatient3’ does not exist

#### Test Input

N/A

#### Expected Test Results

User ‘testPatient3’ is not created

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

## Pytest.Upload

### Single File No Activity

#### Requirements Addressed

* 3.1.2: System shall process medical data
* 3.1.2.1: System shall process one or more medical data file at a time
* 3.1.2.3: There will be an interface to select data and activities
* 3.1.2.5: System shall process CSV files
* 3.2.4.2: System shall support Basis Peak data

#### Prerequisite Conditions

* User ‘testPatient’ exists
* User ‘testPatient’ is logged in
* Data file BasisPeak/bodymetrics.csv exists

#### Test Input

N/A

#### Expected Test Results

Data file BasisPeak/bodymetrics.csv gets uploaded

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Multi File No Activity

#### Requirements Addressed

* 3.1.2: System shall process medical data
* 3.1.2.1: System shall process one or more medical data file at a time
* 3.1.2.3: There will be an interface to select data and activities
* 3.1.2.5: System shall process CSV files

#### Prerequisite Conditions

* User ‘testPatient’ exists
* User ‘testPatient’ is logged in
* Data file BasisPeak/bodymetrics1.csv exists
* Data file BasisPeak/bodymetrics2.csv exists

#### Test Input

N/A

#### Expected Test Results

Data file BasisPeak/bodymetrics1.csv and BasisPeak/bodymetrics2.csv get uplaoded

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation

#### Assumptions and Constraints

See WebUITestDocumentation

### Single File One Activity

#### Requirements Addressed

* 3.1.2: System shall process medical data
* 3.1.2.1: System shall process one or more medical data file at a time
* 3.1.2.2: System shall provide ability to assign activity
* 3.1.2.3: There will be an interface to select data and activities
* 3.1.2.5: System shall process CSV files

#### Prerequisite Conditions

* User ‘testPatient’ exists
* User ‘testPatient’ is logged in
* Data file BasisPeak/bodymetrics3.csv exists

#### Test Input

N/A

#### Expected Test Results

Data file BasisPeak/bodymetrics3.csv is uploaded

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Multi File One Activity

#### Requirements Addressed

* 3.1.2: System shall process medical data
* 3.1.2.1: System shall process one or more medical data file at a time
* 3.1.2.2: System shall provide ability to assign activity
* 3.1.2.3: There will be an interface to select data and activities
* 3.1.2.5: System shall process CSV files

#### Prerequisite Conditions

* User ‘testPatient’ exists
* User ‘testPatient’ is logged in
* Data file BasisPeak/bodymetrics4.csv exists
* Data file BasisPeak/bodymetrics5.csv exists

#### Test Input

N/A

#### Expected Test Results

Data files BasisPeak/bodymetrics4.csv and BasisPeak/bodymetrics5.csv are uploaded

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Single File Multi Activity

#### Requirements Addressed

* 3.1.2: System shall process medical data
* 3.1.2.1: System shall process one or more medical data file at a time
* 3.1.2.2: System shall provide ability to assign activity
* 3.1.2.3: There will be an interface to select data and activities
* 3.1.2.5: System shall process CSV files

#### Prerequisite Conditions

* User ‘testPatient’ exists
* User ‘testPatient’ is logged in
* Data file BasisPeak/bodymetrics6.csv exists

#### Test Input

N/A

#### Expected Test Results

Data file BasisPeak/bodymetrics6.csv is uploaded

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Multi File Multi Activity

#### Requirements Addressed

* 3.1.2: System shall process medical data
* 3.1.2.1: System shall process one or more medical data file at a time
* 3.1.2.2: System shall provide ability to assign activity
* 3.1.2.3: There will be an interface to select data and activities
* 3.1.2.5: System shall process CSV files

#### Prerequisite Conditions

* User ‘testPatient’ exists
* User ‘testPatient’ is logged in
* Data file BasisPeak/bodymetrics7.csv exists
* Data file BasisPeak/bodymetrics8.csv exists

#### Test Input

N/A

#### Expected Test Results

Data files BasisPeak/bodymetrics7.csv and BasisPeak/bodymetrics8.csv are uplaoded

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

### Zephry Data Upload

#### Requirements Addressed

* 3.2.4.1: System shall support Zephyr data
* 3.1.2.6: System will process raw data files

#### Prerequisite Conditions

* User ‘testPatient’ is logged in
* Data file Zephyr/ZephyrTestData/accel.csv exists
* Data file Zephyr/ZephyrTestData/BB.dat exists

#### Test Input

N/A

#### Expected Test Results

Files Zephyr/ZephyrTestData/accel.csv and Zephyr/ZephyrTestData/BB.dat are uploaded

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITtestDocumentation.

### Mband Data Upload

#### Requirements Addressed

* 3.2.4.3: System shall support Microsoft Band data

#### Prerequisite Conditions

* User ‘testPatient’ is logged in
* Data file MBand/data.csv exists

#### Test Input

N/A

#### Expected Test Results

Data file MBand/data.csv is uploaded

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

## Pytest.Username

### Username Cannot Be Copied

#### Requirements Addressed

* 3.1.1.2: Usernames must be unique
* 3.1.1.2.1: Users cannot change username to an already existing username

#### Prerequisite Conditions

* User ‘testPatient’ exists
* User ‘testPatient3’ does not exist
* Users are logged out

#### Test Input

N/A

#### Expected Test Results

A second account cannot be created with username ‘testPatient’. User ‘testPatient3’ is not able to change his username to ‘testPatient’.

#### Criteria for Evaluating Results

N/A

#### Test Procedure

See WebUITestDocumentation.

#### Assumptions and Constraints

See WebUITestDocumentation.

# Annexes