UAH Bit Vault Documentation

Release 1.0

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April 22, 2016

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CHAPTER

ONE

USER GUIDE

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- User Guide
  - Overview
  - How-To

1.1 Overview

Here you can find all the documentation you will need to know how to do all the basic tasks that can be performed through the UAH Bit Vault user interface.

1.2 How-To

1.2.1 Account Management

Account management is a part of the system. Accounts may be created, deleted or edited. Follow the below TOC tree to find details on each action for each account.

Contents:

Account Creation

Table of Contents

- Account Creation
  - Physician Account
  - Experiment Admin Account
  - Patient Account
  - System Admin Account

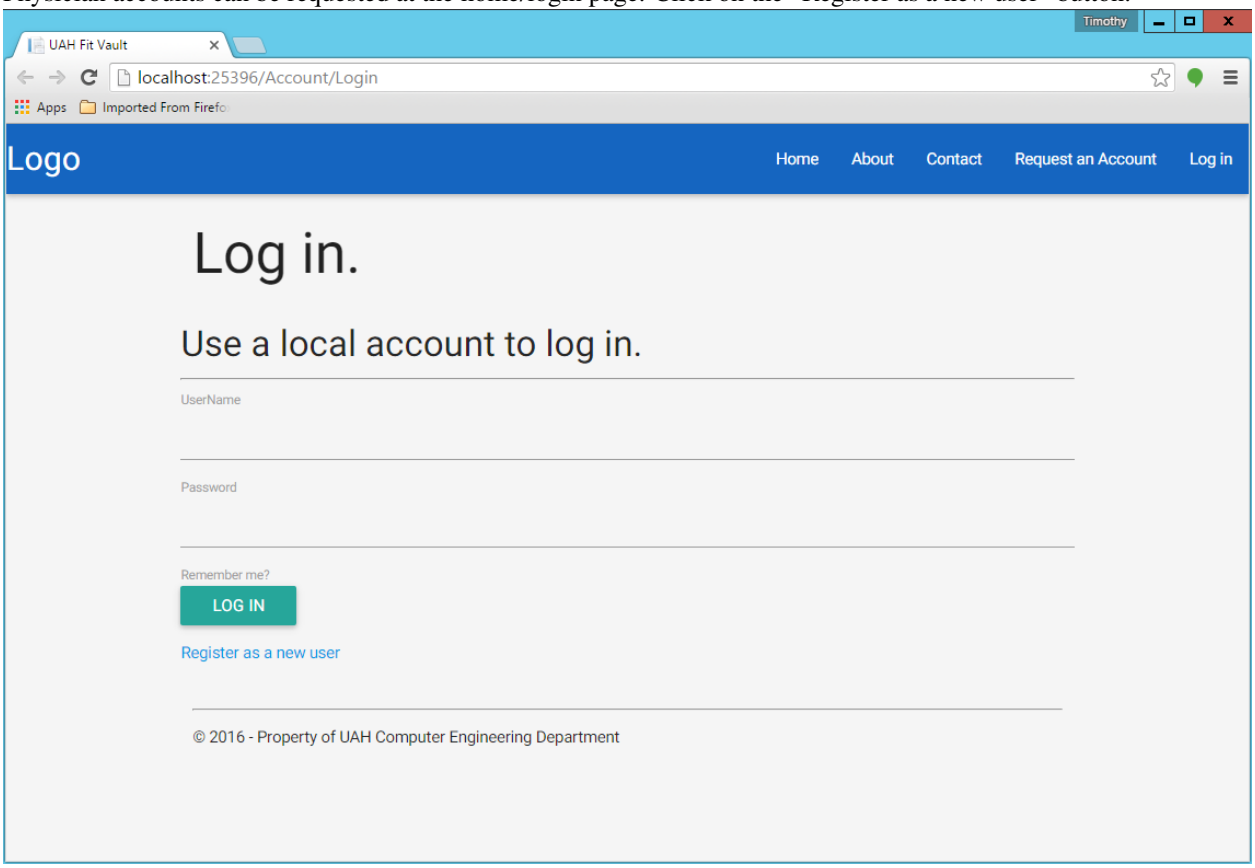
There are 4 types of accounts

- patient
- physician

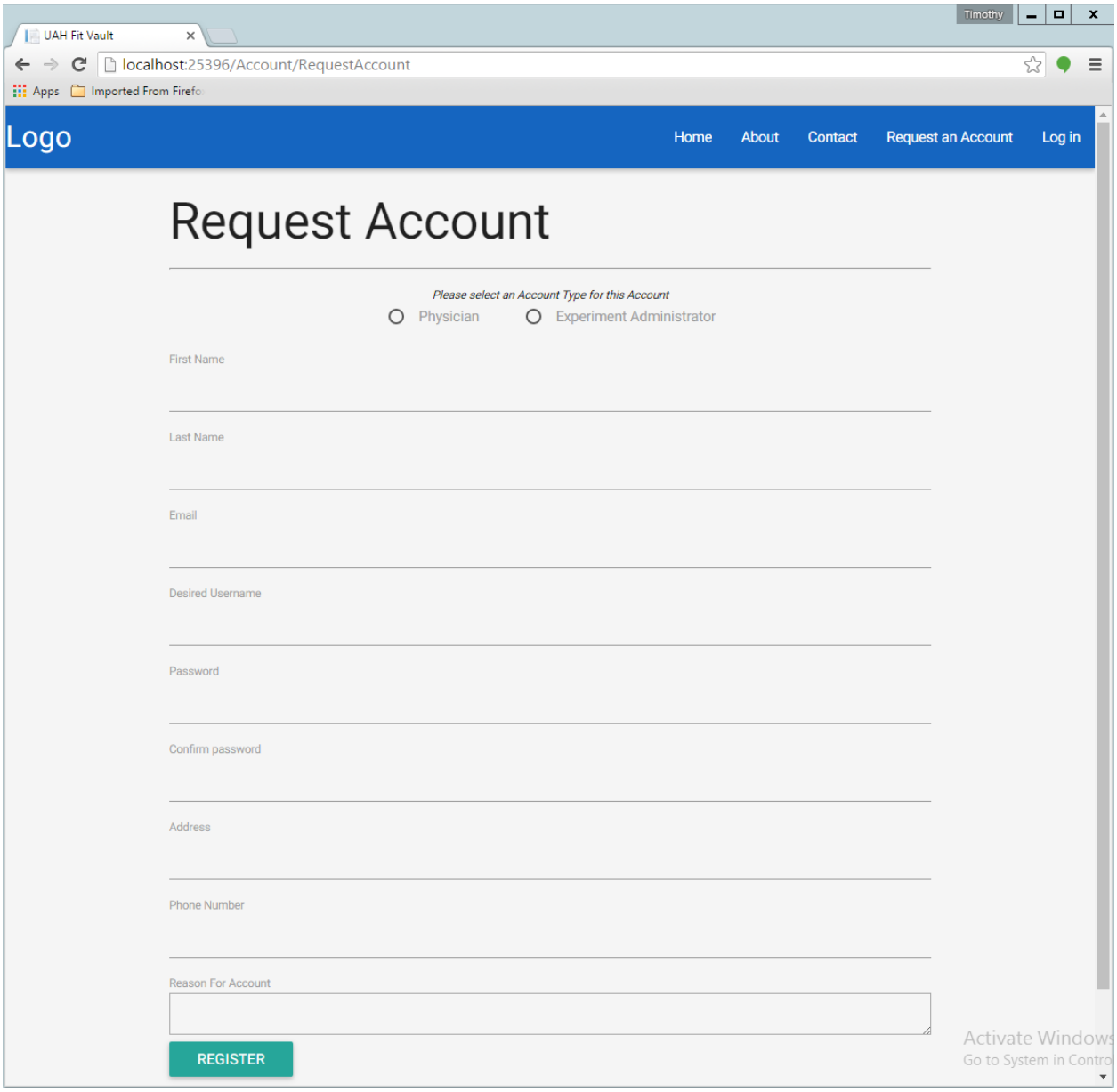
- experiment admin
- system admin

Physician Account

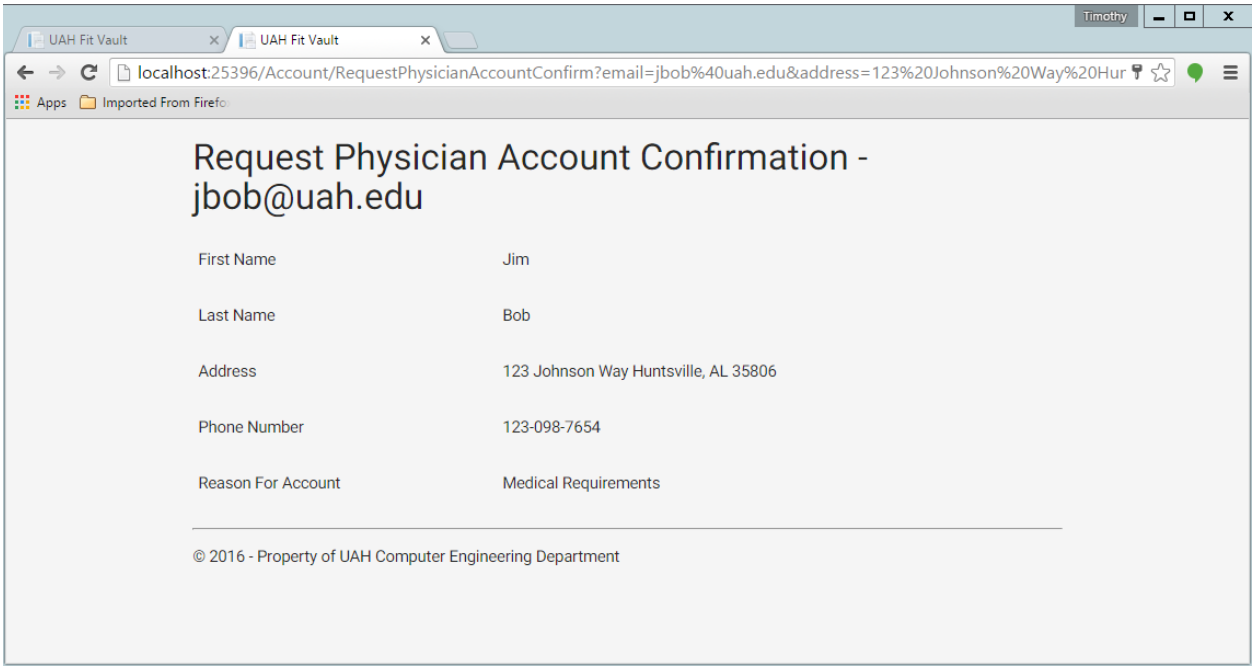
Physician accounts can be requested at the home/login page. Click on the “Register as a new user” button.



This will redirect you to a form to fill out for you new physician account.



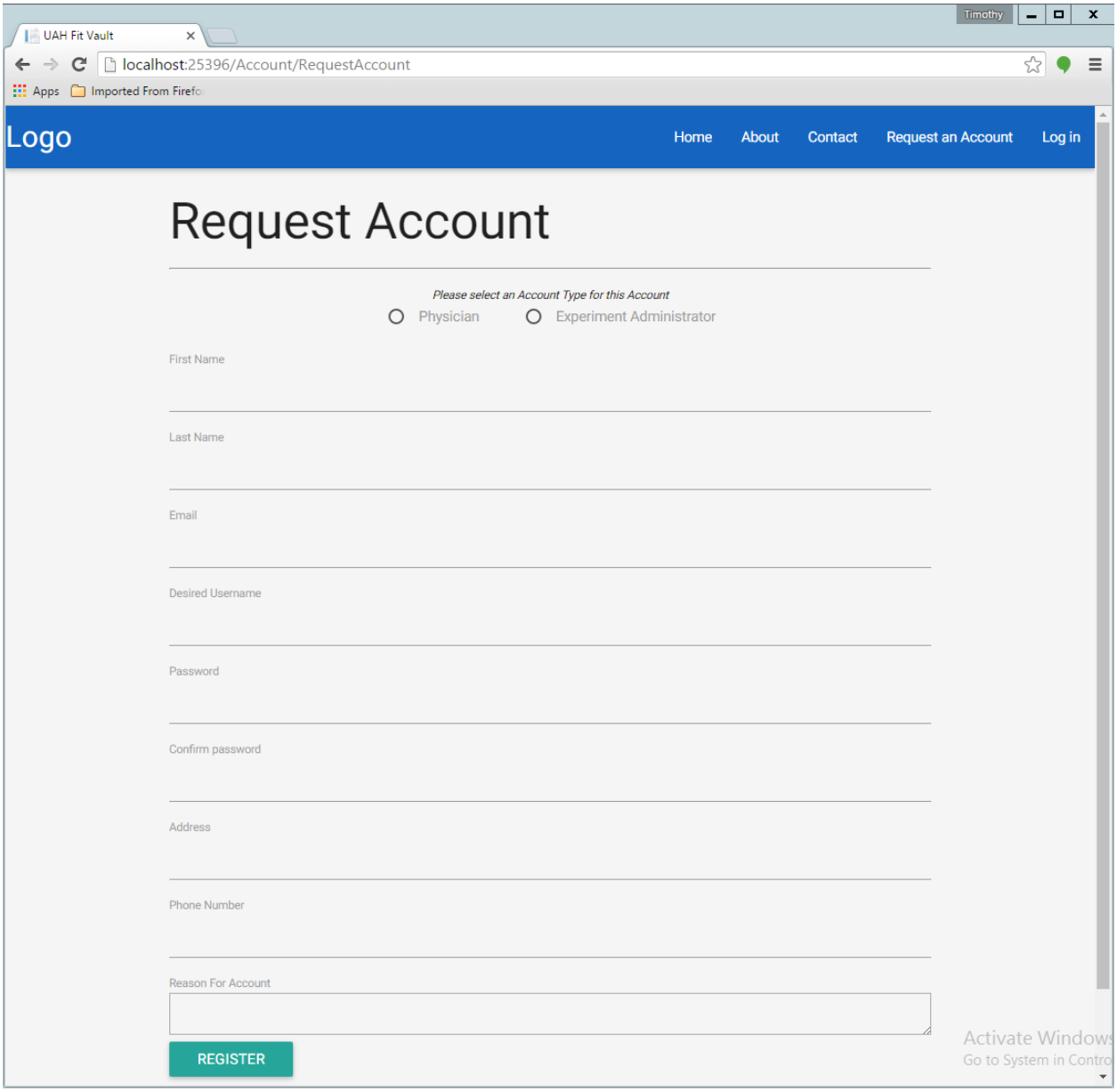
Once you have filled this out with the appropriate information and selected the "Physician" radio button at the top, you are ready to submit your request. When you click submit you should be brought to a confirmation page.



You will not be able to login though until a system admin has approved your account.

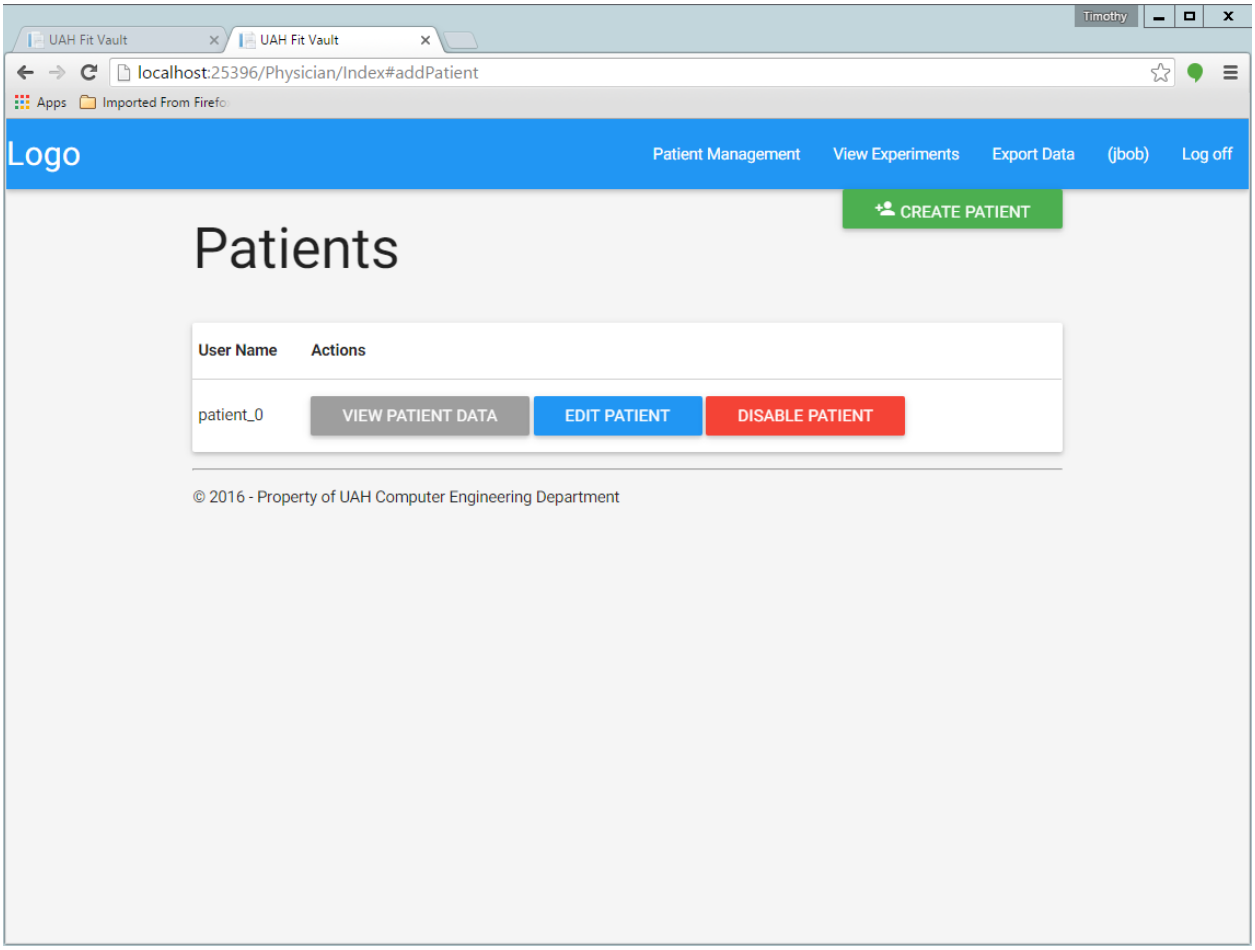
Experiment Admin Account

Experiment Admin accounts are created the same way as the physician accounts. Just make sure to select the "Experiment Administrator" radio button at the top of the request account page instead of the "Physician" radio button.

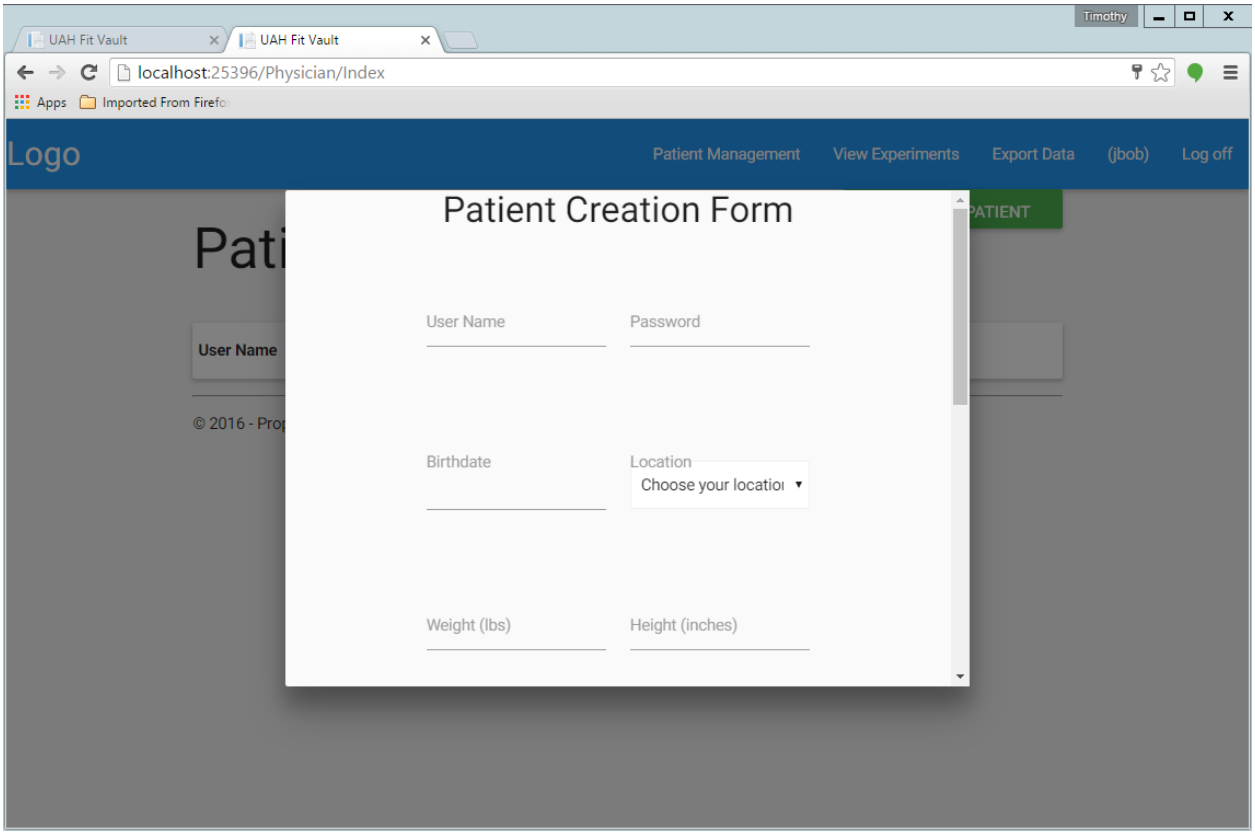


Patient Account

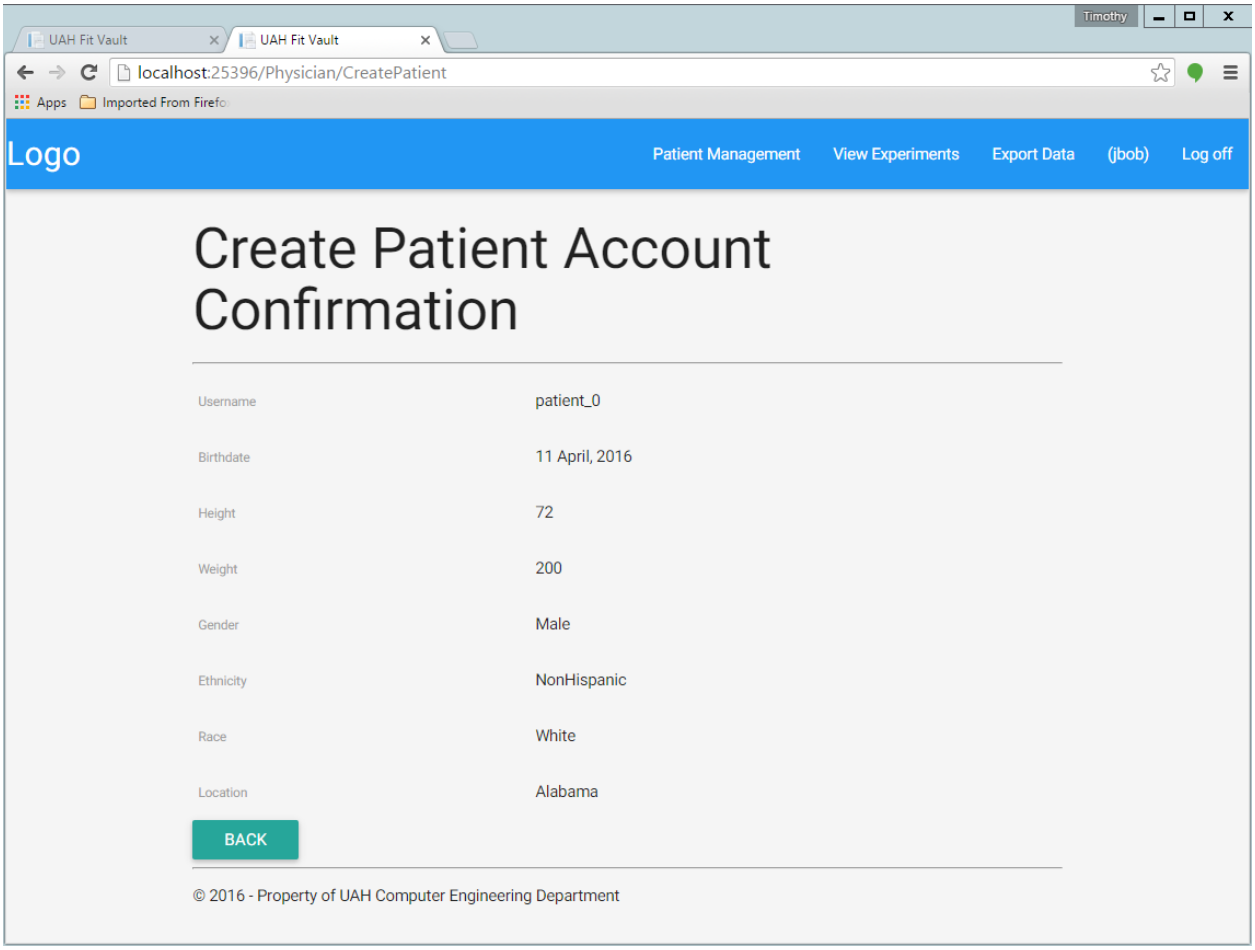
Patient accounts can only be created by their physician. From the physician account's home page click the "CREATE PATIENT" button at the top right of the screen.



A popup form should come up with all the information needed to create a patient account.



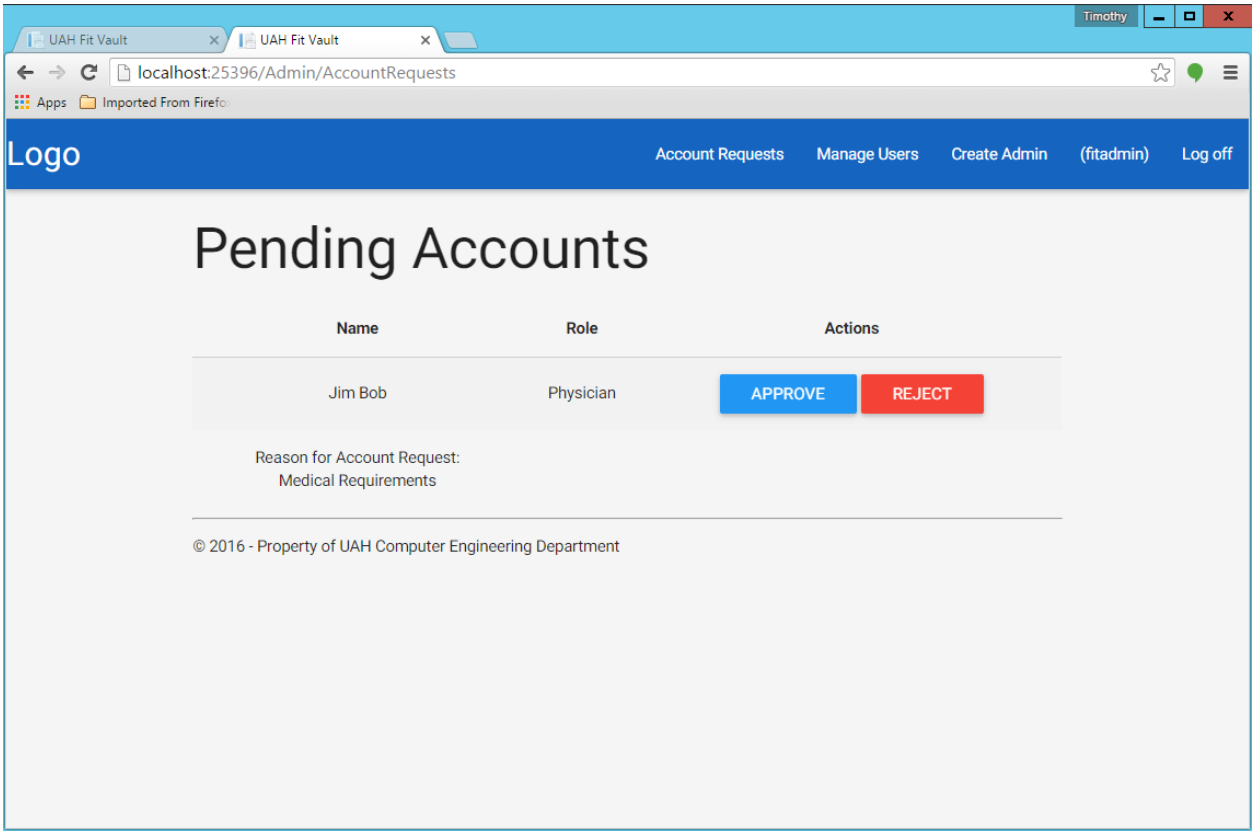
After all the information has been filled out, you can click the submit button. If everthing worked, you should get a confirmation page.



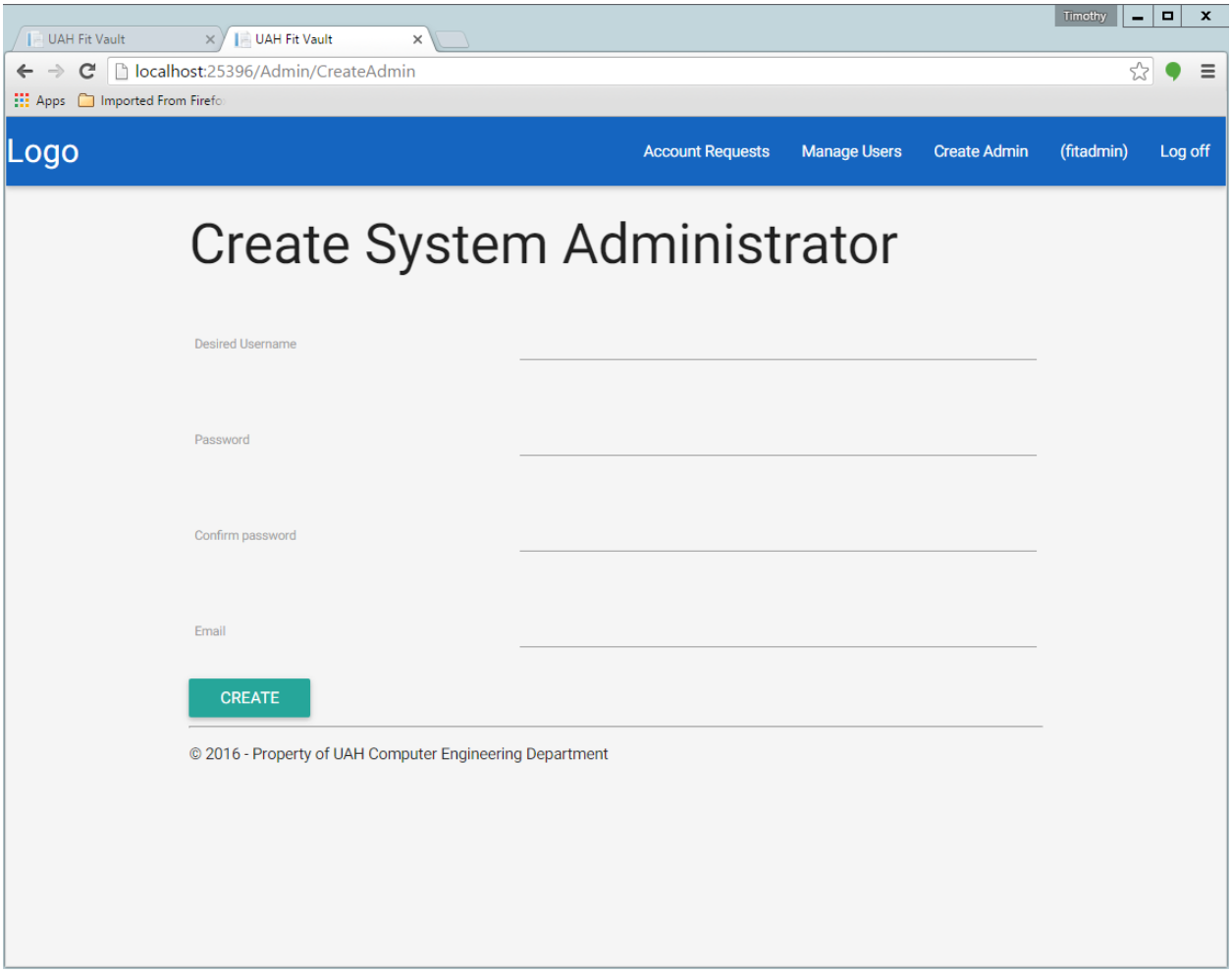
System Admin Account

UAHFitVault comes with a system administrator pre-configured. The username is 'fitadmin' and the password is 'Password1!'. We recommend changing this after the installation before the server is made publicly available.

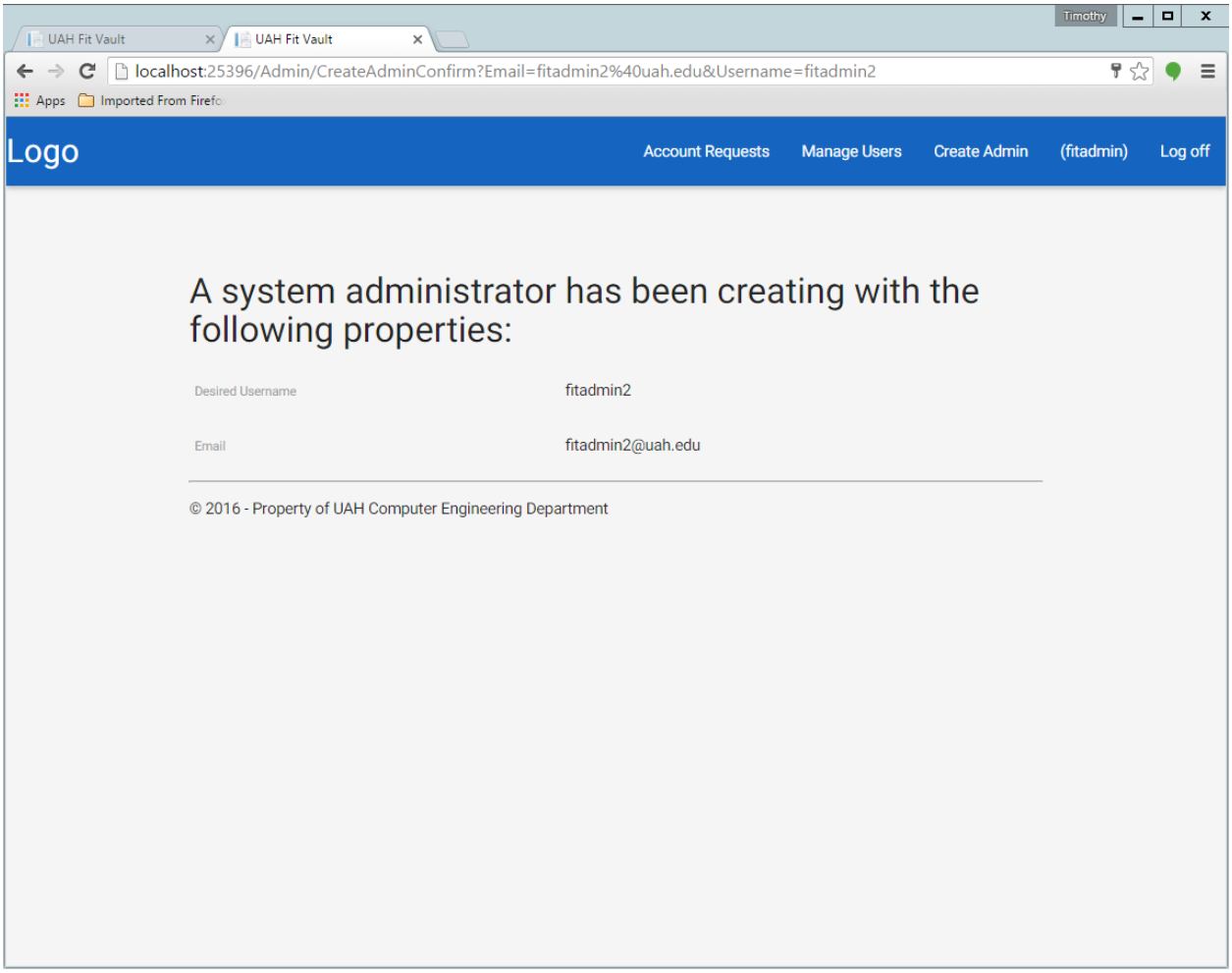
New System Admin accounts can be created by other System Admin accounts. From the System Admin account home page, click the "Create Admin" button at the top right corner of the screen.



You will be presented with a form to fill out for the system admin account information.



Once the form is filled out and you click the create button, you should get a confirmation page.



Account Approval

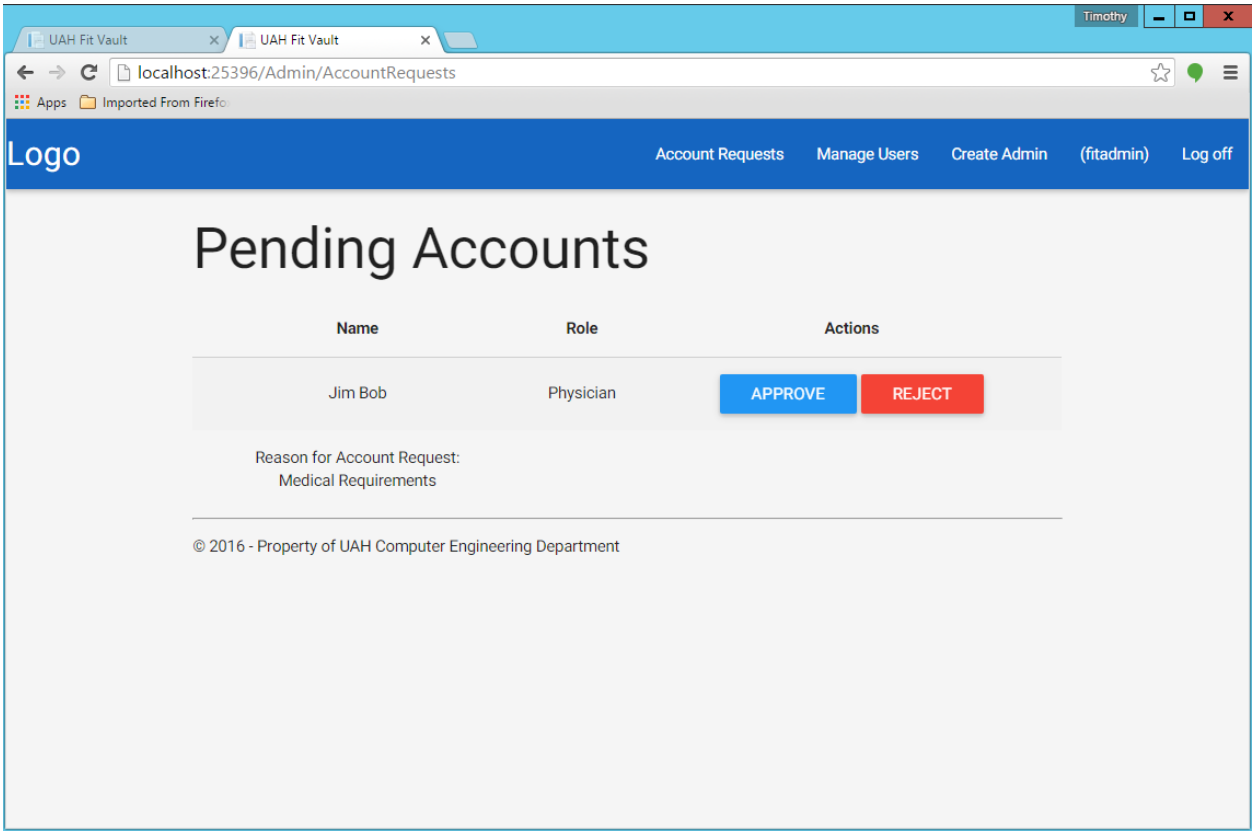
Table of Contents

- Account Approval

There are 2 types of accounts that need approval:

- physician
- experiment admin

To approve an account, login with your system administrator credentials. Then, click on the "Account Requests" button at the top right of the page. This should bring you to a page that looks like this:



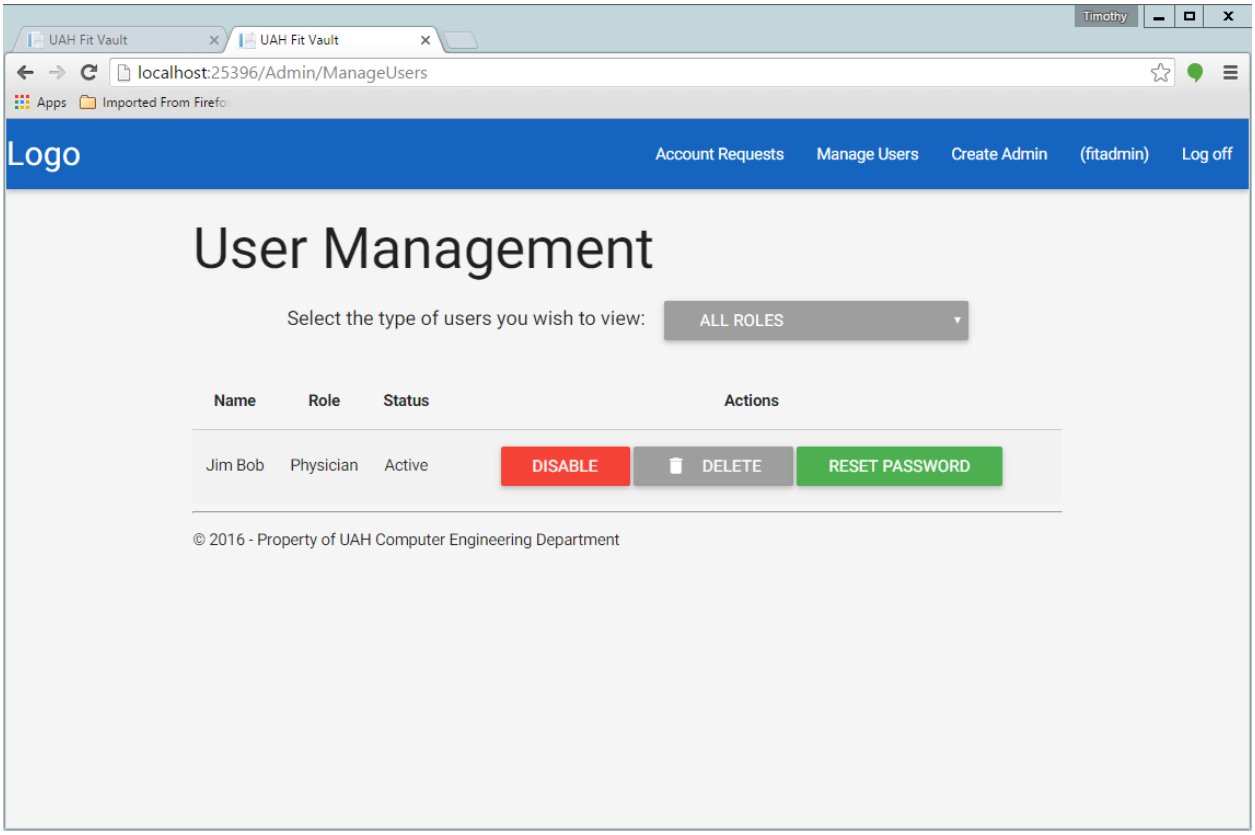
You can then click on the "APPROVE" or "REJECT" button for the corresponding account you wish to approve or reject.

Account Deletion

Table of Contents

- Account Deletion

Accounts can only be deleted by the System Administrator. Login as the system admin and click the "Manage Users" button at the top right corner of the screen. You should be taken to a page like the one below:



From here you can use the roles filter to help you find the account to delete. Just click the "Delete" button that corresponds to the account you wish to delete. If the delete worked the account should disappear from the list.

Account Editing

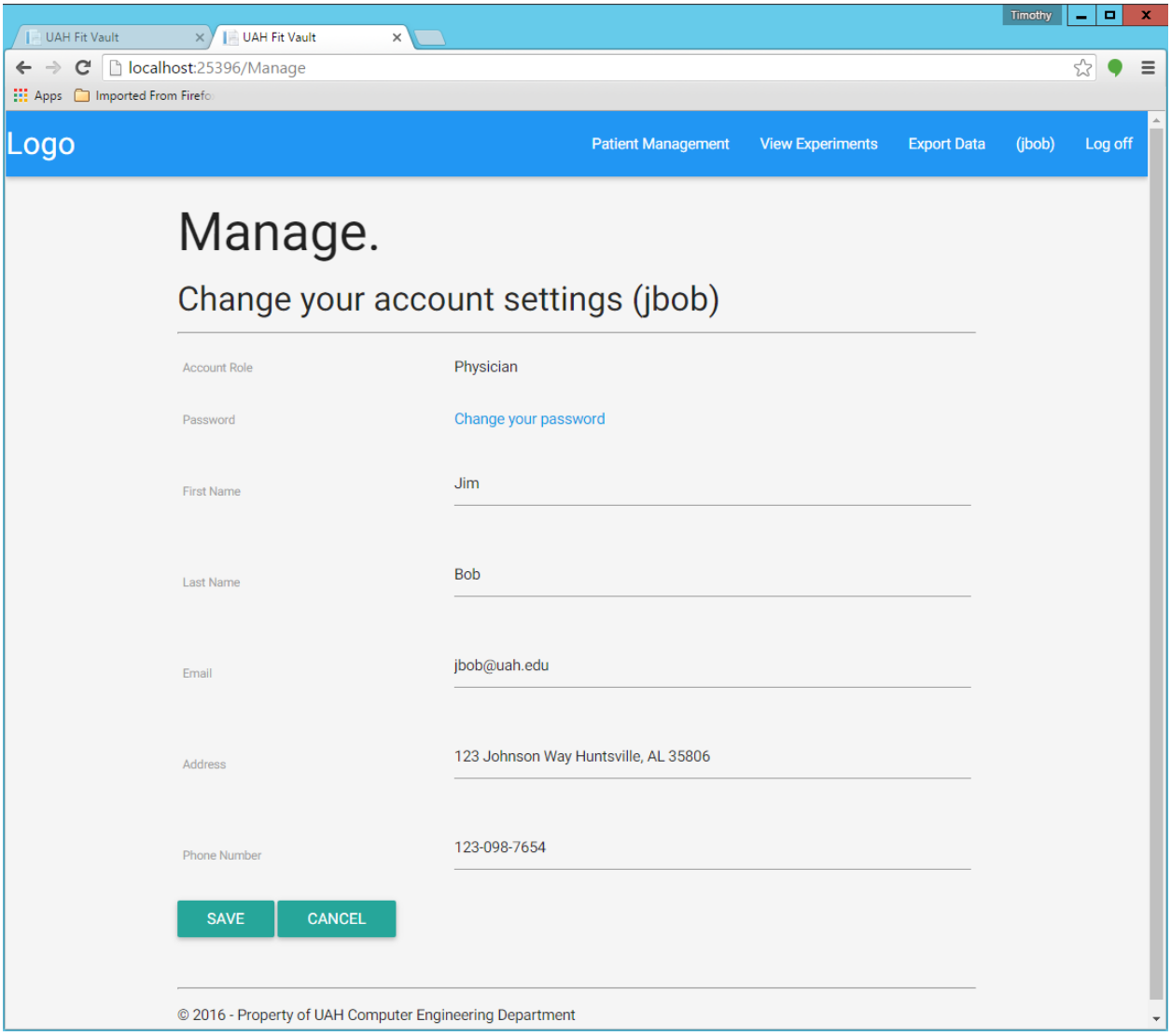
Table of Contents

- Account Editing
  - Physician Account
  - Experiment Admin Account
  - Patient Account
    - Using Physician
    - Using Patient
  - System Admin Account

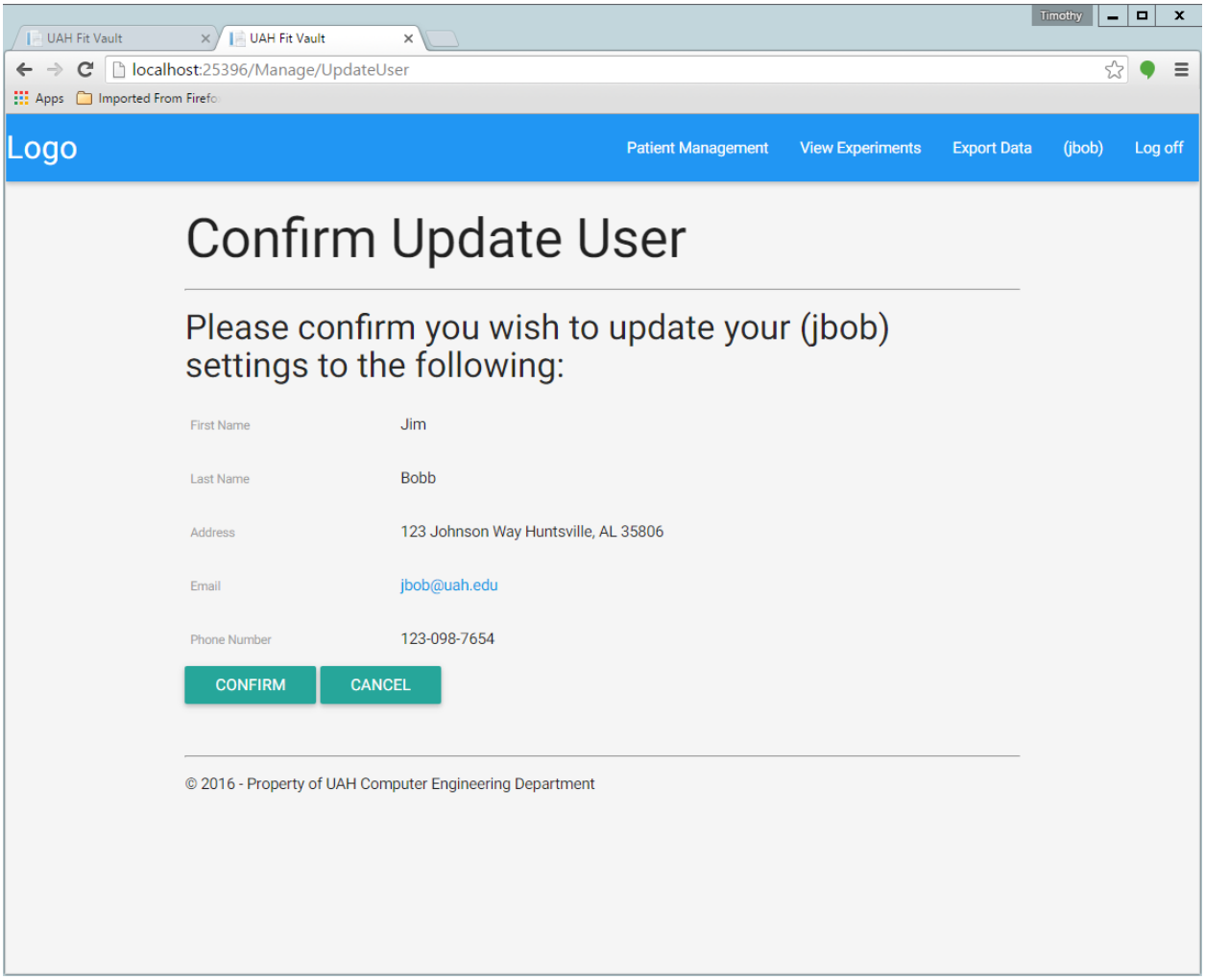
Users have the ability to edit their account information.

Physician Account

To edit a physician account, you must be logged in as the physician. After login, click on the username at the top right corner of the screen. You should be taken to a page like below:



After you edit the information you wish to edit, click the "save" button at the bottom. You should be taken to a confirmation page like this:



Click "Confirm" and you changes will be saved.

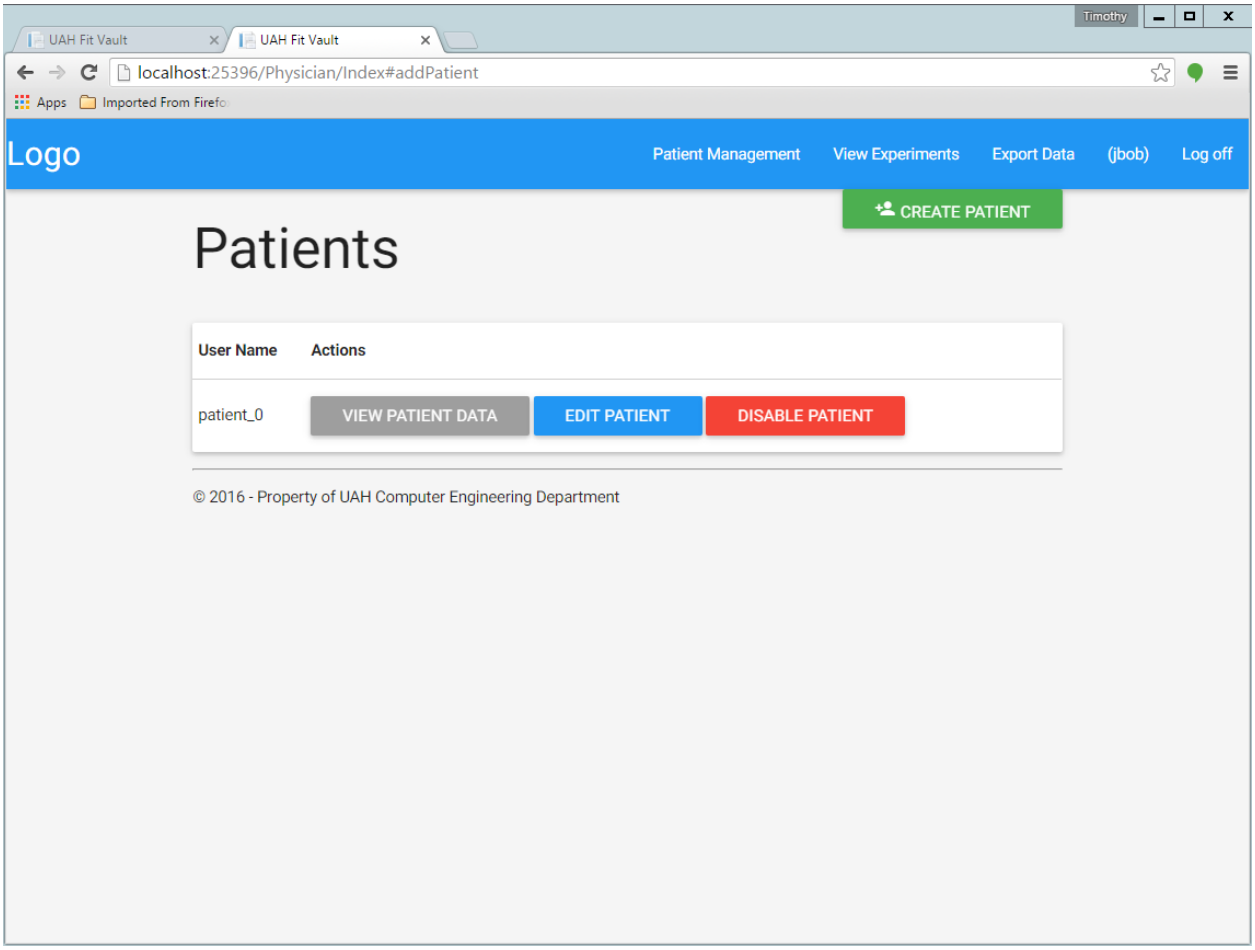
Experiment Admin Account

Editing an Experiment Admin account is exactly the same as editing a *Physician* account.

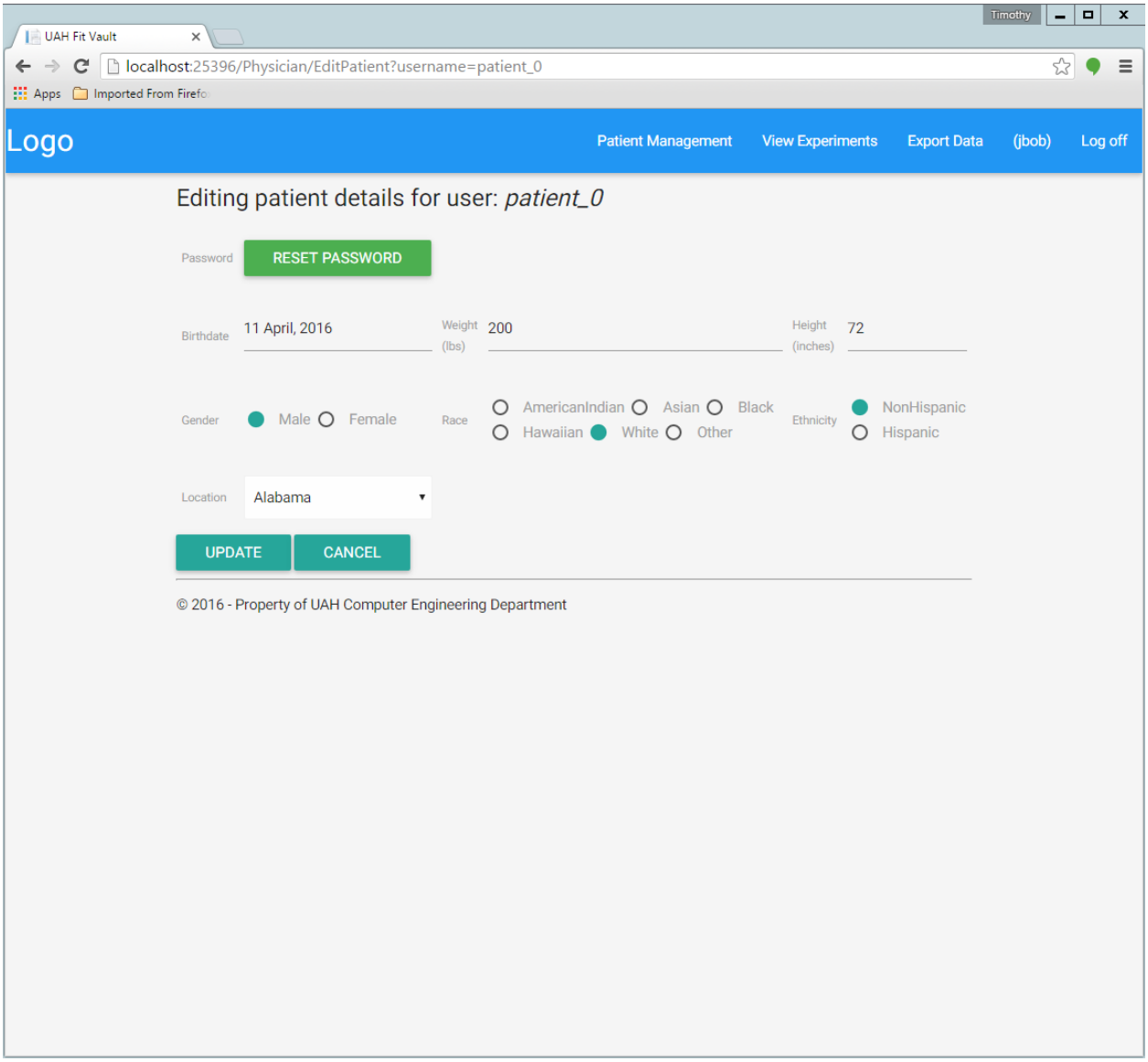
Patient Account

Patient accounts can be edited by either the patient or the patient's physician.

Using Physician To edit it using a physician, login using the physician's credentials then click on the "Patient Management" button at the top right corner of the page. You should then be taken to a page that looks like this:

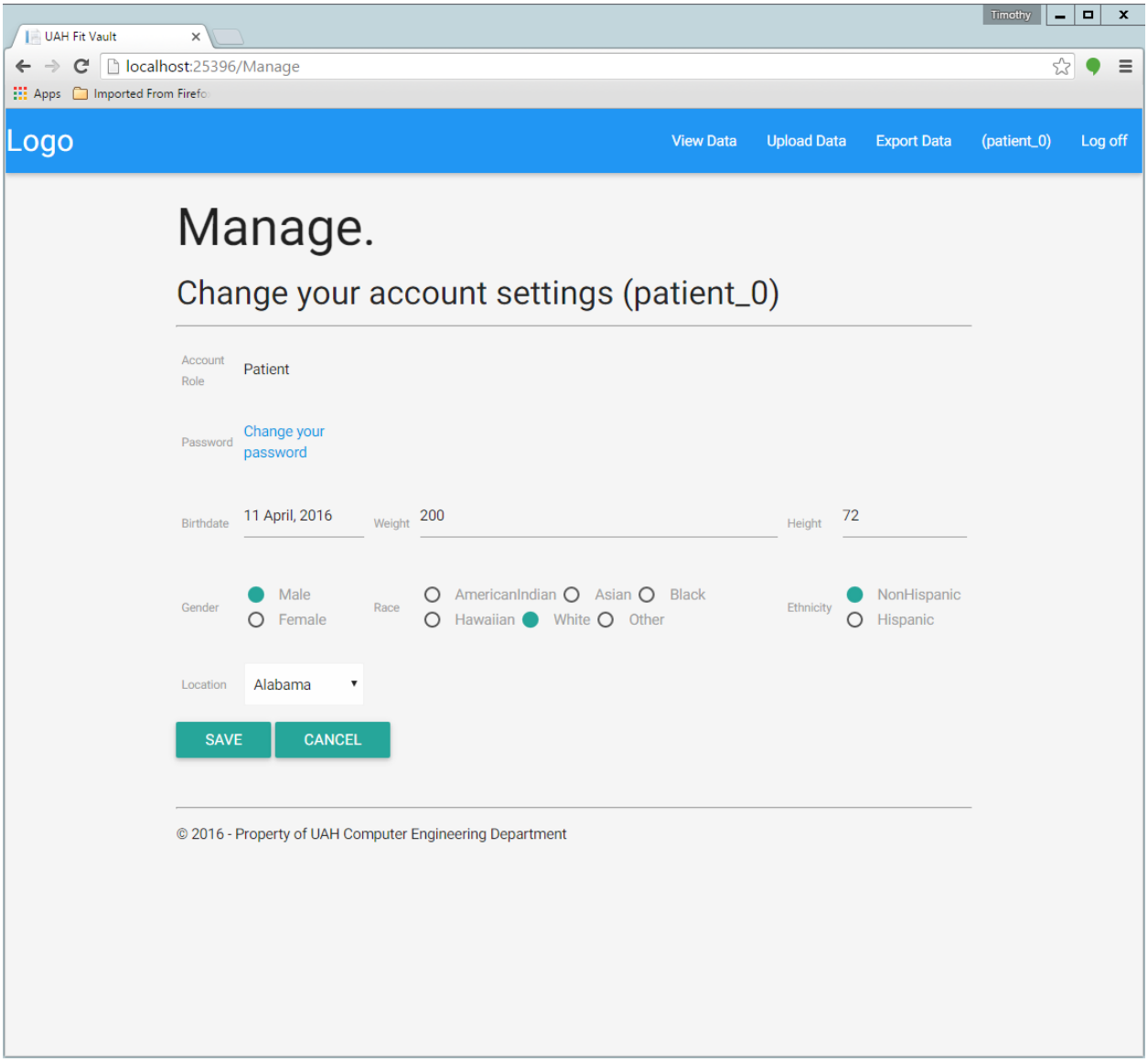


Then click on the "EDIT PATIENT" button for the corresponding patient you want to edit. This will bring you to the following page:



Use the form to edit any of the information you want to change. Then click on the "UPDATE" button.

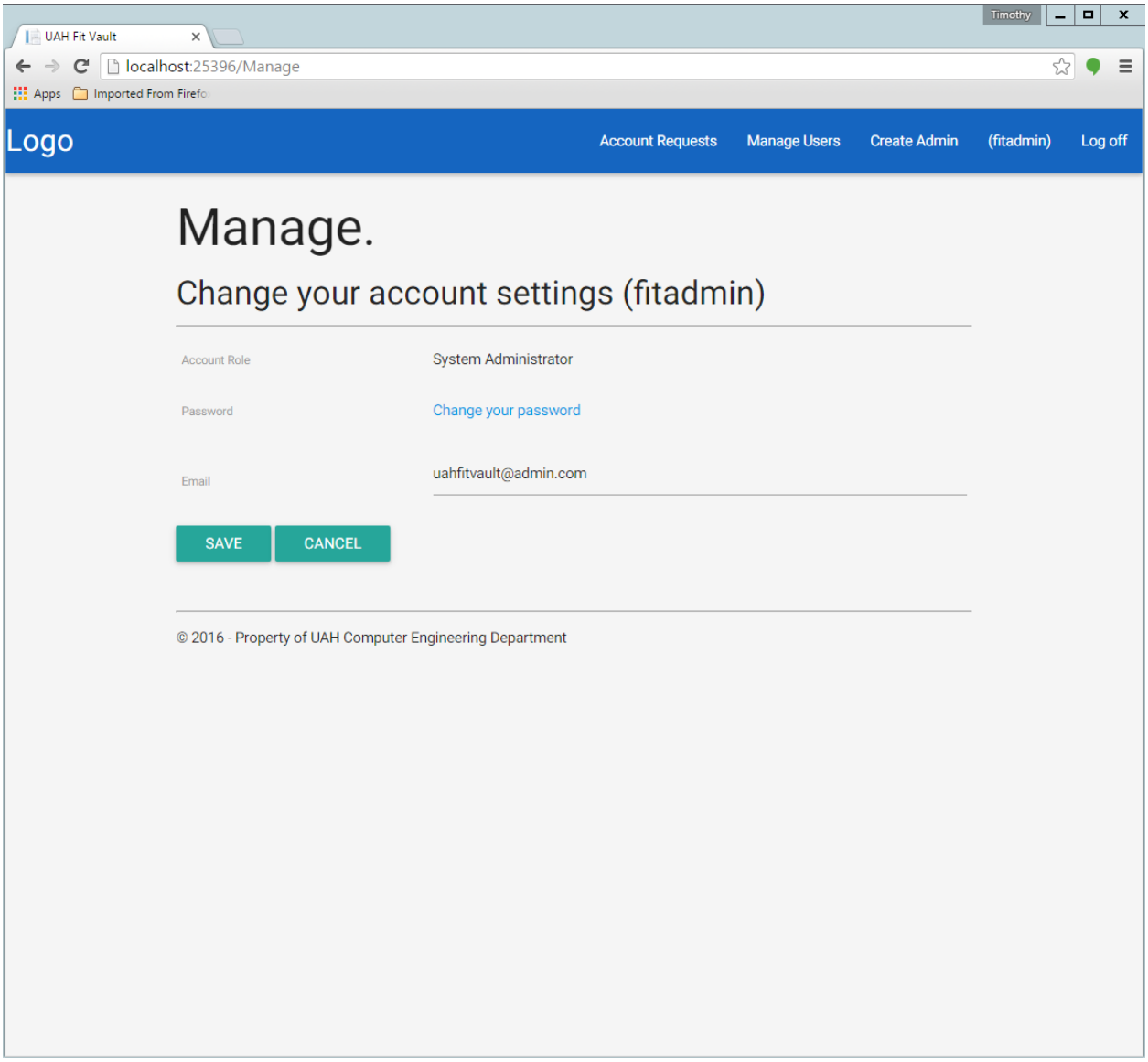
Using Patient To edit it using a patient, login using the patient's credentials then click on your patient user name at the top right corner of the page. You should be brought to a page like this:



Then fill out the form with any information you want to edit and click the "SAVE" button.

System Admin Account

To edit a System Admin account login as the system admin; then, click on the username at the top right corner of the page. This should bring you to a page that looks like this:



You can then use the form to edit any information you need for the system admin account. Then click the "SAVE" button to save your changes.

1.2.2 Experiment Management

Contents:

Experiment Creation

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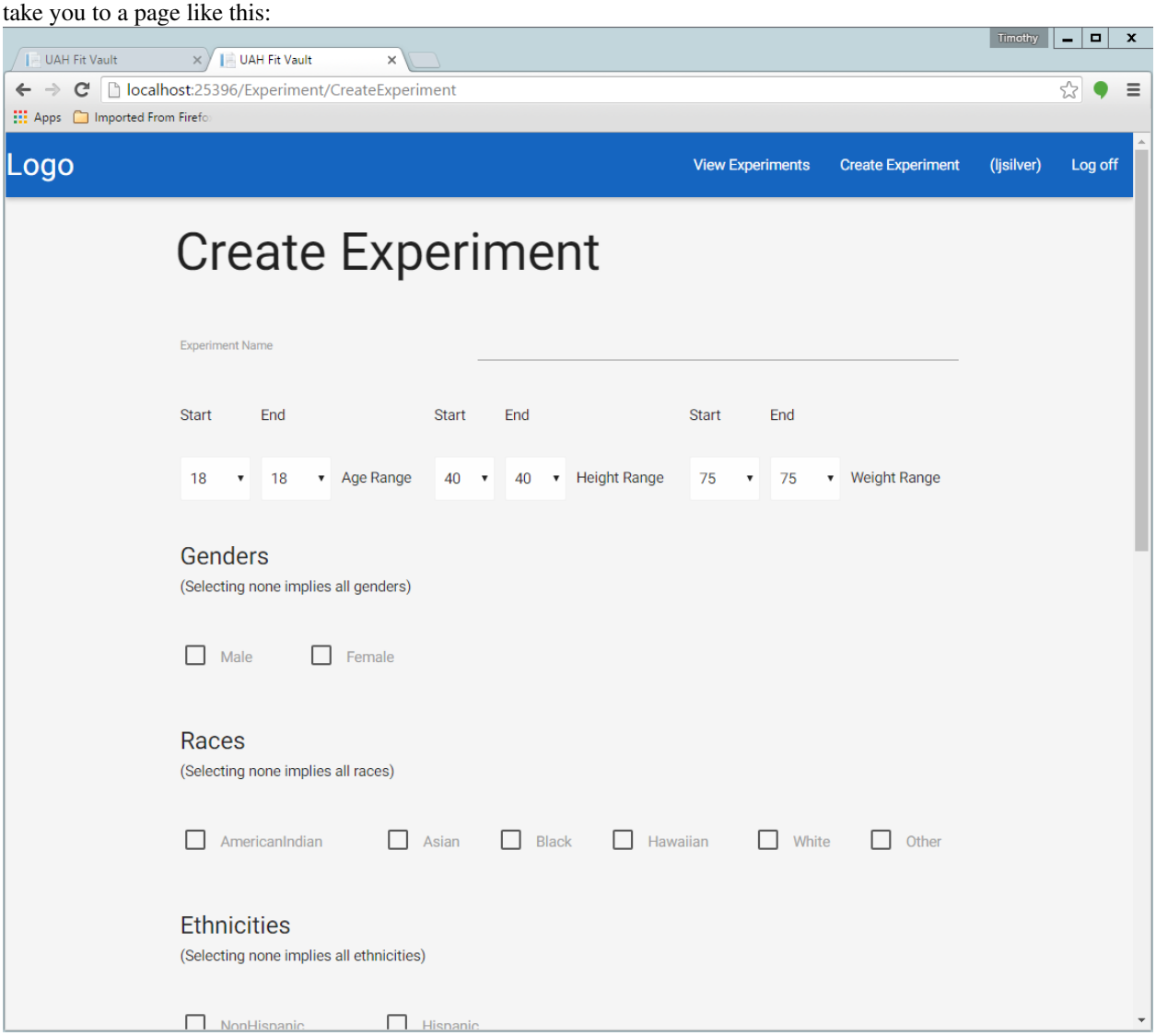
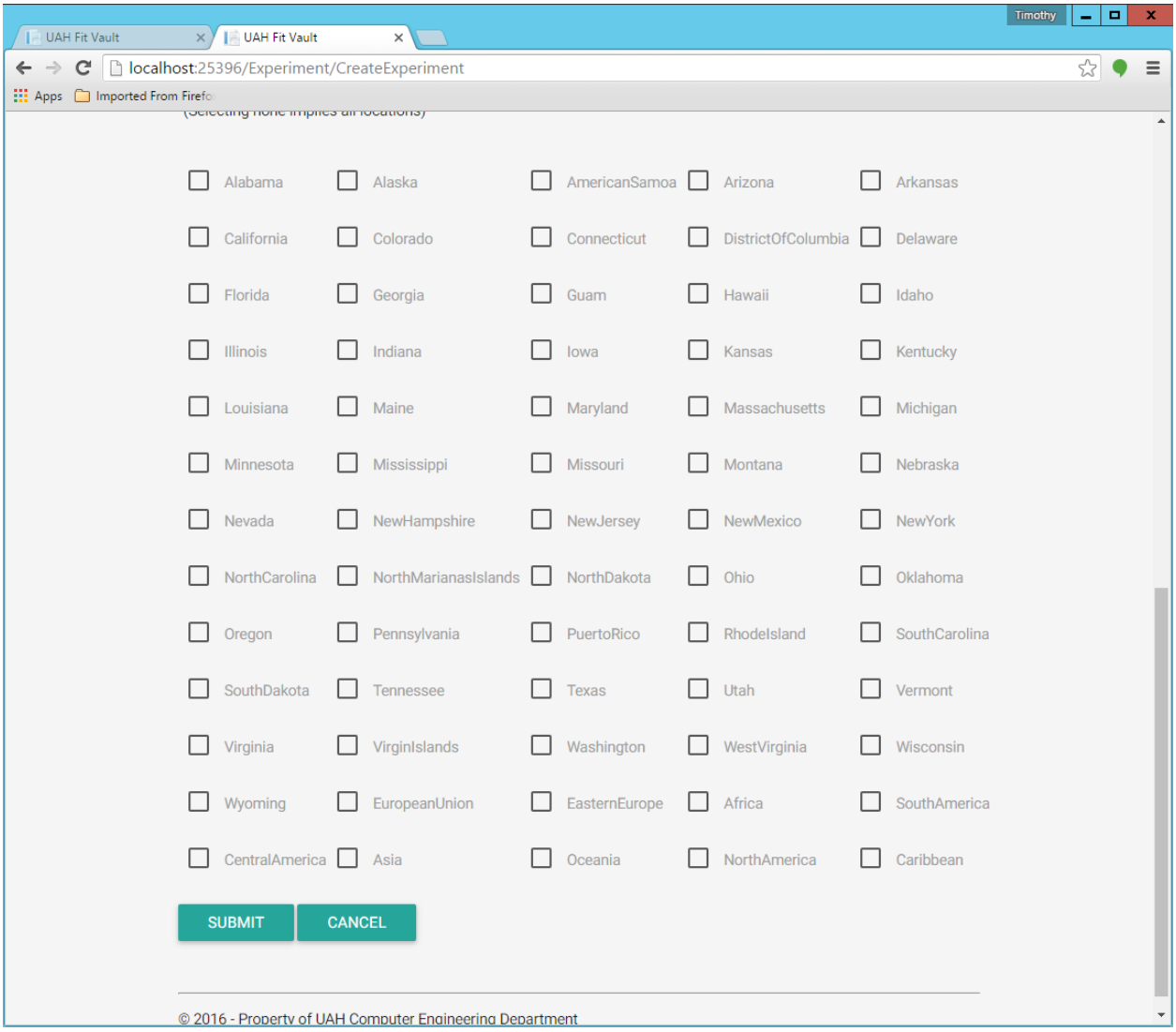
- Experiment Creation

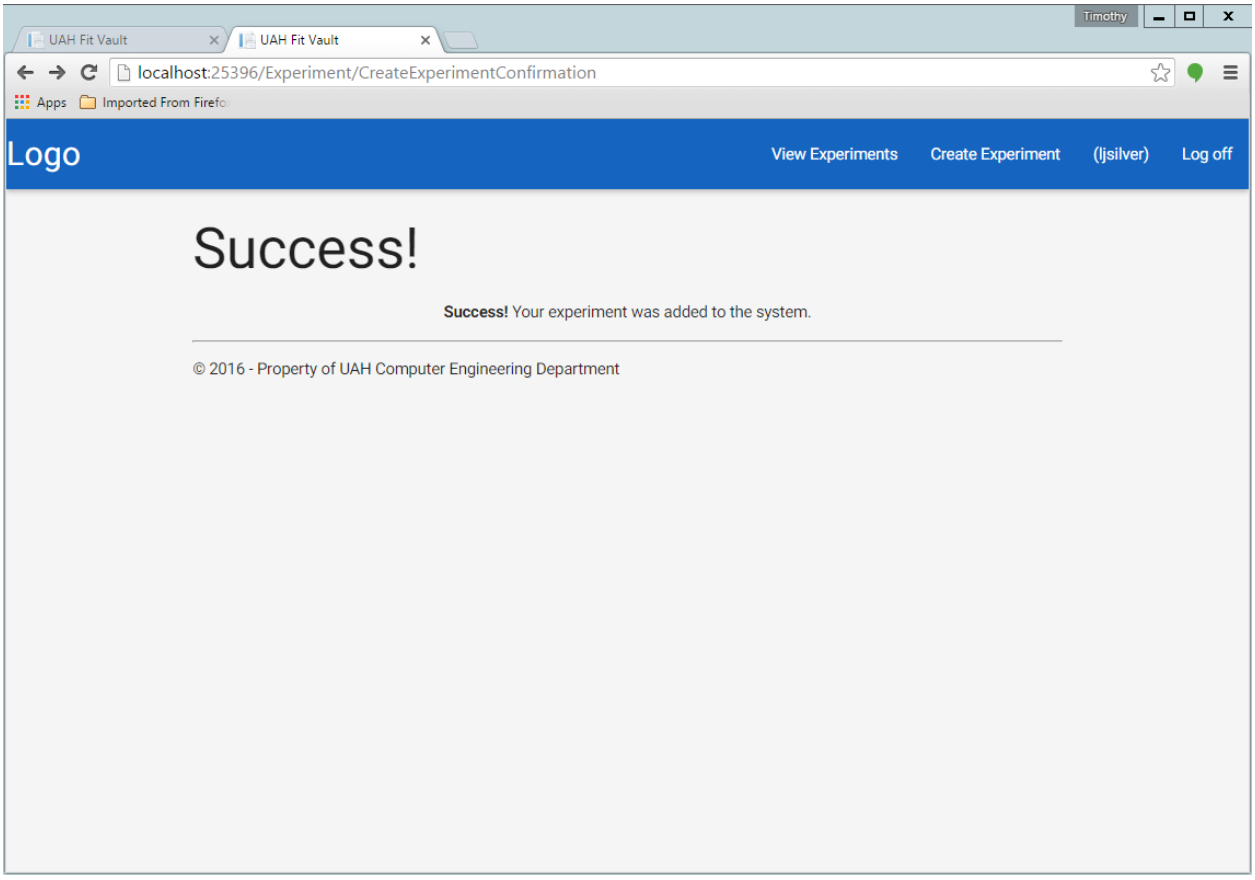
Experiments can be created by an Experiment Admin. To create an experiment go to the home page and login with your experiment admin credentials. Click on the "Create Experiment" button at the top right of the screen. This should

take you to a page like this:





You can then fill out information that will filter out patients for your experiment. Once you have filled out the form completely to your liking, click the "SUBMIT" button at the bottom of the form. If everything worked right, you should be presented with a confirmation page like this:



Experiment View

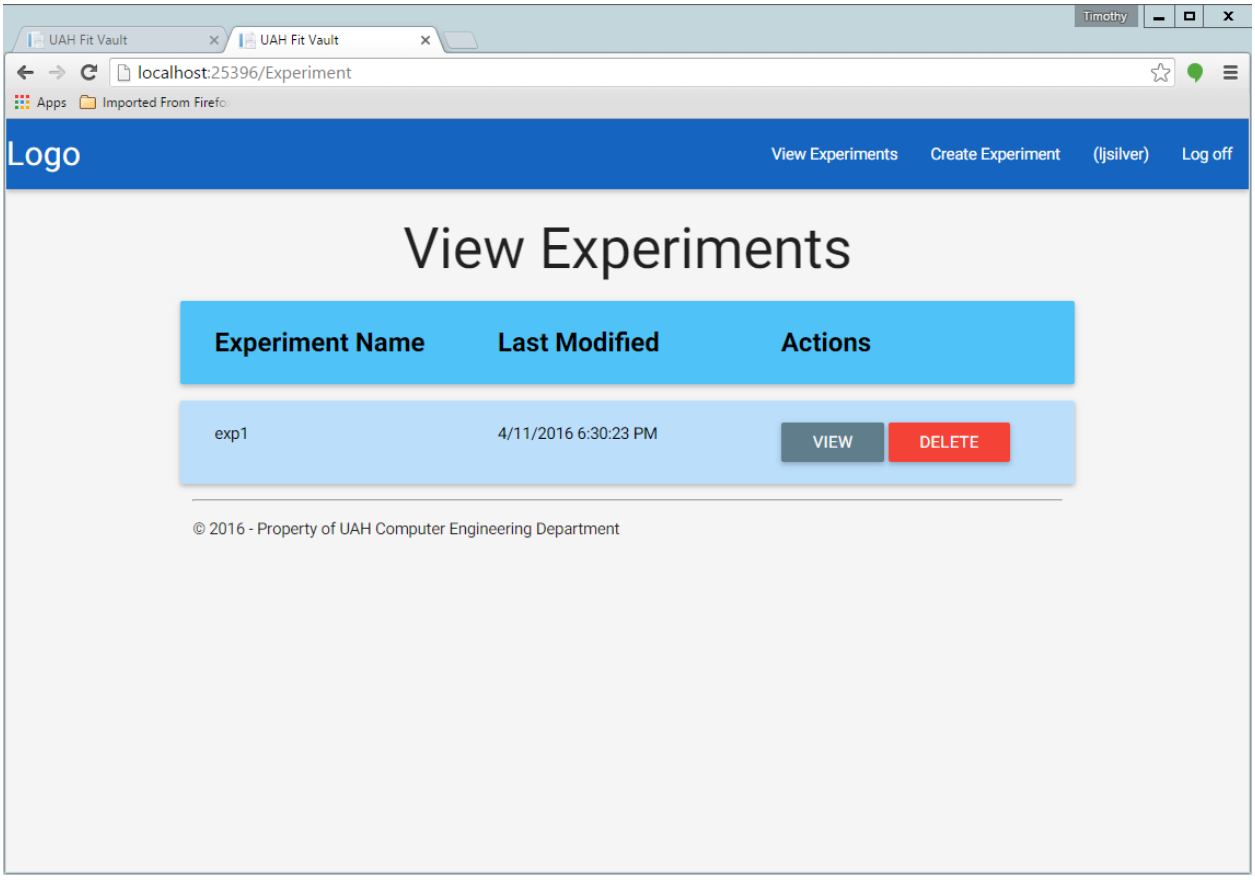
Table of Contents

- Experiment View
  - Experiment Admin
  - Physicians

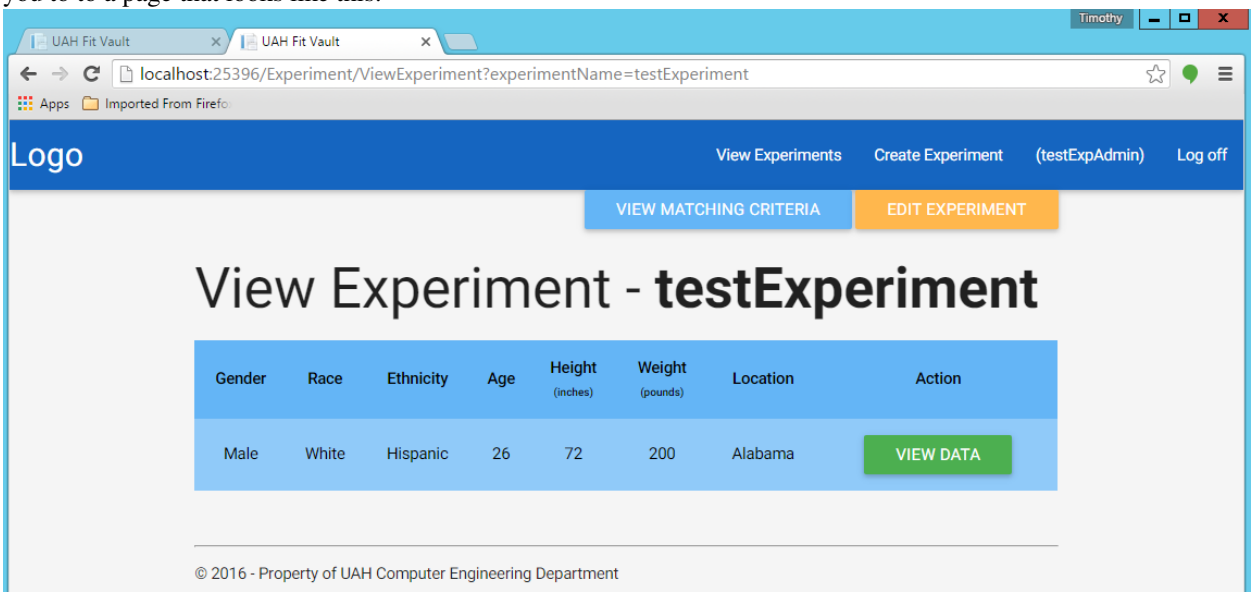
Both Physicians and Experiment Admins can view experiments.

Experiment Admin

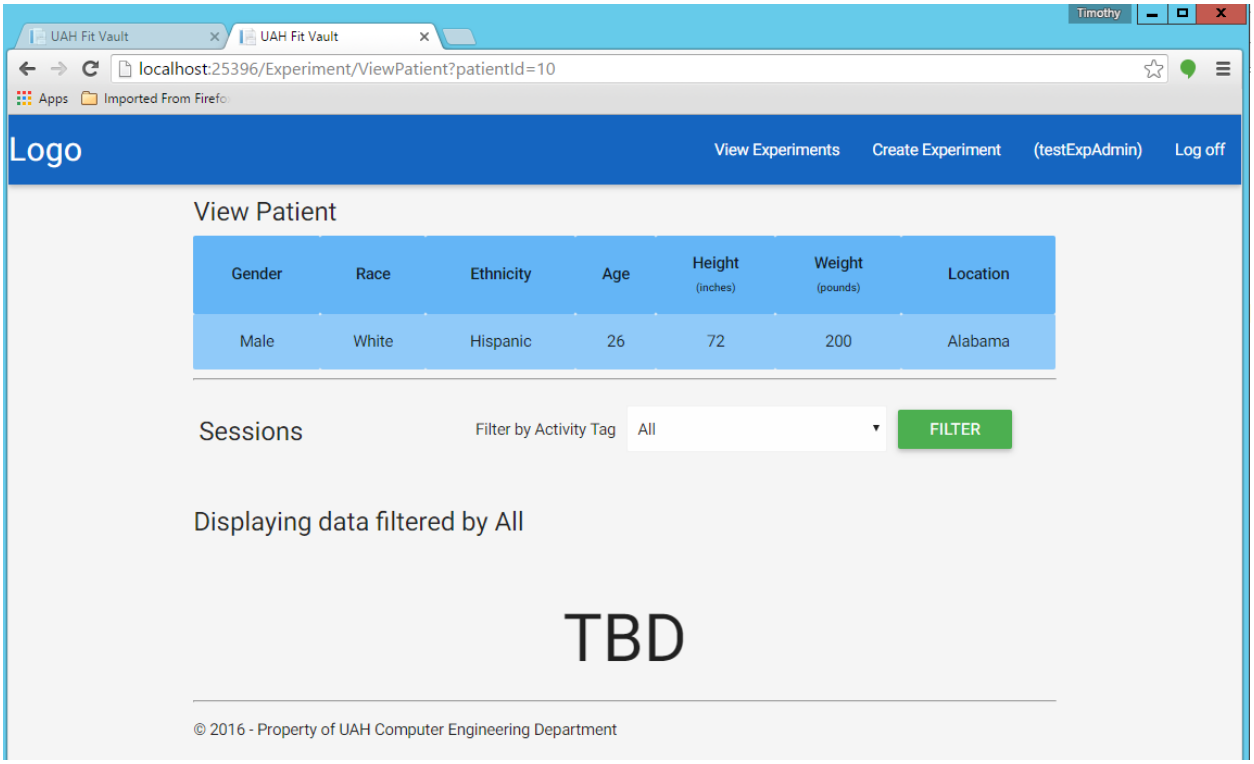
Once an experiment has been created, login with your experiment admin credentials and click on the "View Experiment" button at the top right corner of the page. You should be taken to a page that looks like this:



You can then click on the "VIEW" button of the corresponding experiment you want to view. Then this should take you to to a page that looks like this:

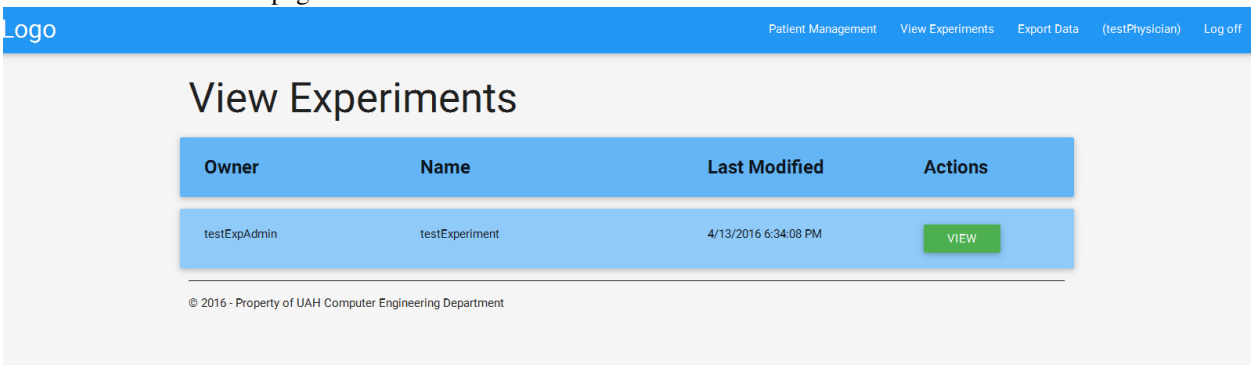


You can now view the data for all the patients that fit into the experiment:

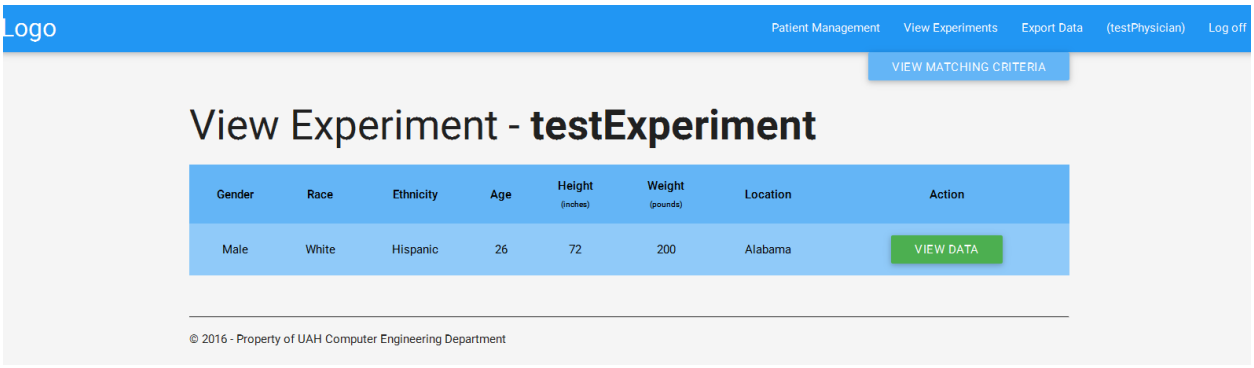


Physicians

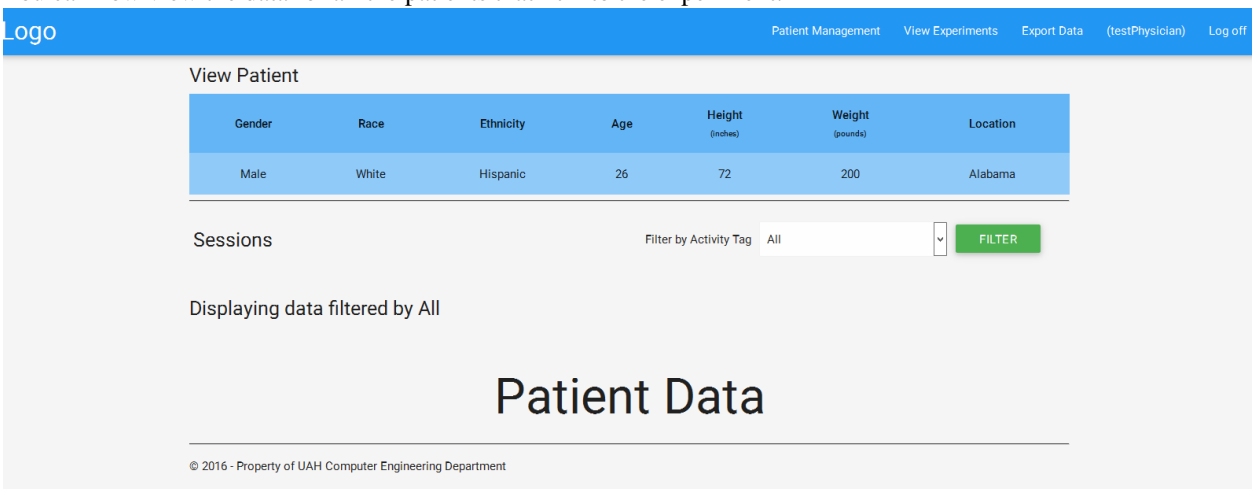
Login with your physician credentials and click the "View Experiments" button at the top right corner of the page. You should be taken to a page that looks like this:



You can then click on the green "VIEW" button to the corresponding experiment you want to view. This should take you to a page that looks like this:



You can now view the data for all the patients that fit into the experiment:

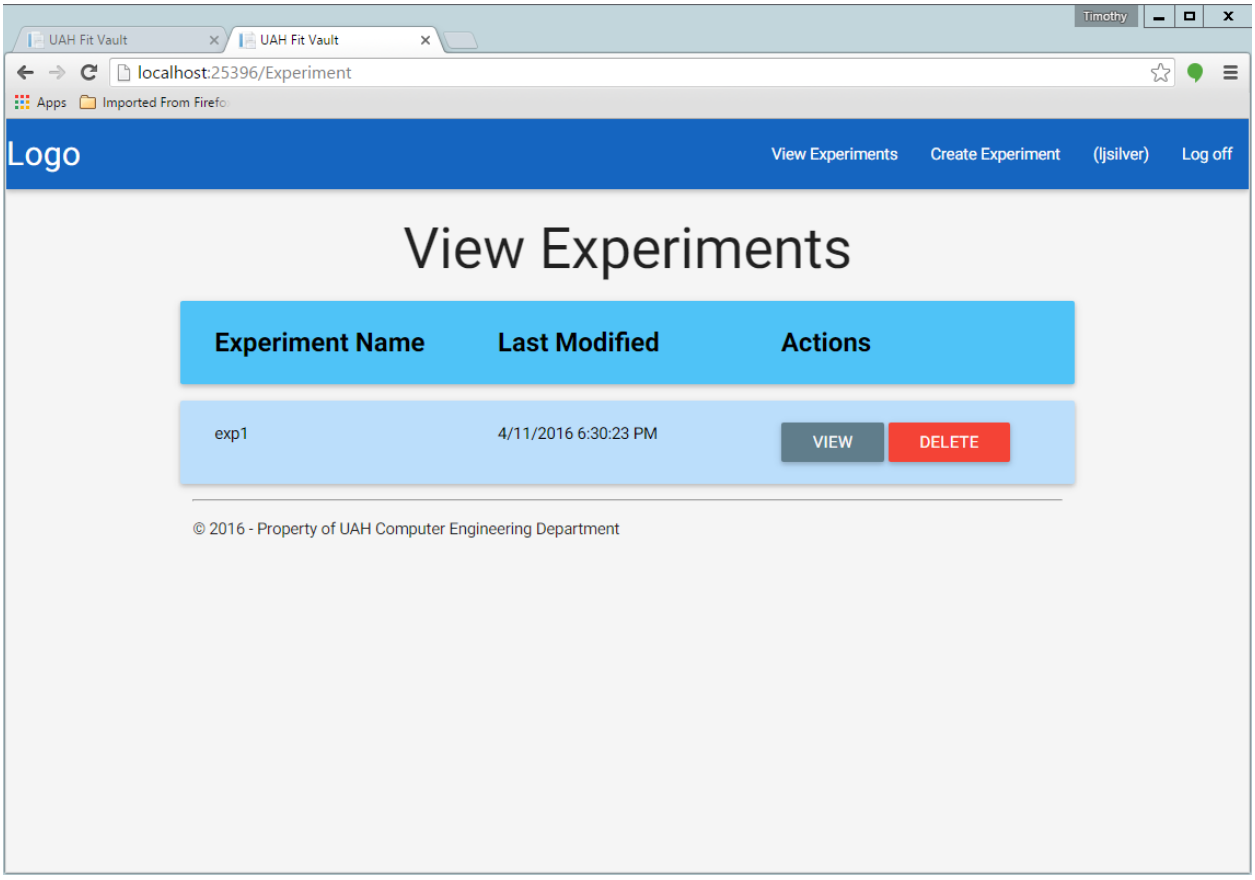


Experiment Deletion

Table of Contents

- Experiment Deletion

Only an Experiment Admin can delete experiments. To do this, simply login with your Experiment Admin credentials, and click on the "View Experiments" button at the top right corner of the page. This should take you to a page that looks like this:



You can then click on the "DELETE" button of the corresponding experiment you want to delete.

Experiment Exportation

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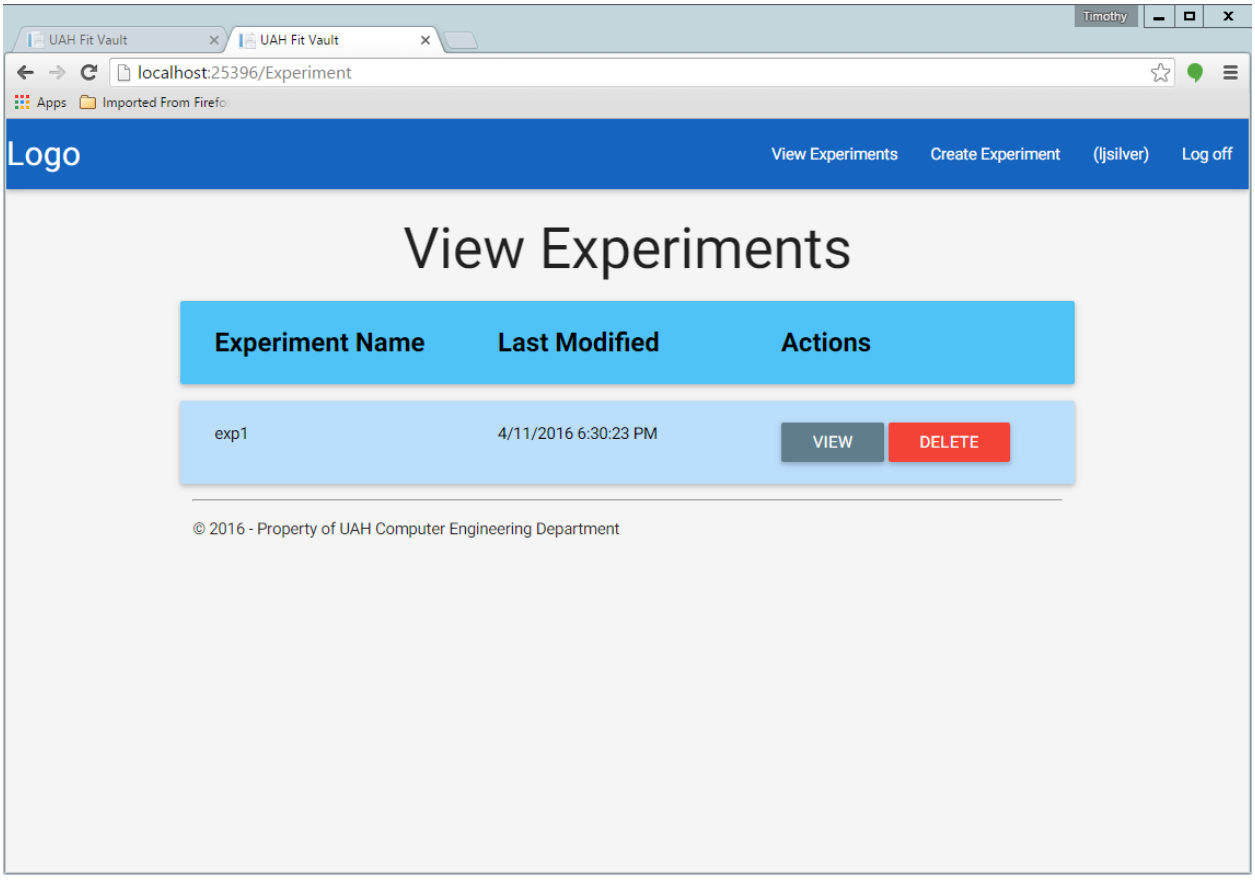
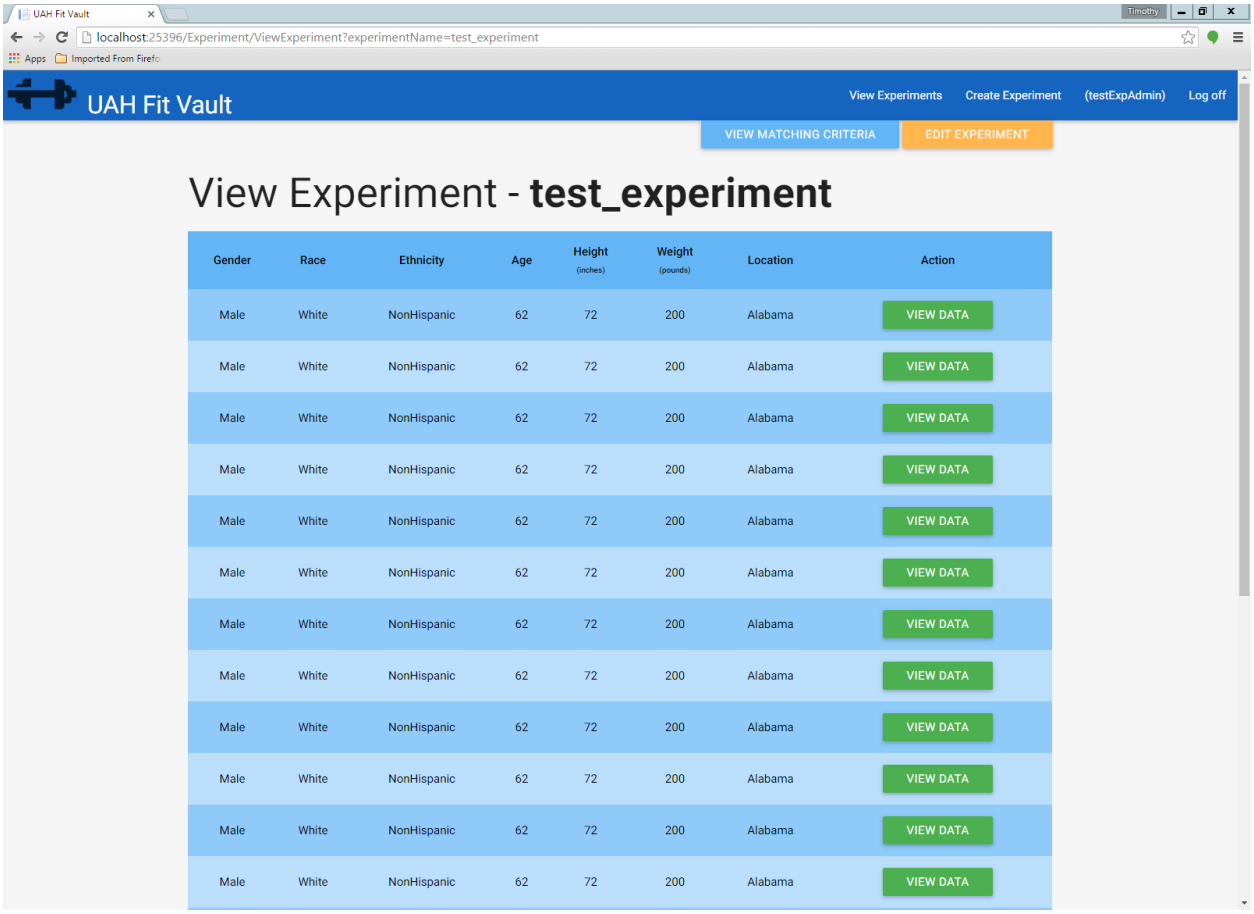
- Experiment Exportation

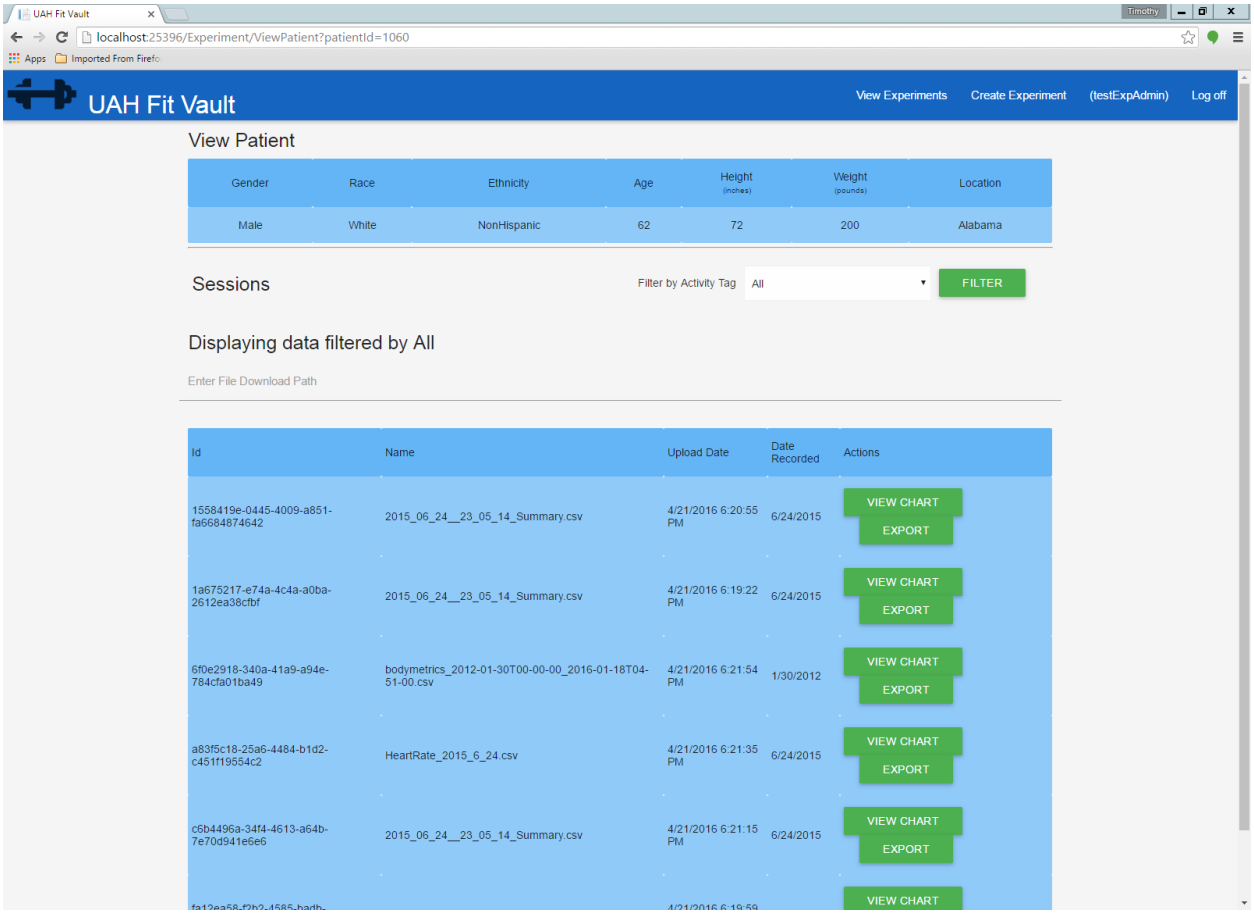
An Experiment Admin can export experiment data. Login as an experiment administrator. Then click on the "View Experiment" button.



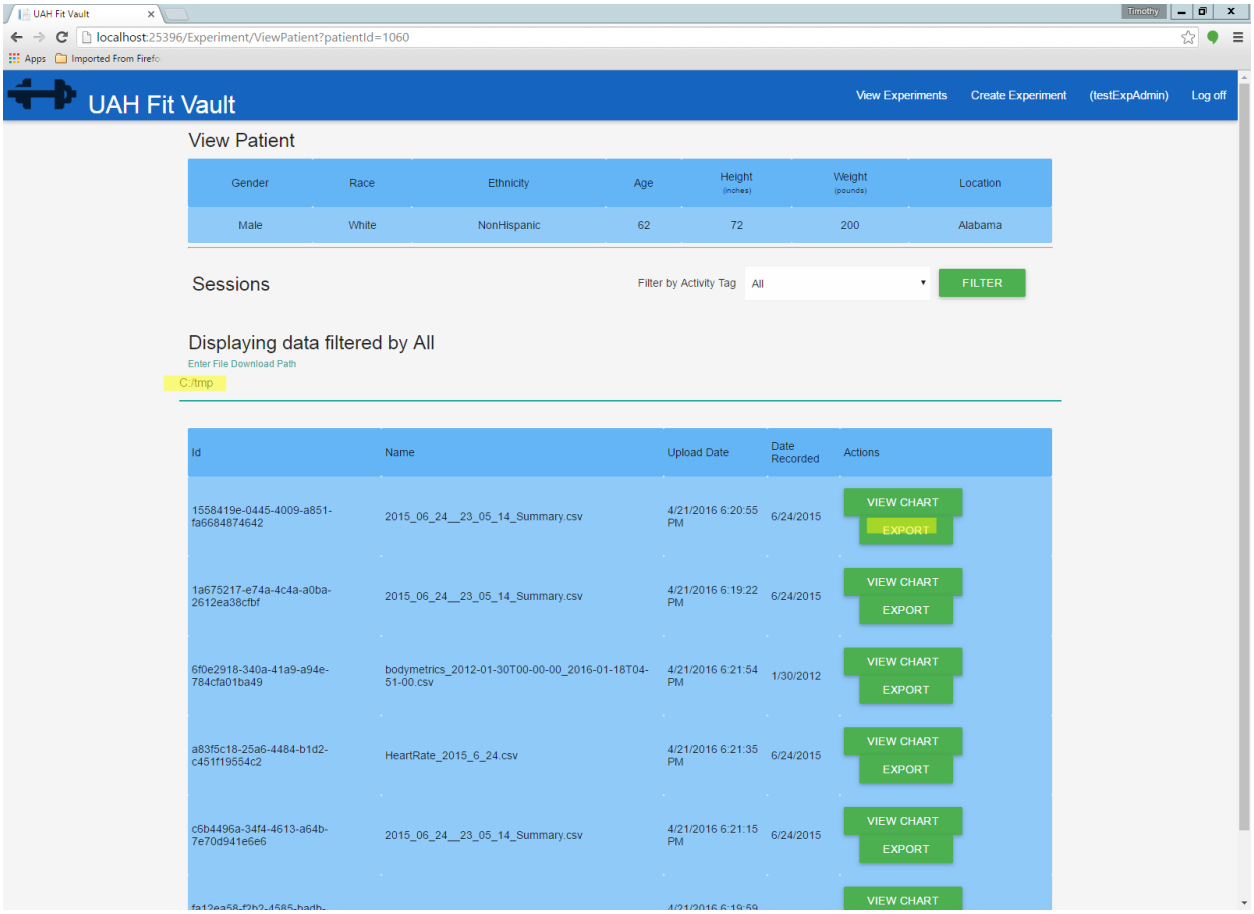
You should then see existing experiments. Click on the "View" button for the experiment you want to export. You should see the following page:



Next click on the "View Data" button for the account you want to download data from. You should see a page that looks like this:



You can then fill out the path and click on the “Export” button for the file you want to export.



1.2.3 Patient Data Management

Patients have the ability to upload data to the system, view the data they have uploaded, and download that data from the system at any time.

Contents:

Patient Data Upload

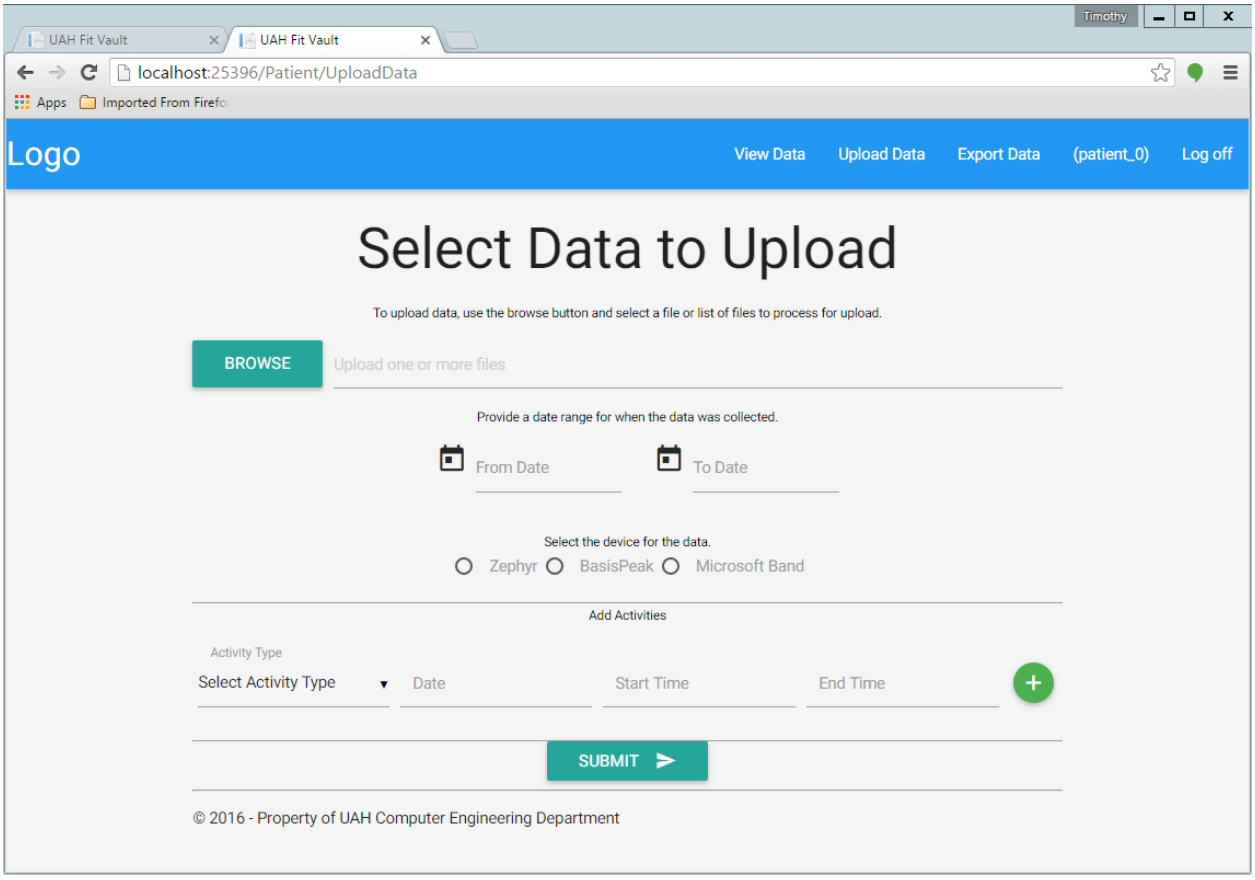
Table of Contents

- Patient Data Upload

A patient can upload data to the system from 3 types of devices:

- Zephyr
- Basis Peak
- Microsoft Band

To upload a file, login with your patient account credentials. Then, click on the "Upload Data" button at the top right of the page. This should take you to a screen like this:



Click the "BROWSE" button and follow the wizard to the file(s) you want to upload. Fill in the date of collection information and select the device type. At this point you can upload data by clicking the "SUBMIT" button.

Your Physician may also ask you to fill out activities (the second half of the Upload Data page). Activities must be set at the time of the data upload. To fill out an activity simply choose an activity type from the "Activity Type" dropdown, select the date the activity was performed, and select a start and end time for the activity.

You can input as many activities as you want. To add an activity click the green plus button to the right of the activity section of the page.

Patient Data View

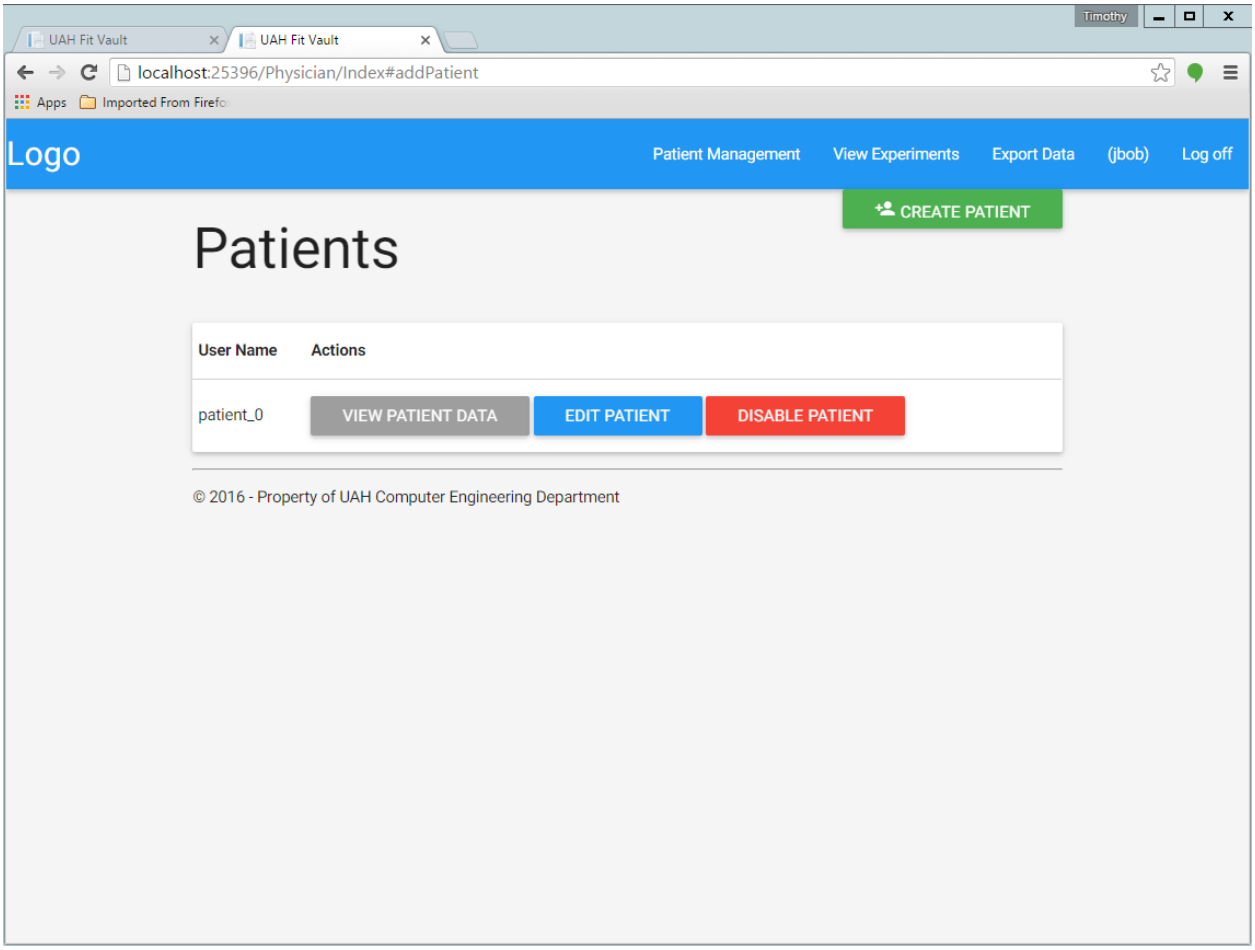
Table of Contents

- Patient Data View
  - Physician
  - Patient

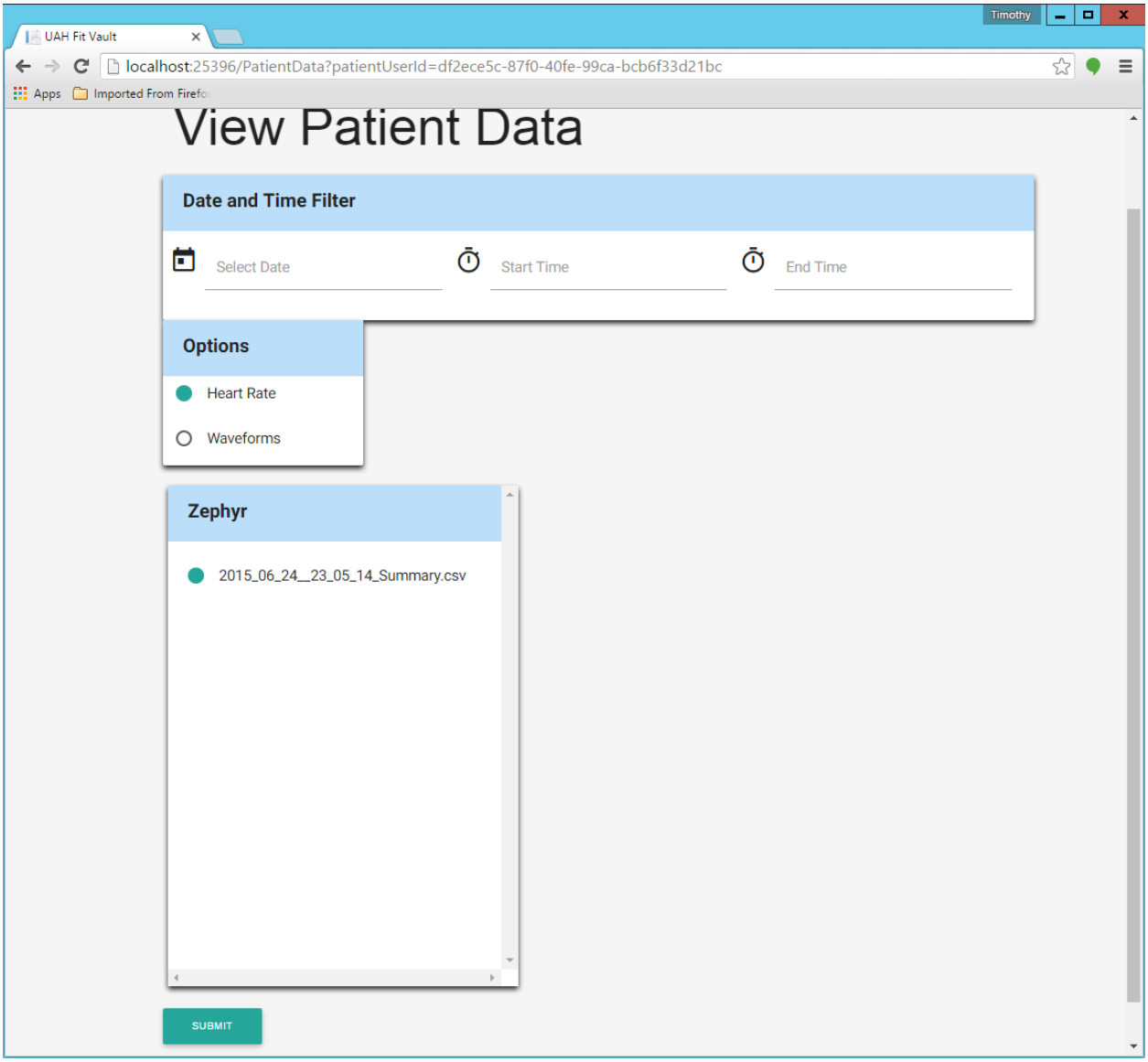
Both Physicians and Patients can view a patient's data.

Physician

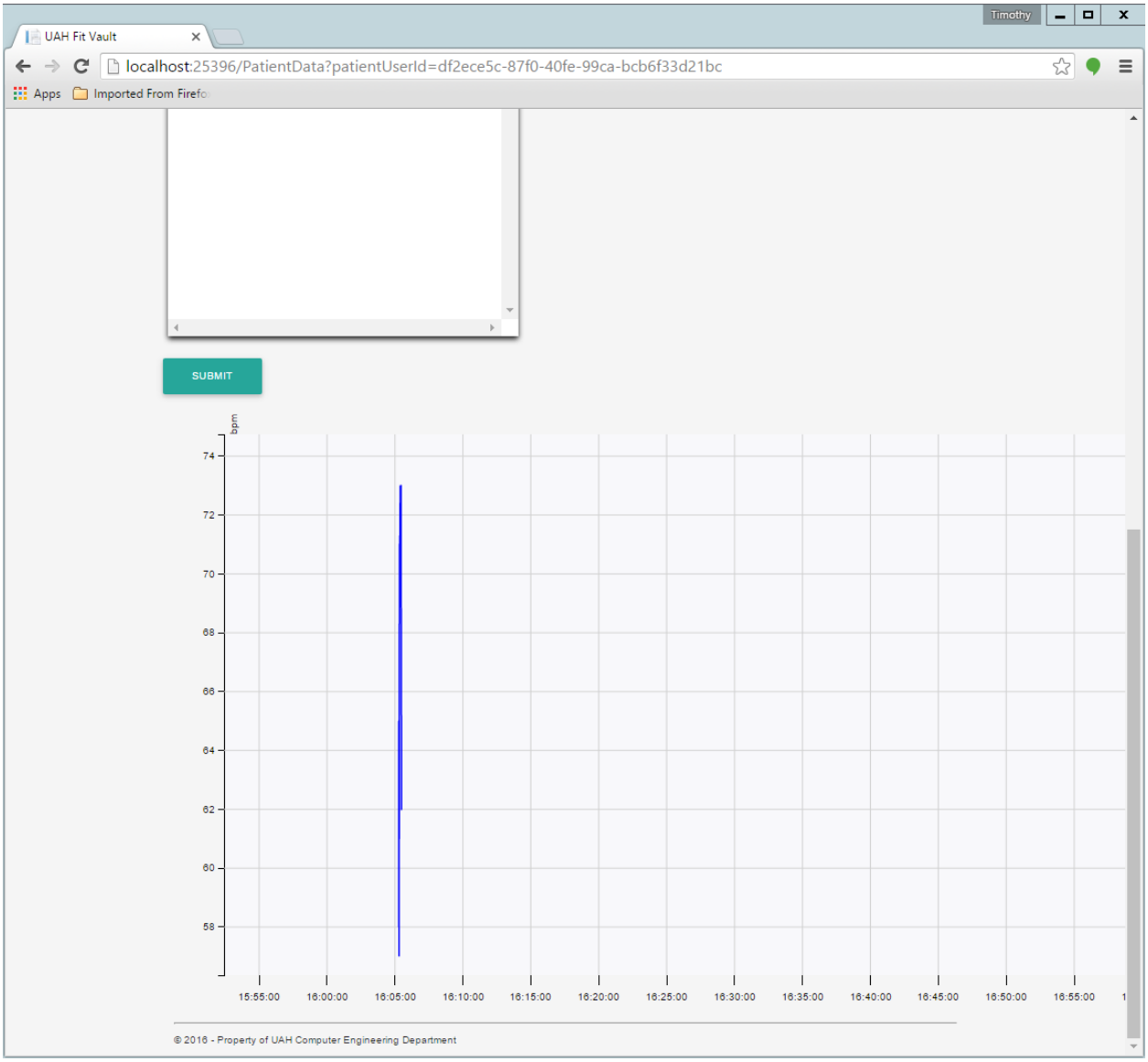
To view patient data as a physician, login with your physician account credentials. Click on the "Patient Management" button at the top right of the page. You should then be taken to a page that looks like this:



You can then click on the "VIEW PATIENT DATA" button for the corresponding patient who's data you want to view. You will then be taken to a page that looks like this:

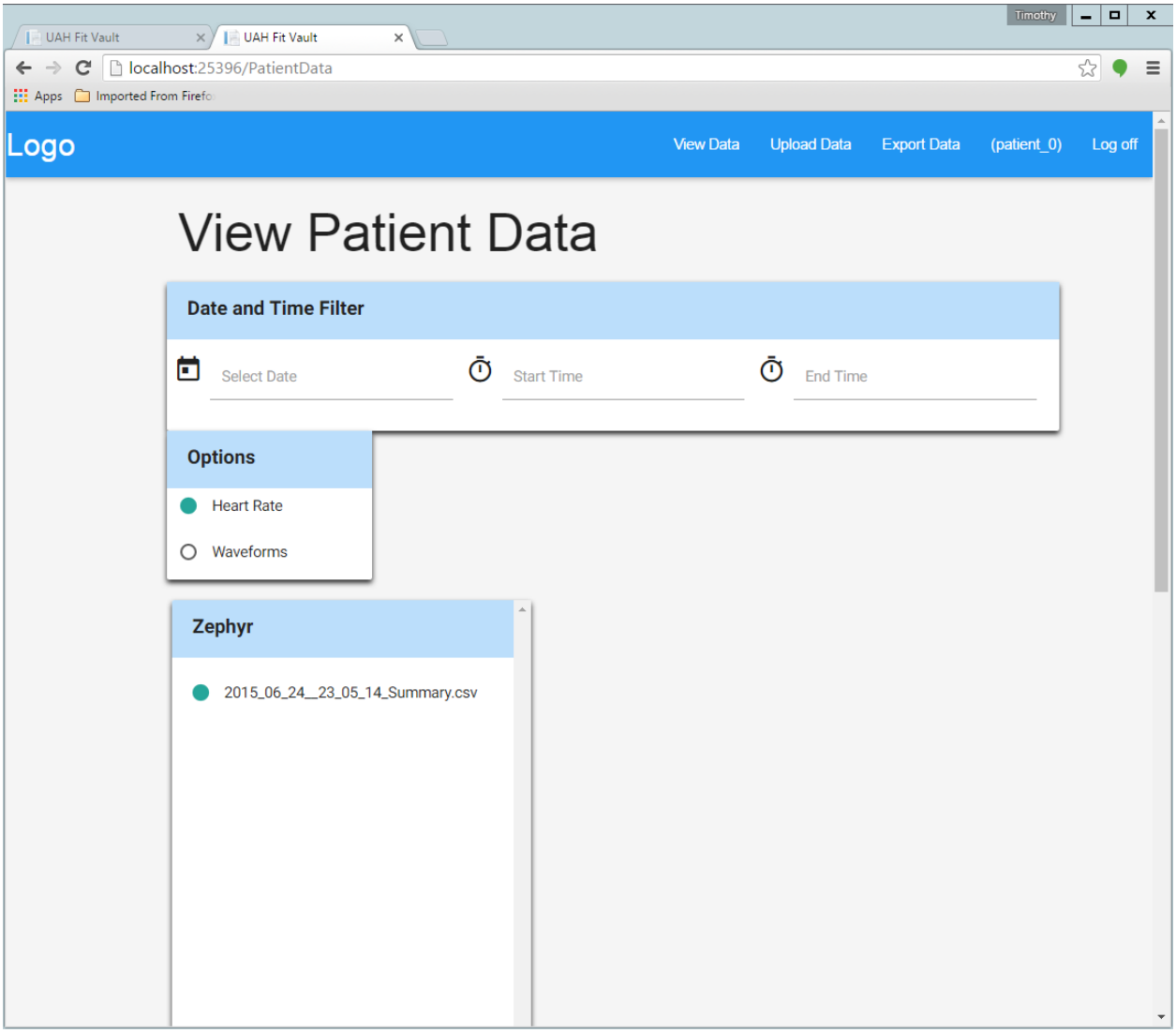


You can then select a date and a start time and end time. Then select the file you want to view. Click the "SUBMIT" button to display the data at the bottom of the page. It should look like this:

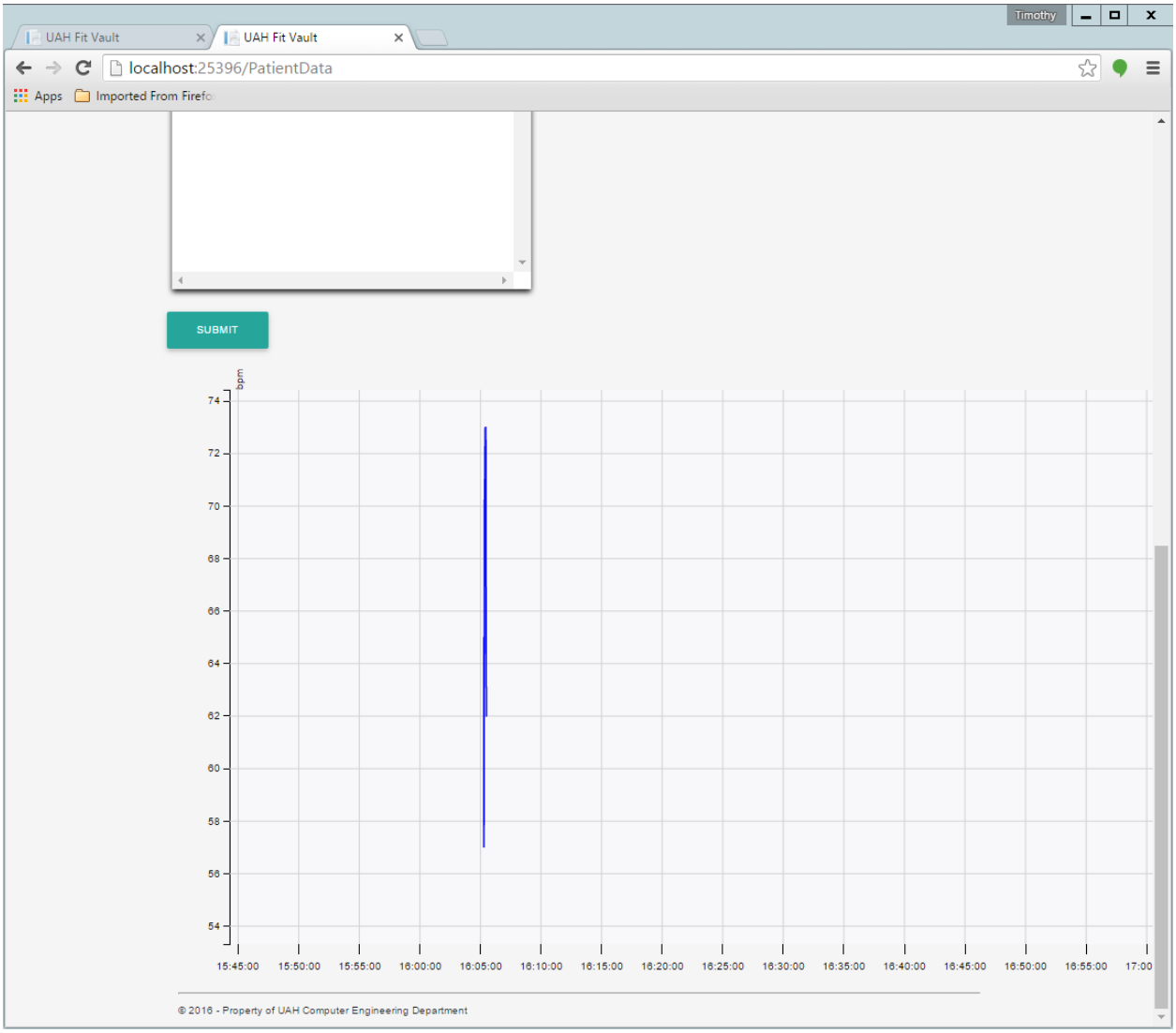


Patient

To view patient data as a patient, login with your patient account credentials. You can then click the "View Data" button at the top right of the page. You should then be taken to a page that looks like this:



You can then select a date and a start time and end time. Then select the file you want to view. Click the "SUBMIT" button to display the data at the bottom of the page. It should look like this:



Patient Data Download

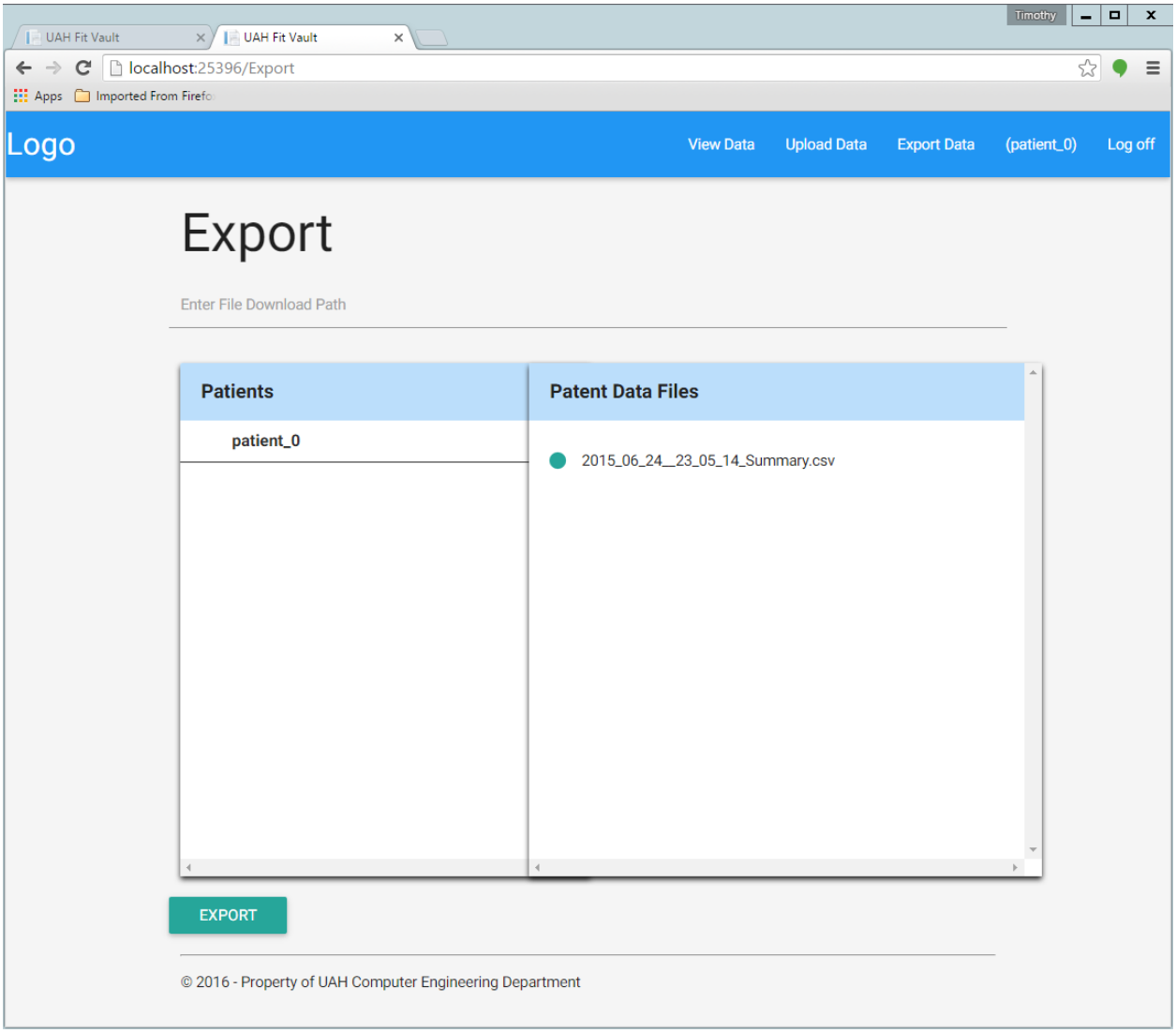
Table of Contents

- Patient Data Download
  - Patient Account

Patients have the ability to export any data they have uploaded.

Patient Account

Login with your patient credentials. You should see an "Export Data" button at the top right of the page. Click on this button and you will be taken to a page that looks like this:



Click on your patient account in the "Patients" window, then click on the file you want to export in the "Patient Data Files" window. Then simply click the "EXPORT" button at the bottom of the page to start the download.

CHAPTER

TWO

UAHEALTH BIT VAULT SOFTWARE TEST DESCRIPTION

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- UAHealth Bit Vault Software Test Description
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2.1 Scope

2.1.1 Identification

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

2.1.2 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.

2.1.3 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.

2.2 Referenced Documents

None.

2.3 Test Descriptions

2.3.1 Pytest Tests

Table of Contents

- Pytest Tests
  - Test Preparations
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    - Other Preparations
  - Test Execution
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Test Preparations

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 UAHealth 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 the latest Active Python 3.4 installed on this computer. It can be found Here. The OS may be Windows 7/2012 or later. The required python packages can be installed by running:

```
pip install -r ./Tests/requirements.txt
```

Other Preparations

Because patient accounts are not deleted from the database, you need to manually remove the following patient accounts before performing tesitng:

- testPatient
- testPatient2
- pfry

Test Execution

To run these tests, open a command prompt and navigate to the Tests folder (<project_path>/med656/Tests). Then execute the following command:

py.test -v -s test_create_account.py test_edit_account.py test_experiment.py test_login.py test_password.py test_security.py test_upload.py test_username.py test_export.py

The test report will be printed out to the screen. It will display all the tests that were run along with their pass/fail status.

Test Details

Follow the table below to find details of the test automation.

test_create_account module

These test cases are designed to test the ability to create and delete accounts

test_create_account.**test_create_experiment_admin**(*logoff*)

Requirements:

- 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: The system shall provide account management.
- 3.1.6.1: The system shall allow account creation
- 3.1.6.1.1: The system shall force account approval for experiment admins
- 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

Pre Conditions:

- logoff fixture

Input:

- user = 'awong'
- pwd = 'P@ssword10'
- email = 'awong@futurama.com'
- first_name = 'Amy'
- last_name = 'Wong'
- address = '304 Wherever Street, New New York City, New New York'
- phone_number = '123-456-7890'

Steps	Expected Result	Actual Result
request account	Request confirmed	
approve account	Admin can approve	
login	User can login	

test_create_account.**test_create_patient**(*login_tphysician*)

Requirements:

•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: The system shall provide account management.

•3.1.6.1: The system shall allow account creation

•3.1.6.1.2: Patients shall not need approval for account creation

•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

Pre Conditions:

•login_tphysician fixture

Input:

•user = 'testPatientCreate_<random number>'

•pwd = 'P@ssword10'

•byear = '1954'

•bmonth = 'March'

•bday = '3'

•loc = 'Alabama'

•wght = '200'

•hght = '72'

•gen = 'male'

•race = 'white'

•eth = 'non_hispanic'

•physician = 'testPhysician'

Steps	Expected Result	Actual Result
create patient account	No error msgs	
login as patient	Patient can login	

test_create_account.**test_create_physician**(*logoff*)

Requirements:

•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: The system shall provide account management.

•3.1.6.1: The system shall allow account creation

•3.1.6.1.1: The system shall force account approval for physicians

•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

Pre Conditions:

•logoff fixture

Input:

•user = 'hfarnswroth'

•pwd = 'P@ssword10'

•email = 'hfarnsworth@futurama.com'

•first_name = 'Hubert'

•last_name = 'Farnsworth'

•address = '304 Wherever Street, New New York City, New New York'

•phone_number = '123-456-7890'

Steps	Expected Result	Actual Result
request account	Request confirmed	
approve account	Admin can approve	
login	User can login	

test_create_account.**test_create_system_admin**(*login_sysadmin*)

Requirements:

•3.1.1.1.4.1: minimum information stored for experiment admin account

•3.1.1.1.4.2: System Administrators shall be able to enable users

•3.1.6: The system shall provide account management.

•3.1.6.1: The system shall allow account creation

•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

Pre Conditions:

•logoff fixture

Input:

•user = 'lnibbler'

•pwd = 'P@ssword10'

•email = 'lnibbler@futurama.com'

Steps	Expected Result	Actual Result
Login as fitadmin	Login Successful	
Create another system admin	No errors	
login as new system admin	User can login	

test_create_account.**test_delete_experiment_admin**(*logoff*)

Requirements:

•3.1.6.3: System administrator can delete accounts

•3.1.6: The system shall provide account management.

Pre Conditions:

•logoff fixture

Input:

•user = 'awong'

•username = 'Amy Wong'

•pwd = 'P@ssword10'

Steps	Expected Result	Actual Result
delete experiment admin account	No error msgs	
login as patient	User cannot login	

test_create_account.**test_delete_patient**(*logoff*)

Requirements:

•3.1.1.1.2.6: Physicians can delete patients

Pre Conditions:

•logoff fixture

Input:

•user = 'pfry'

•pwd = 'P@ssword10'

•phy = 'testPhysician'

•phy_pass = 'P@ssword10'

Steps	Expected Result	Actual Result
delete patient account	No error msgs	
login as patient	Patient cannot login	

test_create_account.**test_delete_physician**(*logoff*)

Requirements:

•3.1.6.3: System administrator can delete accounts

•3.1.6: The system shall provide account management.

Pre Conditions:

•logoff fixture

Input:

•user = 'hfarnswroth'

•username = 'Hubert Farnsworth'

•pwd = 'P@ssword10'

Steps	Expected Result	Actual Result
delete physician account	No error msgs	
login as patient	User cannot login	

test_edit_account module

These tests are here to verify that the accounts can have their information edited.

test_edit_account.**test_physician_can_edit_his_account**(*login_tphysician*)

Requirements:

•3.1.1.1.2.2: Physician can update his account

•3.1.6.2: System shall allow users to edit their account

Pre Conditions:

•login_tphysician fixture

Input:

Steps	Expected Result	Actual Result
Go to management page	No Errors	
Change the email address	No Errors	
Check the email address	Email has changed	

test_login module

These tests are to verify that the accounts can be logged into

test_login.**test_login_bad_pass**(*logoff*)

Requirements:

•3.1.1: System shall provide user authentication

Pre Conditions:

•logoff fixture

Input:

•user = 'testPhysician'

•password = '!nc0rrect'

•expected = 'Invalid login attempt.'

Expected Results:

User 'testPhysician' sees the home page after logging in

Steps	Expected Result	Actual Result
login	Invalid login	

test_login.**test_login_bad_user**(*logoff*)

Requirements:

•3.1.1: System shall provide user authentication

Pre Conditions:

•logoff fixture

Input:

•user = 'fake'

•password = 'P@ssword10'

•expected = 'Invalid login attempt.'

Expected Results:

User 'testPhysician' sees the home page after logging in

Steps	Expected Result	Actual Result
login	Invalid login	

test_login.**test_login_experiment_admin**(*logoff*)

Requirements:

•3.1.1: System shall provide user authentication

•3.1.1.5: System shall allow user to log out of account

Pre Conditions:

•logoff fixture

Input:

•user = 'testExpAdmin'

•password = 'P@ssword10'

Expected Results:

User 'testPhysician' sees the home page after logging in

Steps	Expected Result	Actual Result
login	Login Success!	

test_login.**test_login_patient**(*logoff*, *test_patients*)

Requirements:

•3.1.1: System shall provide user authentication

•3.1.1.5: System shall allow user to log out of account

Pre Conditions:

•logoff fixture

Input:

•user = 'testPatient'

•password = 'P@ssword10'

Expected Results:

User 'testPhysician' sees the home page after logging in

Steps	Expected Result	Actual Result
login	Login Success!	

test_login.**test_login_physician**(*logoff*)

Requirements:

•3.1.1: System shall provide user authentication

•3.1.1.5: System shall allow user to log out of account

Pre Conditions:

•logoff fixture

Input:

•user = 'testPhysician'

•password = 'P@ssword10'

Expected Results:

User 'testPhysician' sees the home page after logging in

Steps	Expected Result	Actual Result
login	Login Success!	

test_login.**test_login_system_admin**(*logoff*)

Requirements:

•3.1.1: System shall provide user authentication

•3.1.1.5: System shall allow user to log out of account

Pre Conditions:

•logoff fixture

Input:

•user = 'fitadmin'

•password = 'Password1!'

Expected Results:

User 'testPhysician' sees the home page after logging in

Steps	Expected Result	Actual Result
login	Login Success!	

test_password module

These tests are to make sure password functionality meets the requirements

test_password.**test_password_case**(*logoff*)

Requirements:

•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

Pre Conditions:

•logoff fixture

Input:

•user = 'pfry'

•pwd = 'p@ssword10'

•email = 'pfry@futurama.com'

•first_name = ‘Fry’

•last_name = ‘Phillip’

•address = ‘304 Wherever Street, New New York City, New New York’

•phone_number = ‘123-456-7890’

Steps	Expected Result	Actual Result
request account	password case error	

test_password.**test_password_digit**(*logoff*)

Requirements:

•3.1.1.4: System requires a minimum security criteria

•3.1.1.4.3: Password shall contain at least 1 number

Pre Conditions:

•logoff fixture

Input:

•user = ‘pfry’

•pwd = ‘P@ssworddd‘

•email = ‘pfry@futurama.com‘

•first_name = ‘Fry’

•last_name = ‘Phillip’

•address = ‘304 Wherever Street, New New York City, New New York’

•phone_number = ‘123-456-7890’

Steps	Expected Result	Actual Result
request account	password digit error	

test_password.**test_password_length**(*logoff*)

Requirements:

•3.1.1.4: System requires a minimum security criteria

•3.1.1.4.1: Password must be at least 10 characters

Pre Conditions:

•logoff fixture

Input:

•user = ‘pfry’

•pwd = ‘P@ssword1‘

•email = ‘pfry@futurama.com‘

•first_name = ‘Fry’

•last_name = ‘Phillip’

•address = ‘304 Wherever Street, New New York City, New New York’

•phone_number = ‘123-456-7890’

Steps	Expected Result	Actual Result
request account	password length error	

test_password.**test_password_special_char**(*logoff*)

Requirements:

•3.1.1.4: System requires a minimum security criteria

•3.1.1.4.4: Password shall contain at least 1 special character

Pre Conditions:

•logoff fixture

Input:

•user = 'pfry'

•pwd = 'Password10'

•email = 'pfry@futurama.com'

•first_name = 'Fry'

•last_name = 'Phillip'

•address = '304 Wherever Street, New New York City, New New York'

•phone_number = '123-456-7890'

Steps	Expected Result	Actual Result
request account	password digit error	

test_password.**test_reset_password**(*login_sysadmin*)

Requirements:

•3.1.1.1.4.3: System Administrators can reset passwords

Pre Conditions:

•login_sysadmin fixture

Input:

•user = 'testPhysician2'

•username = 'test physician2'

•pwd = 'Password1!'

Steps	Expected Result	Actual Result
Set users password to new password	No errors	
Login with the new password	User can login	

test_security module

test_security.**test_experiment_creation_security**(*login_tpatient*)

Requirements:

•3.1.4.1: Experiments shall only be created by experiment admins

Pre Conditions:

•login_tpatient fixture

Input:

•physician = 'testPhysician'

•physicianpass = 'P@ssword10'

•admin = 'fitadmin'

•adminpass = 'Password1!'

Steps	Expected Result	Actual Result
look for the create experiment button	there is no create experiment button	
logoff and login as testPhysician	no errors	
look for the create experiment button	there is no create experiment button	
logoff and login as fitadmin	no errors	
look for the create experiment button	there is no create experiment button	

test_security.**test_patient_only_sees_his_data**(*test_patients*)

Requirements:

•3.1.1.1.2.4: Physician can only view his patients data

Pre Conditions:

•test_patients fixture

Input:

•file = path.abspath('./Data/BasisPeak/bodymetrics_2012-01-30T00-00-00_2016-01-18T04-51-00.csv')

•fyear = '2015'

•fmonth = 'June'

•fday = '23'

•tyear = '2015'

•tmonth = 'June'

•tday = '23'

•device = 'basis'

•activities = []

Steps	Expected Result	Actual Result
login as the test patient 2	your at the home page	
upload a test data file	no errors	
logoff	back at the login screen	
login as test patient 1	your at the home page	
click the view data button	you see all the files that have been uploaded	
look for the file that was just uploaded	you do not see the file you uploaded in step 2	

test_security.**test_physician_to_patient**(*logoff*)

Requirements:

•3.1.1.1.2.4: Physician can only view his patients data

Pre Conditions:

•logoff fixture

Input:

•physician = 'testPhysician3'

•phys_pass = 'P@ssword10'

•phys_email = 'testphysician3@uah.com'

•phys_add = 'here'

•phys_fname = 'test'

•phys_lname = 'physicianthree'

•phys_phone = '123-456-7890'

•patient = 'testPatient5'

•pat_pass = 'P@ssword10'

•bday = 'April 1, 1987'

•loc = 'Alabama'

•wght = '123'

•hght = '123'

•gen = 'male'

•race = 'white'

•eth = 'non_hispanic'

•test_physician = 'testPhysician'

•test_phys_pass = 'P@ssword10'

Steps	Expected Result	Actual Result
create physician	no errors	
create patient for physician	no errors	
login as testPhysician	login success	
check for patient in management page	patient not listed	

test_security.**test_system_admin_user_management**(*login_tpatient*)

Requirements:

•3.1.6.4: Only system admin can enable accounts

•3.1.6.5: Only system admin can delete accounts

Pre Conditions:

•login_tpatient fixture

Input:

•physician = 'testPhysician'

•physicianpass = 'P@ssword10'

•expadmin = 'testExpAdmin'

•expadminpass = 'P@ssword10'

Steps	Expected Result	Actual Result
look for the manage users button	manage users button does not exist	
logoff and login as the testPhysician	no errors	
look for the manage users button	manage users button does not exist	
logoff and login as the testExpAdmin	no errors	
look for the manage users button	manage users button does not exist	

test_upload module

test_upload.**test_basis_data_upload**(*login_tpatient*)

Requirements:

•3.2.4.2: System shall support Basis Peak data

Pre Conditions:

•login_tpatient fixture

Input:

•activities = []

•file = path.abspath('./Data/BasisPeak/bodymetrics_2012-01-30T00-00-00_2016-01-18T04-51-00.csv')

Steps	Expected Result	Actual Result
upload file	no errors, and returned to /PatientData	

test_upload.**test_mband_data_upload**(*login_tpatient*)

Requirements:

•3.2.4.3: System shall support Microsoft Band data

Pre Conditions:

•login_tpatient fixture

Input:

•activities = []

•file = path.abspath('./Data/MBand/')

Steps	Expected Result	Actual Result
upload file	no errors, and returned to /PatientData	

test_upload.**test_single_file_multi_activity**(*login_tpatient*)

Requirements:

•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

Pre Conditions:

•login_tpatient fixture

Input:

•activities

– activity 1

∗'type':'Home Eating',

∗'year':2015,

∗'month':'June',

∗'day':24,

∗‘startTime’: ‘11:00 PM’,

∗‘endTime’: ‘11:30 PM’},

–activity 2

∗‘type’:’Home Cooking’,

∗‘year’:2015,

∗‘month’:’June’,

∗‘day’:24,

∗‘startTime’: ‘12:00 PM’,

∗‘endTime’: ‘12:30 PM’

•file = path.abspath(‘./Data/Zephyr/ZephyrTestData/2015_06_24__23_05_14_Accel.csv’)

Steps	Expected Result	Actual Result
upload file	no errors, and returned to /PatientData	

test_upload.**test_single_file_no_activity**(*login_tpatient*)

Requirements:

•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

Pre Conditions:

•login_tpatient fixture

Input:

•activities = []

•file = path.abspath(‘./Data/Zephyr/ZephyrTestData/2015_06_24__23_05_14_Accel.csv’)

Steps	Expected Result	Actual Result
upload file	no errors, and returned to /PatientData	

test_upload.**test_single_file_one_activity**(*login_tpatient*)

Requirements:

•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

Pre Conditions:

•login_tpatient fixture

Input:

•activities = [{‘type’:’Home Eating’, ‘year’:2015, ‘month’:’June’, ‘day’:24, ‘startTime’: ‘11:00 PM’, ‘endTime’: ‘11:30 PM’}]

•file = path.abspath(‘./Data/Zephyr/ZephyrTestData/2015_06_24__23_05_14_Accel.csv’)

Steps	Expected Result	Actual Result
upload file	no errors, and returned to /PatientData	

test_upload.**test_zephyr_data_upload**(*login_tpatient*)

Requirements:

•3.2.4.1: System shall support Zephyr data

Pre Conditions:

•login_tpatient fixture

Input:

•activities = []

•file = path.abspath('./Data/Zephyr/ZephyrTestData/2015_06_24__23_05_14_BB.dat')

Steps	Expected Result	Actual Result
upload file	no errors, and returned to /PatientData	

test_username module

These tests are to make sure the username functions correctly

test_username.**test_username_cannot_be_copied**(*logoff*)

Requirements:

•3.1.1.2: Usernames must be unique

•3.1.1.3: The system shall assign unique ids to each created patient.

•3.1.1.2.1: Users cannot change username to an already existing username

Pre Conditions:

•logoff fixture

Input:

•user = 'copy'

•pwd = 'P@ssword10'

•email = 'copy@copy.com'

•first_name = 'Fry'

•last_name = 'Phillip'

•address = '304 Wherever Street, New New York City, New New York'

•phone_number = '123-456-7890'

•user_2 = 'copy1'

•email_2 = 'copy2@copy.com'

Steps	Expected Result	Actual Result
Request physician account	No errors	
Request same physician account	Username taken error	
Request different account	No errors	

conftest module

conftest.**login_sysadmin**()

conftest.**login_texpadmin**()

conftest.**login_tpatient**()

conftest.**login_tphysician**()

conftest.**logoff**()

conftest.**pre_existing_users**(*request*)

conftest.**pytest_addoption**(*parser*)

conftest.**test_patients**()

WebUI package

Submodules

WebUI.WebUI module These are the web user interface utilities used to drive the web tests.

class WebUI.WebUI.**WebUI**(*baseurl='http://localhost:25396/'*)

This class keeps track of the web session. It uses Firefox as the web driver. Its baseurl is the start page of the software. By default it is the localhost on port 25396.

approve_account(*user*)

Logs in as the system admin and approves an account with the given username

Parameters **username** – Username of the account to approve

Returns

check_create_patient()

Validates that the patient creation was successful

Returns

check_login(*user=''*, *t=5*)

This will verify you are logged in. It checks for the manage account link that only appears if you are logged in.

Parameters

- **t** – A timeout in seconds to wait for the management link to appear
- **user** – Check to see if this is the user that is logged in

Returns

check_logoff(*t=10*)

This will check that there is no logged in user for the session

Parameters **t** – time in seconds to wait for the login button to appear. The default is 10.

Returns

check_request_account()

Validates that the account request was successful

Returns

confirm_account_info(*email=''*, *address=''*, *phonenum=''*)
This procedure will confirm account information of whatever information is provided.

Parameters

- **email** – the expected email address
- **address** – the expected home address
- **phonenum** – the expected phone number

Returns

create_admin(*user*, *pwd*, *email*)

create_experiment(*expName*, *startAge*, *endAge*, *startHght*, *endHght*, *startWght*, *endWght*, *genders*, *races*, *ethnicities*, *locations*)

create_patient(*phy*, *phy_pass*, *user*, *pwd*, *byear*, *bmonth*, *bday*, *location*, *weight*, *height*, *gender*, *race*, *ethnicity*)
This will create a patient account. It expects the physician to be logged in when called.

Parameters

- **user** –
- **pwd** –

Returns

delete_account(*user*)
This logs in as the system admin and deletes the specified user

Parameters **user** – username of the account to delete

Returns

delete_all_accounts()

delete_experiment(*name*)

delete_patient(*phy*, *phy_pass*, *user*)
This logs in as the physician and deletes the specified user

Parameters

- **phy** – name of the physician that the patient belongs to
- **phy_pass** – password of the physician
- **user** – username of the account to delete

Returns

driver = <selenium.webdriver.firefox.webdriver.WebDriver (session="35a6739b-1125-4ed2-a42f-eb2de542a795")>

export_data(*path*)

get_page()
Helper procedure to return the current web pages source useful to validate responses on the page

Returns

go_home()
Navigates the web session back to the base url

Returns

login(*user*, *pwd*)
This will make sure you are logged in as the user specified. It will log you out if you are already logged in.

Parameters

- **user** – Username to log in as
- **pwd** – Password for the given username

Returns

logoff()
This will log the logged in user off.

Returns

request_account(*account_type*, *user*, *pwd*, *email*, *first_name*, *last_name*, *address*, *phone_number*)
This will fill out a request for an account. To request an account you must be logged out therefore this procedure will make sure you are logged out

Parameters

- **account_type** – The type of account to request. can either be Physician or Exp Admin
- **user** – The username of the new account
- **pwd** – The password of the new account
- **email** – The email address of the new account
- **first_name** – The first name of the user
- **last_name** – The last name of the user
- **address** – The home address of the user
- **phone_number** – The phone number of the user

Returns

reset_user_password(*user*, *new_pwd*)
This procedure will make the system admin reset an accounts password

Parameters

- **user** – username of the account to touch
- **new_pwd** – the new password to give the account

Returns

set_account_info(*pwd=''*, *current_pwd=''*, *email=''*, *address=''*, *phonenum=''*)
This procedure will set the account info to any info provided if provided It assumes the user is already logged in

Parameters

- **pwd** – the new password desired
- **current_pwd** – the current password. needed to change passwords
- **email** – the new email address
- **address** – the new home address
- **phonenum** – the new phone number

Returns

upload_files(*file*, *fyear*, *fmonth*, *fday*, *tyear*, *tmonth*, *tday*, *device*, *activities*)
This will uplaod files for a patient with the given activities

Parameters

- **file** – Relative paths to files to be uploaded
- **fyear** – The year the file started collecting
- **fmonth** – The month the file started collecting
- **fday** – The day the file started collecting
- **tyear** – The year the file stopped collecting
- **tmonth** – The month the file stopped collecting
- **tday** – The day the file stopped collecting
- **device** – The device the file came from. must be 'zephyr', 'basis', or 'band'
- **activities** – A list of dictionaries. dicts look like: {'type':'Home Eating', 'year':1920, 'month':'January', 'day':3, 'startTime': '11:00 AM', 'endTime': '11:30 AM'}

Returns

view_data()

view_experiment(*name*)

Module contents

2.3.2 Manual Tests

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    - Multiple File Upload Test
    - User Privacy Test
    - Physician Graph View
    - Database Verification Test
    - Internet Access Verification Test
    - OS Test

Test Preparations

Hardware Preparations

You need a computer with access to the UAHealth server.

Software Preparations

You need the latest Chrome or Firefox version installed on the computer.

Other Preparations

It is expected that you will have run the automated tests before executing these tests. Some of the users and data depend on the automation have run correctly.

Test Details

Multiple File Upload Test

Requirements:

- 3.1.2.1: The system shall process multiple files at the same time

Pre Conditions:

- You must be logged in as the testPatient user using these credentials
- Username: 'testPatient'
- Password: 'P@ssword10'
- You must have access to the data files in the project folder here: ./med656/Tests/Data

Input:

Test Procedure:

Steps	Expected Result	Actual Result
click the 'Upload Data' link in top right corner of page	Taken to the upload page	
click the 'BROWSE' button	Windows file select wizard opens	
navigate to ./med656/Tests/Data/Zephyr/ZephyrTestData/	Files are visible	
highlight the ...Accel.csv and ...BB.csv files by holding ctrl and clicking	Files are highlighted	
click the 'chose' button on the wizard	File names are in the upload page now	
fill in date 6-24-2015 for both from date and to date	Dates are visible on the page	
click on zephyr radio button	Radio button is highlighted	
click "SUBMIT" button	No errors are displayed	

User Privacy Test

Requirements:

- 3.1.1.1.1.2: The system shall prevent any personal identifiable information from being available for a Patient

Pre Conditions:

- The user must be logged off
- A physician named 'testPhysician' must be created

- To check if this user is created login as user 'fitadmin' password 'Password1!'
- Click the 'Manage Accounts' button at the top of the page
- Select 'Physicians' from the Roles dropdown and look for 'testPhysician'
- If physician 'testPhysician' does not exist
  - Follow the steps here (*Physician Account*) to create a physician account with the following information
  - first name = test
  - last name = test
  - username = testPhysician
  - password = 'P@ssword10'
  - email = testphysician@test.com
  - address = here
  - phone number = 123-456-7890
  - reason = test

Input:

- user = 'testPatientPrivacy'
- password = 'P@ssword10'

Test Procedure:

Steps	Expected Result	Actual Result
login as 'testPhysician' with password 'P@ssword10'	Login Success!	
click 'create patient' button	Taken to the create patient page	
verify that none of the information requested is personally identifiable	None of the info is personally identifiable	

Physician Graph View

Requirements:

- 3.1.1.1.2.3: The system shall allow the physician user to view their patient's data graphically.
- 3.1.7: The system shall provide a user interface for displaying medical data in the system.
- 3.1.7.16: The system shall display summary heart rate data on a chart from the Zephyr and BasisPeak.
- 3.1.7.16.1: The chart showing summary heart rate data from the Zephyr and BasisPeak will also show heart rate data from the Microsoft Band.

Pre Conditions:

- The user must be logged off
- A physician named 'testPhysician' must be created
- To check if this user is created login as user 'fitadmin' password 'Password1!'
- Click the 'Manage Accounts' button at the top of the page
- Select 'Physicians' from the Roles dropdown and look for 'testPhysician'

- If physician 'testPhysician' does not exist
  - Follow the steps here *Physician Account* to create a physician account with the following information
  - first name = test
  - last name = test
  - username = testPhysician
  - password = 'P@ssword10'
  - email = testphysician@test.com
  - address = here
  - phone number = 123-456-7890
  - reason = test
- 'testPhysician' must have a patient 'testPatientGraphView'
  - If patient 'testPatient' does not exist
    - Follow the steps here *Patient Account* to create patient 'testPatientGraphView' with to following information
    - user = 'testPatient'
    - pwd = 'P@ssword10'
    - birthday = '3 March, 1954'
    - location = 'Alabama'
    - weight = '200'
    - height = '72'
    - gender = 'male'
    - race = 'white'
    - ethnicity = 'non_hispanic'

Input:

- user = 'testPatientPrivacy'
- password = 'P@ssword10'

Test Procedure:

Steps	Expected Result	Actual Result
Login as 'testPatient' with password 'P@ssword10'	Login Success!	
Follow user guide instructions *here* to upload the following files from this folder <project directory>/med656/Tests/Data/: - BasisPeak/bodymetrics_simple.csv - Zephyr/ZephyrTestData/2015_06_24__23_05_14_Summary.cvs - Band/data.csv	There are no errors while uploading data	
Logout and log back in as 'testPhysician' with password 'P@ssword10'	Login Success!	
Follow instructions *here* to view the 'testPatient' data that was just uploaded.	The summary heart rate graph can be seen for the Zephyr, BasisPeak, and Band	

Database Verification Test

Requirements:

- 3.1.3: The system shall connect to a database
- 3.2.2: The system shall use a SQL database

Pre Conditions

Inputs

Test Procedure

Steps	Expected Result	Actual Result
Login locally or remote in to the UAHealt Bit Vault server desktop	you are at the windows desktop	
Open Microsoft SQL Database Manager	you can see the uahbitvault database	

Internet Access Verification Test

Requirements:

- 3.2.3: The system shall be connected to a network with internet access

Pre Conditions

Inputs

Test Procedure

Steps	Expected Result	Actual Result
Login to the machine the system is running on	You are at the Windows Desktop	
Open a command prompt	You are presented with the Windows prompt	
Execute "ping www.google.com"	Pings respond with 100% pass	

OS Test

Requirements:

- 3.2.1: The system shall run on Windows Server Operating System

Pre Conditions:

Input:

Test Procedure:

Steps	Expected Result	Actual Result
Login to the machine the system is running on	You are at the Windows Desktop	
Open a command prompt	You are presented with the Windows prompt	
Execute “systeminfo”	The ‘OS Name:’ is ‘Microsoft Windows Server’	

CHAPTER

THREE

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