Description (first part of product data sheet):

VirtualScope is a visual resource for students, educators, and interested individuals. It is a website that allows its users to have live access from remote locations to their microscope projects. With constant streaming, users can access one or more video feeds from a dedicated website at any time from the comforts of their home or work. The website also offers time taken photos of the microscope subject for the user to compare. Administrators can manage and keep track of users. They are also able to modify the live streams and its corresponding microscope.

More information for product data sheet:

Users can access the website online at virtualscope.site with their computer, tablet, and/or mobile device. Each microscope has a dedicated raspberry pi and camera to capture its subject. Multiple livestreams are possible through the connection of the raspberry pi(s) to a live streaming platform, which is embedded on the website. All users simply log into the website to access the livestream and view photos of a microscope’s content. Teachers and/or administrators have more accessibility. They can modify class passwords, track user logins, modify user account(s), and modify microscopes.

All Users:

* Live streaming
* View photos

Administrators:

* Modify class passwords
* Track user logins
* Modify user accounts
* Modify microscopes

About Us:

The inception of VirtualScope began with Professor Cindy Harley. Professor Harley is an Assistant Professor of Natural Sciences at Metropolitan State University. While teaching, she found that it was hard for students to come in and observe microscopic contents on a regular basis. She saw that students needed a way to view microscope contents while not at school. With that in mind, she wanted to have some sort of live stream of the microscope content but did not have the knowledge on how to implement her idea. Professor Harley contacted a professor in the Computer Science field and was able to get connected to a group of students that would bring her idea to fruition.

The design and creation of the project in collaboration with Professor Cindy Harley comes from Team Puma. Team Puma consists of four students at Metropolitan State University. The members of Team Puma include: Yer Moua, Ryan Vagle , Jahia Vang, and Hlee Yang. The group formed in the Capstone Class under Professor David Levitt during Fall 2019. Team Puma developed the project for the benefit of individuals who could not be on campus constantly observing microscopic subjects. With the large number of nontraditional students that attend Metropolitan State University, VirtualScope is a convenient and necessary tool to complete assignments and learn. The website provides the following features to users:

Features

* Account Creation
* Log into website
* Livestream of microscope subject
* Utilize administrator rights
* View interval taken photos of microscope subject
* View and modify class passwords
* Track user logins
* Modify user account
* View and configure microscopes
* Return to homepage
* Learn about the creators

This manual explains the many ways in which to use the site in order to get the most out of website virtualscope.site.

Account Creation

This feature is for first time users.

VirtualScope allows users to create an account which enables the users to view the live stream of a microscope subject and view the interval taken photos of that subject. Without an account, a user is only able to see the homepage.

To create an account, click “Sign up” located at the upper right corner of the homepage. You will be redirected to the Sign Up page. Next fill in all the following: First Name, Last Name, StarId, Class Password, Username, Password, Repeat Password. The Class Password is supplied by an administrator of the website. The Repeat Password must exactly match the Password. Finally click the Submit button. If successful, you will be redirected to the homepage where you can log in to the website. If unsuccessful, you will stay on the Sign Up page.

Log into website

This feature is for all authenticated users.

From the homepage, click on “Login” on the upper right hand corner. You will be redirected to the Log In page. Type in your Username and Password then click the Submit button. If successful, you will redirected the Experiments page. If unsuccessful, you will stay on the Log In page.

Livestream of microscope subject

This feature is for all authenticated users.

* From the experiments page find the microscope you want to view and click the “View Live Stream” button. You will be directed to the Live Stream page.
* From the view photos page, click on the “View the stream” link and you will be directed to the Live Stream page.
* Click the play button on the video to view the live stream. This page will have the following information: microscope name, experiment, class, and availability date listed on the right of the video. There is also a description of the experiment below in the lower left of the frame, below the live streaming video. The 3 latest images taken of the microscope’s subject will be on the bottom right hand corner of the page. You can go directly to the current microscopes pictures by either clicking on the “View Archived Photos” button or the “View All” link in the Latest Images box.

View interval taken photos of microscope subject

This feature is for all authenticated users.

* From the experiments find the microscope you want to view and click the “View Photos” button. You will be directed to the view photos
* From the live stream page view live stream page, click on the “View Archived Photos” button or the “View All” link in the Latest Images box.
* The page will display the name of the microscope in the title. Displayed first (upper leftmost image) is the most recent picture taken of the microscope’s content. The images are displayed left to right, top down for the latest pictures.

Utilize administrator rights

This feature is for authenticated administrators.

* From the home page, click on “AdminPanel” link. You will be directed to the administrator panel.
* The administrative panel has four features that the administrator can utilize: View and modify class passwords, track user logins, modify user accounts, and view and configure microscopes.

View and modify class passwords

This feature is for authenticated administrators.

* From the administrative panel page, click on the “Class Passwords” button. You will be directed to the Class Passwords page.
* This page displays all the class passwords with their corresponding ID, Course name, and Section. The page allow you to add or delete a class password.
* To add a class password, enter in the Course Name, Section, and Class Password and click the “Submit” button. A class password will be added to the existing list and displayed when you hit the button.
* To delete a class password, find the one you want to delete from the existing list and click the “delete” button on its row. The class password will be deleted and it should be removed from the class passwords list displayed.

Track user logins

This feature is for authenticated administrators.

* From the administrative panel page, click on the “Logins” button. You will be directed to the VirtualScope User Login History page.
* This page allows you to search the login history of all users by various criteria. When you arrive on the page, there are three options displayed that you may search by: Name, Date Range, List All.
* Whenever you want to do a new search, simply click on the option you want. Search results are ordered from the most recent logins top down. The result will display row(s) with each row as a login instance. The login instance will display: First Name, Last Name, StarID, Username, User Type, and Timestamp.
* To find a user’s login by First Name and Last Name, click “Name” and two text boxes will be displayed that allows you to fill in the mandatory first and last name of the user. Click the “Search” button to display the search result.
* To search for user logins by name and date range, click “Date Range.”
  + To find all users’ login history by name and date range, click “Date Range”. There are four text boxes that must be filled in: First Name, Last Name, Start Date, and End Date. The date must be in the format month/day/year (MM/DD/YYYY). Click the “Search One” button to display the search result for that one person within that specific date range.
* To search for all user logins, click the “List All” and displayed will be a description that allows you to see all user login history. Click the “Search” button to display all user logins. (This may be a very long list).

Modify user account

This feature is for authenticated administrators.

* From the administrative panel page, click on the “User Accounts” button. You will be directed to the Modify User Account page. When you arrive on the page, there is a list of the current users immediately presented under the Existing User Accounts table. There are three additional features on this page.
* Delete Account by Name: delete a user by first and last name. Click the tab and two text boxes will appear. You must enter in the first and last name. Then you click delete. You will get a prompt that says “Are you sure you want to delete user account(s)?”. Click OK to delete.
* Delete Accounts by Class: you can delete an entire class of users. Click the tab and enter into the two text boxes, course number and section. Then you click delete all. You will get a prompt that says “Are you sure you want to delete user account(s)?”. Click OK to delete.
* Change User Access: you can change a student to admin. Click the tab and enter into the two text boxes the first name and last name of the user you want to change to admin. You will get a prompt that says “Are you sure you want to change this user access to admin?” Click OK to change access to admin.

View and configure microscopes

This feature is for authenticated administrators.

* From the administrative panel page, click on the “Microscopes” button. You will be directed to the Microscope Configurations page.
* The page will display rows of microscopes and their information. You can

Return to homepage

This feature is for all users

* All pages have the VirtualScope logo in the upper leftmost hand corner of the page. Click on the logo to return to the homepage at any time.

Learn about the creators

This feature is for all authenticated users.

* All pages have the “About” link next to the VirtualScope logo on the top of the page. Click on the logo to go to the About Us page. This page displays information about the creators and the purpose of the website.

PRESENTATION:

Deliverables:

1. All the other deliverables
2. user manual and setup guide
3. product data sheet

Intro

(talk about outline presentation)

Product data sheet

Demo: (with userguide)

Setup raspberry pi

Student Actor

Admin Actor

Journey:

technical and non technical