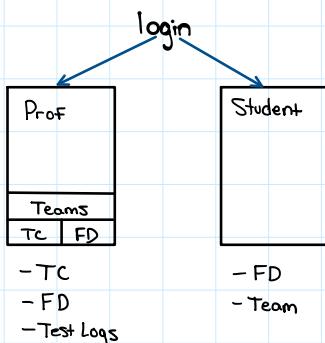


Assumptions:

- Flight Conductor and Operators have Open channel



Epics

- Getting Started
- User login
- TC UI
- FD UI
- Team UI
- Prof UI
  - html
  - SC
  - test env
- Server
  - roles

- T.C → S.C → FD - Team

- Role management

—

# 9/15 - Meeting

Thursday, September 15, 2022 2:00 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Second Team Meeting**

## **Summary of Work:**

- The team met during class time
- Discussed .Net Maui
- Developed Project Vision
- Updated Zenhub

## **Details:**

- If the customer and team conclude on the use of creating an app for this project, the team has decided on .Net Maui as the development framework
- Decided that a list of questions for Dr. Laskey would need to be created to specify the project. Some concerns:
  - o What is the user actually seeing? What does the interaction need to do?
  - o Are we set on needing an app, or could this go another direction?
  - o Do the individual operators have different specific operator roles?
  - o Who decides the student roles for the simulations, and when?
- The epics were started to be drawn up and Kyle adapted them into the zenhub. These can be seen in the diagrams for this meeting:
  - o Getting started
  - o User Login
  - o TC UI
  - o FD UI
  - o Operator UI
  - o Simulated Space Craft
  - o Test environment
  - o Role Manager
  - o Administrator UI
  - o Communications
- These serve as a framework to begin visualizes the steps of the project and are subject to change or detailing
- Many team members added their own features to the epics. I added:
  - o Research possible databases
  - o Schedule meetings with client and product owner
  - o Research other methods of product delivery
  - o Develop list of detailed questions for client
  - o Develop product designs to show client

# 9/15 - Effort

Thursday, September 15, 2022 4:00 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Individual Setup & Work**

## **Summary of Work:**

- Research App Development
- Setup and tested .NET Maui

## **Details:**

- Very little issues getting .Net Maui self-test project to function because already had Visual Studio and Android Emulator downloaded.
- Just had to update Visual Studio with the .Net Maui packages
- Big issues getting the test project Kyle uploaded to the Github to work after ensuring everything was setup properly
- Solution: restart Visual Studio and redownload app code

# 9/14 - Effort

Wednesday, September 14, 2022      6:30 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Individual Research**

## **Summary of Work:**

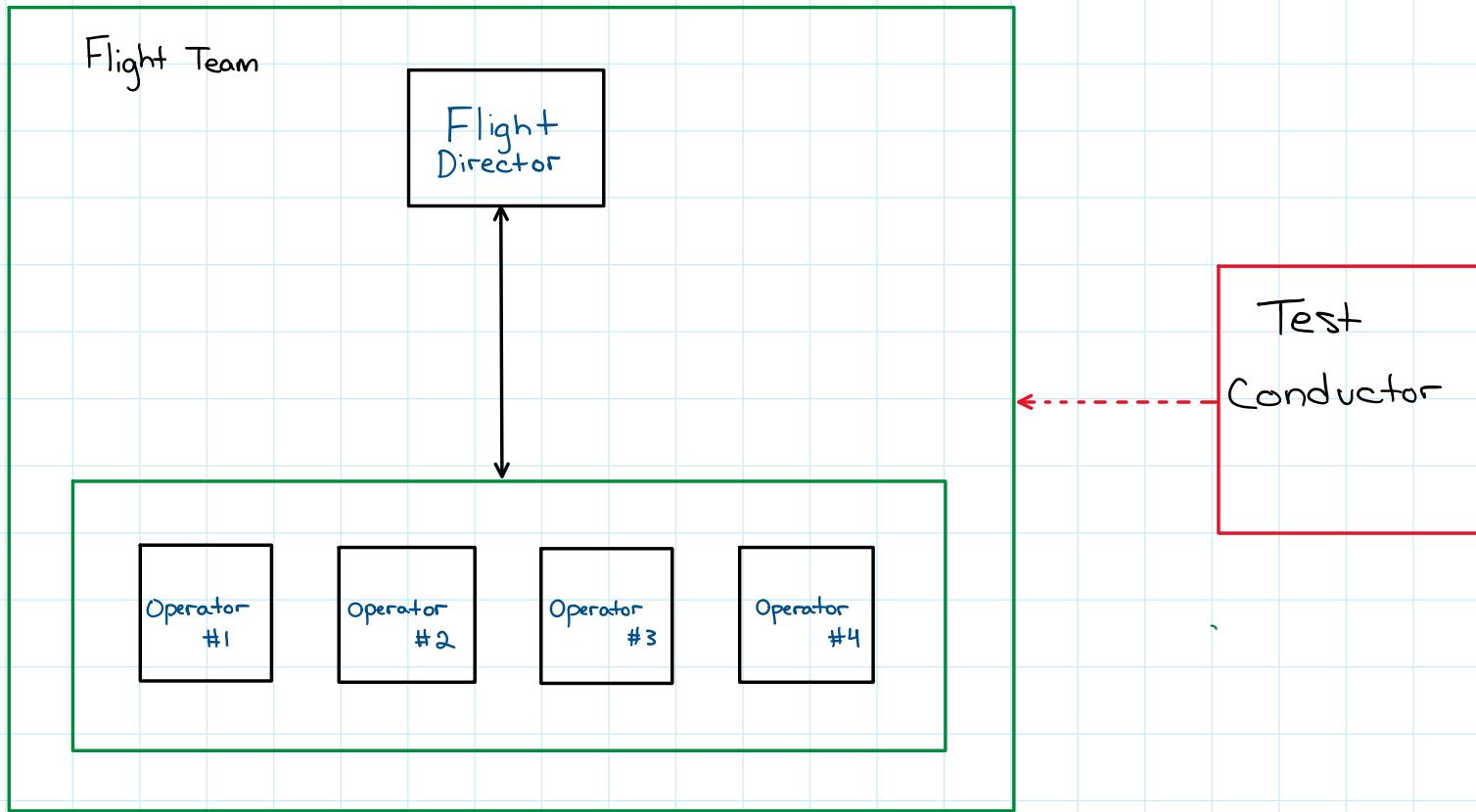
- Researched App Development
- Voted on survey created by Kyle
- Reviewed zenhub

## **Details:**

- Voted for .Net Maui because C# does not look hard to learn and its cross-platform ability paired with extensive libraries seemed like a good fit for the scope of this project
- Did not choose Flutter because it seemed to be too new and less adaptable libraries
- Did not choose React Native because I have experience with it, and JavaScript is not the smoothest language for app development

## 9/13 - Initial Diagrams

Tuesday, September 13, 2022 4:08 PM



### Assumptions:

- Flight Conductor and Operators have  
Open channel

# 9/13 - Meeting Notes

Tuesday, September 13, 2022 4:06 PM

## Project: Spacecraft Control Center Simulation

### Topic: First Meeting with product owner and customer

#### Summary of Work:

- First team meeting with product owner and customer
- Discussed product vision, expectations and use
- Set up Zenhub

#### Details:

- **Product Owner: Professor Garfield**
- **Customer: Professor Laskey**

#### Customer Final Product Overview:

- o Ideally an application that can be downloaded on a mobile device, that a flight director and mission operators could have unique roles in
- o Mobile device would need to be accessible via multi-platform (IOS & Android) for mass availability
- o Someone in charge of electric power?
- o Test conductor(Professor) could push out anomalies at any time
- o Need to engage with students in and out of classroom
- o Option: Web based touch point from anywhere and perform actions to link to all other operators and flight director

#### Bigger (not top priority):

- Logging events for after-hours review
- Bugs
- Professor access of learning

#### Sprint 1 Goals:

- o Something to show the customer and determine if we're on the right track (3 weeks)
- o Create single bogus function to begin spacecraft simulation
- o Put on mobile device to show proof of concept
- o Perhaps do on computer first if simpler proof
- o End: Simulated spacecraft with single function, console (computer, mobile) with single function

#### Semester 1 Goals:

- o Will grow as fully defined requirements from customer grow
- o Robust pretend model: for us, for review
- o First: Within lab have 4 computers running program simultaneously and communicating - minimum viable product
- o Middle: Web based for remote connection
- o End: Mobile 24/7 connection

#### Hardware:

- o Software only, no true devices: all simulated
- o Closest hardware is headsets for communication but due to mobile phones no necessary

#### How many should system support?

- o 16 people
  - Groups of 4 separate missions (completely separate)
  - Or
  - 16 on one (less viable option)

#### Start:

- o **5 people total team**
- o 4: operators
- o 1: flight director
- o 1: test conductor

**Project Roles:**

- **Test Conductor:**
  - Adds bad stuff/bad events
  - Professor - only one who gets training reports
- **Flight Director:**
  - In charge of team
  - Starts as professor role, ends as students
- **Console Operators:**
  - Operating spacecraft
  - Varied specific roles?
- **AI Coach:**
  - Maybe????

# 9/8 - Meeting Notes

Thursday, September 8, 2022      3:30 PM

**Project: Spacecraft Control Center Simulation**

**Topic: First Team Meeting**

**Summary of Work:**

- Initial Team Assignment & Introduction
- Initial Team Discussion

**Details:**

- Team members get together and begin discussing project goal point of views
- Choose **Scrum Master: Jeff Cevallos**
- Professor Akbas advised we develop our project scope and project timeline via a meeting
- Determine ideas of project goal & scope are varied and decide to plan "vision" meeting with product owner and customer
- Vision Meeting time and date is set for Tues, Sep 13 at 3:00pm
- Establish Github and Discord for team communication

# 9/20 - No Meeting: ERAU Awards & Fellowship Presentation

Tuesday, September 20, 2022 2:31 PM

# 9/22 - Sick Group Meeting Cancelled. Summer & Carly Meet with Professor

Tuesday, November 1, 2022 4:18 PM

**Project: Spacecraft Control Center Simulation**

**Topic: No word from Garfield**

## Prior to Meeting:

- Some group members are sick
- Jeff decides to cancel meeting due to sickness and lack of Garfield communication
- Jeff emails Garfield again to find new meeting time and convince him to meet with Laskey
- Kyle and Carly hash out plan to get some work done

Carly/Kyle:

- App concept art (all UI pages)
- App implementation research
- App project initialization on GitHub

Summer/Jeremy:

- Web app concept art (all UI pages)
- Web app implementation research
- Web app project initialization on GitHub

Jesse:

- Communications (two instances of the same web app (for now) communicating)

Jules:

- Power point incorporating ideas on shared google doc + concept art produced by other sub teams

Jeff:

- Secure Garfield/Laskey meeting
- Initialize documentation
- Group is deciding on web app not mobile app

**Summary of Work:** Summer and Carly meet with Akbas to figure out Garfield radio silence

## Details:

- TA instructed us to speak to Akbas during check in
- Get TA email to add TA to zenhub
- Akbas instructed us that he would try and have a discussion with Garfield and to send an email to remind him
- Akbas also instructed us to start making assumptions since the lack of communication

# 9/27 - Meeting

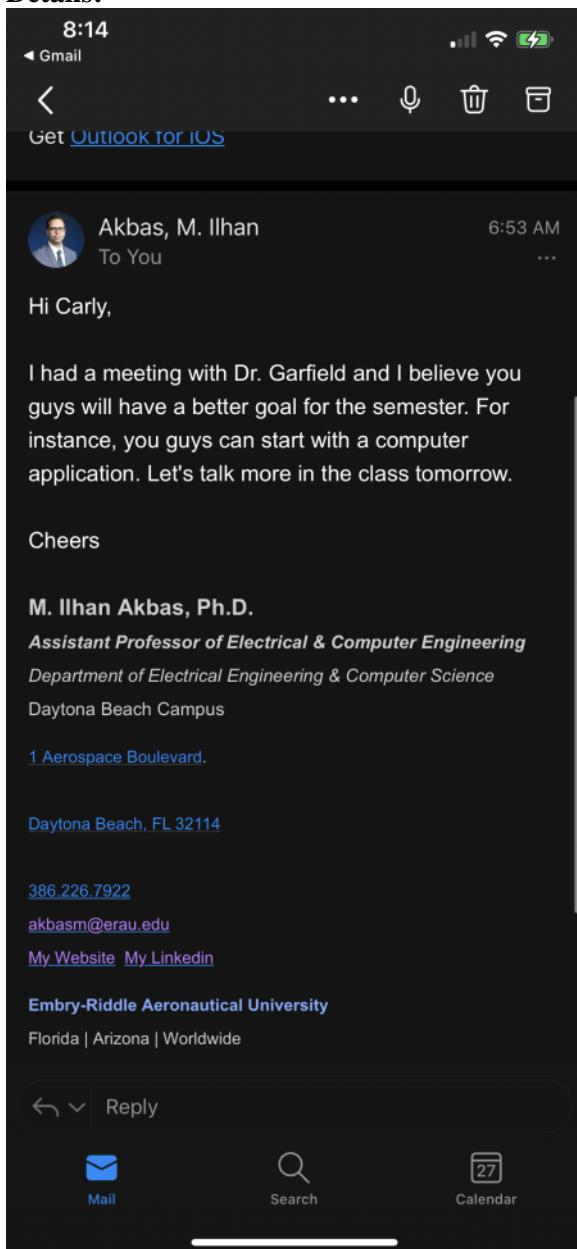
Tuesday, November 1, 2022 4:19 PM

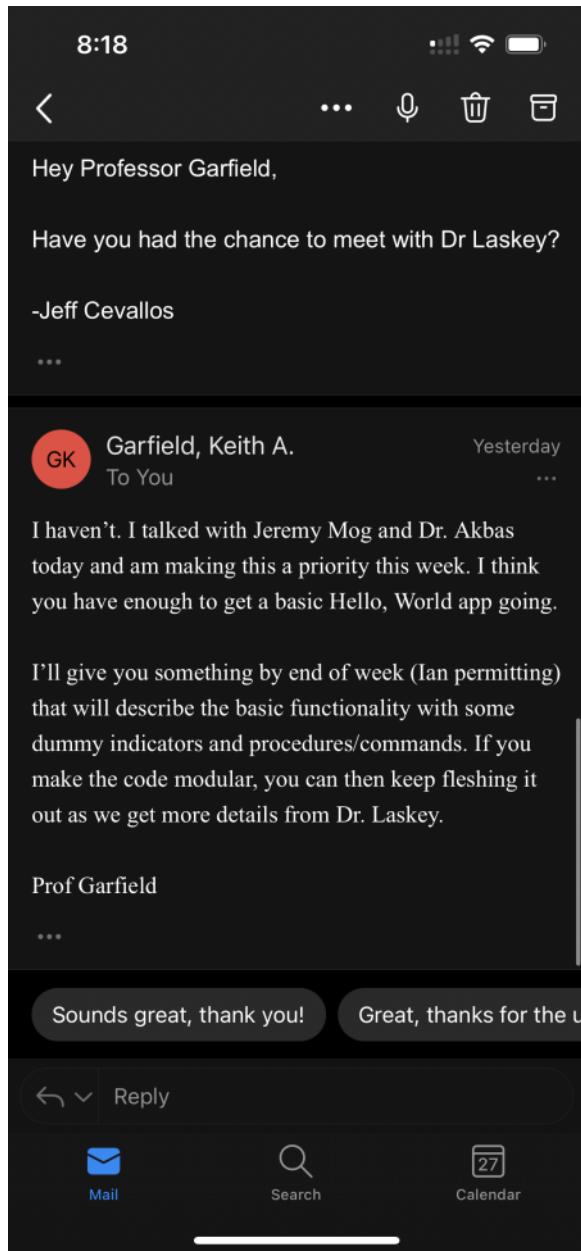
## Project: Spacecraft Control Center Simulation Topic: Begin development with assumptions

### Summary of Work:

- Decided to begin as web app
- Akbas instructed to begin assuming more
- Garfield instructed to begin hello world app as we await for more information
- Hard to determine framework/software without requirements
- Researched and began node.js, socket.io, and HTML5 using a multiplayer game
- Jesse helped us all to set up example code
  - <https://github.com/ruby0x1/realtime-multiplayer-in-html5>
  - <https://nodejs.org/en/>

### Details:





# 9/29 - Hurricane Cancelled

Tuesday, November 1, 2022      4:20 PM

# 10/4 - Absent from meeting due to hurricane damages

Tuesday, November 1, 2022 4:23 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Documentation Discussion**

## **Summary of Work:**

- I was absent due to hurricane damages but got some meeting notes via discord
- The purpose of this meeting was to begin splitting up tasks and planning a demo
- Also sprint 2 was discussed

## **Details:**

- The team planned out documentation work. Each member would work on the specific sections of documentation that related to their side of assigned operations. The unspecific sections were to be shared.
- The sub-teams were planned as webapp and simulation, as these would have different languages for their computational differences.
  - o Webapp: Kyle, Carly, Summer
  - o Simulation: Jesse and Jeremy
  - o Documentation lead and code help: Jules and Jeff
- Some team members also experimented further with web design templates and possible frameworks

# 10/6 - Meeting Notes

Tuesday, November 1, 2022 4:23 PM

## Project: Spacecraft Control Center Simulation

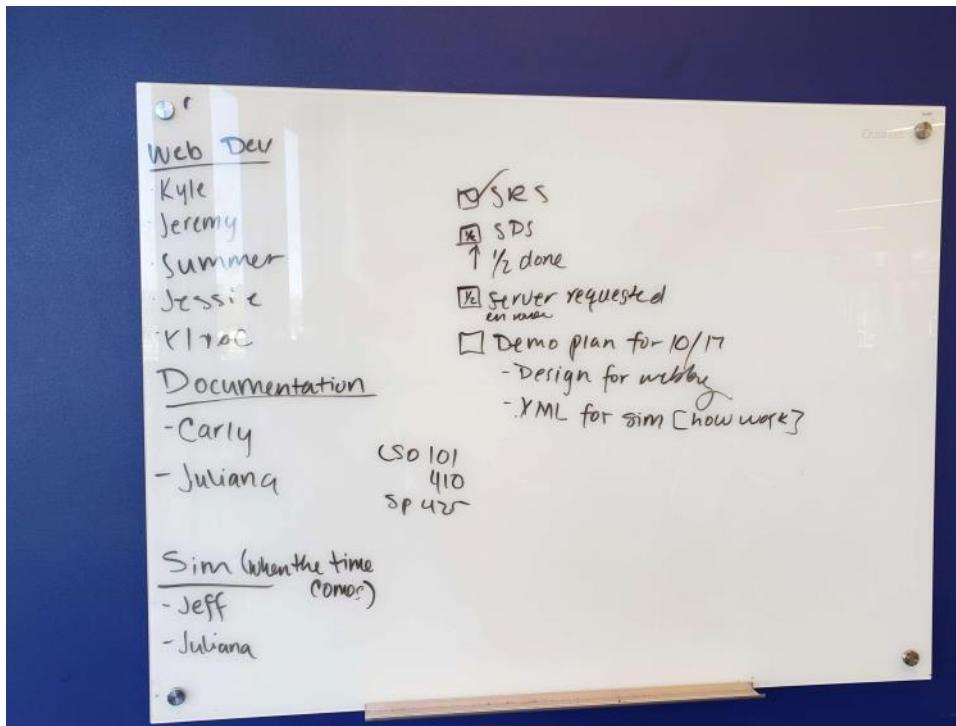
### Topic: User Interaction

#### Summary of Work:

- Before the meeting Kyle, Jesse and Jeff tried to meet with Dr.Garfield during his office hours but Dr.Garfield was not there.
- Started with standup meeting during our taco/quesadilla break that occurred on walk to union study room
- Split Group Into
  - o Web Development
  - o Simulation
  - o Documentation

#### Details:

- Found the space mission engineering textbook to help the group visualize simulation
- Have a simulation game in the website. Jesse lead this.
- Some tasks were planned out as can be seen in the diagram below. Originally here I was assigned to both documentation and web development.



\*\*Just to note these sub-group assignments are no longer accurate and were changed when the framework was changed.

10/11 - No meeting career fair

Tuesday, November 1, 2022 4:23 PM

Document from Garfield today

# 10/13 - meeting

Tuesday, November 1, 2022 4:23 PM

## Project: Spacecraft Control Center Simulation

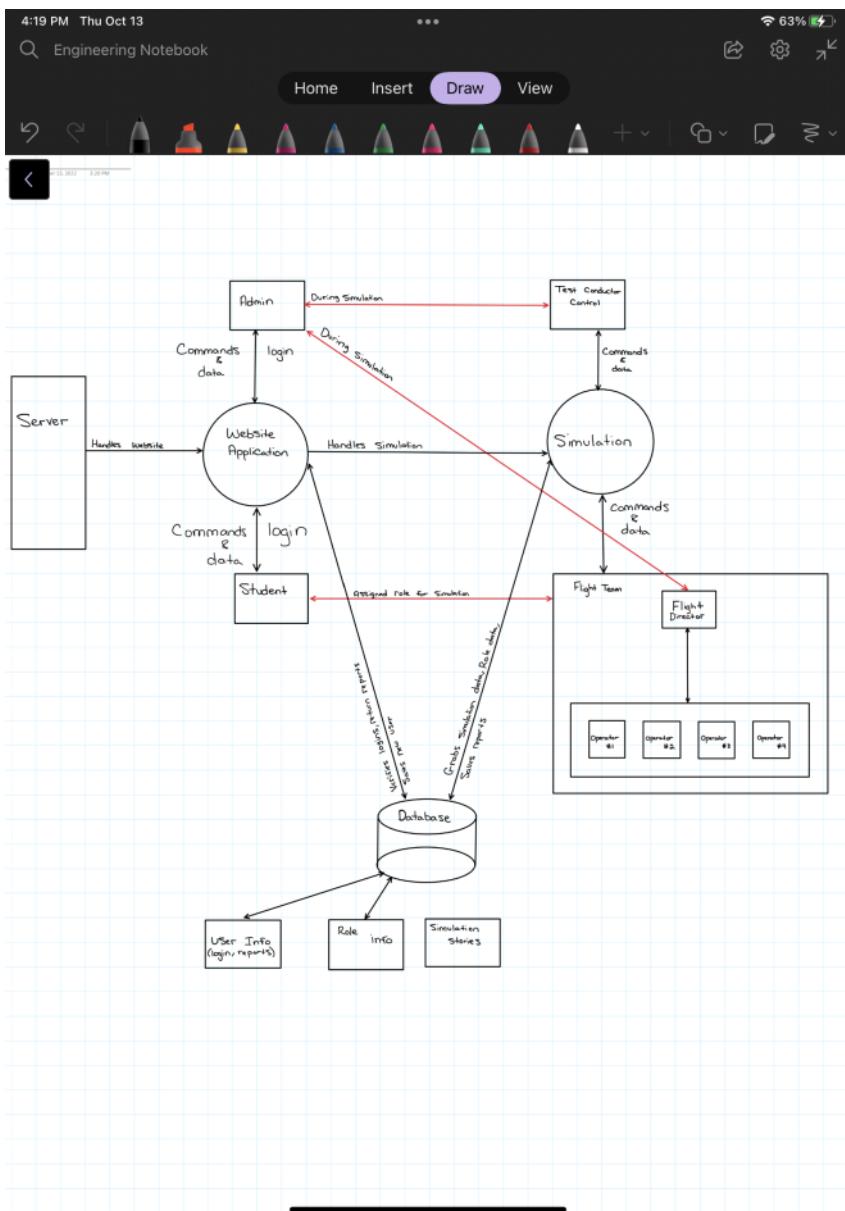
### Topic: Dr.Garfield response

#### Summary of Work:

- Entire group worked on presentation started by me on google slides
- Carly was to make the DFD
- NASA github found to help visualize control console
- Dr.Garfield finally gave us a product description so we spent time reading over and discussing that
- Kyle working on webapp login page and website routes
- Begun development of sprint one demo presentation

#### Details:

- The below diagram is the initial DFD diagram for the first website framework. This was sent to the group for discussion



# 9/26 - Dr. Garfield no answer

Tuesday, November 8, 2022 11:50 AM

**Project: Spacecraft Control Center Simulation**

**Topic: Waiting on Dr. Garfield**

## **Summary of Work:**

- Jeff tried to reach Dr.Garfield again via email
- Jeremy reached Dr.Garfield between classes and let us know that he has more requirements for us
- Discussed framework

## **Details:**

- Jesse found a framework that javascript program that creates an open web socket for 2 or more client instances for communication on website in real time
- Discussed the possibility of use of this framework at the school (IT concerns), possible use of VPN and costs associated.
- Garfield explained that the end of this sprint goal would to have either a website or app that doesn't do anything

# Meeting Template

Tuesday, November 8, 2022 12:21 PM

**Project:** Spacecraft Control Center Simulation

**Topic:**

**Summary of Work:**

**Details:**

# 10/14 - Effort

Friday, December 9, 2022 10:38 PM

- Kyle and Carly made a list of needed diagrams:
  - o Class Diagram
  - o Data Flow Diagram
  - o Software Structure
  - o Communication Diagram
  - o Hardware Interface Diagram
  - o Use Case
- At this point
  - o Kyle: Class and Use Case
  - o Carly: DFD
  - o Worked on this diagram

# 11/01 - Meeting Notes

Tuesday, November 1, 2022 4:06 PM

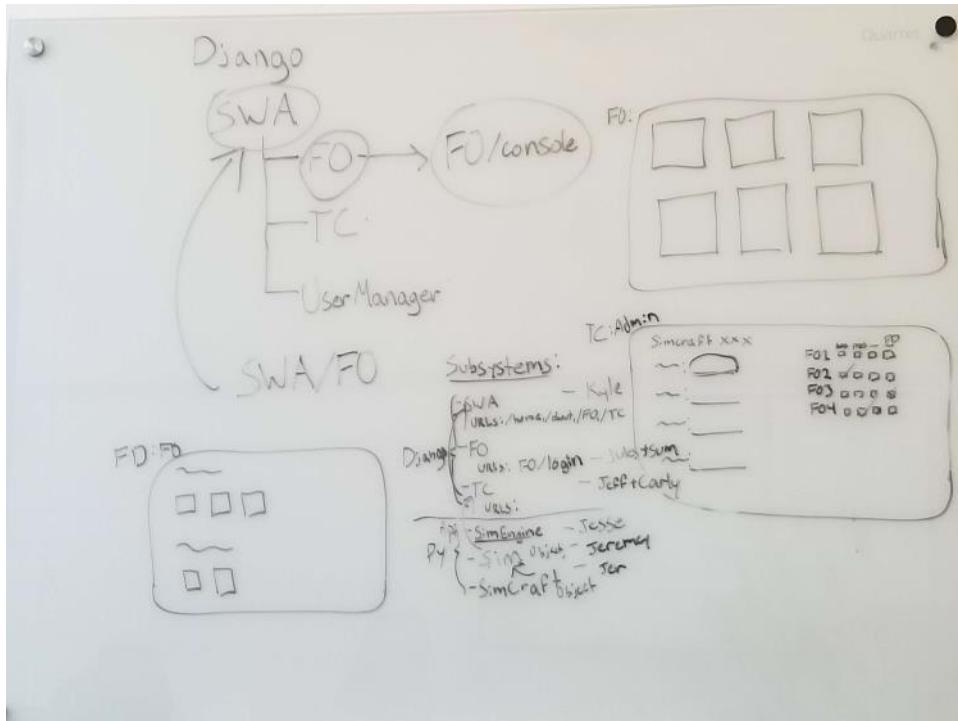
## Project: Spacecraft Control Center Simulation

### Topic: Plan to get Test Plan completed

#### Summary of Work:

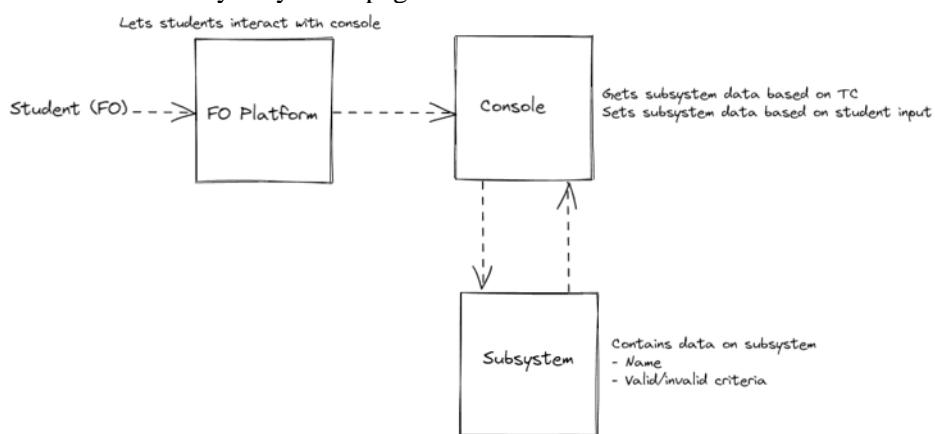
- Decided the best course of action was to update our SRS with the information we know now before attacking the test plan
- Decided who would define what subsystem in the SRS
  - o SWA: Kyle
  - o FO: Summer
  - o TC: Carly
- 
- o SimEngine: Jesse
- o Sim: Jeremy
- o SimCraft: Jeremy
- Jeff and Jules were not present for the meeting so we did not assign them section in SRS for tonight because we are not sure what they can get done given their situations
- Decided to ignore the FD and Communications for the present tasks
- Discussed setup of further project code
- Completed 4.6 TC requirements in SRS to get Test Plan ready

#### Details:

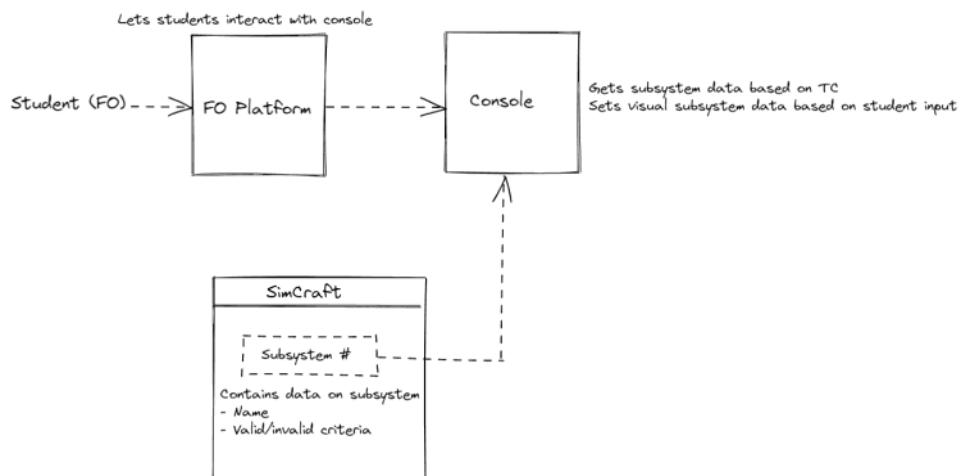


- For future coding the subsystems listed above will be handled as such
  - o SWA: Kyle
  - o FO: Summer is lead, awaiting communication with Jules for verification if she wants to do this or something else
  - o TC: Carly is lead, awaiting communication with Jeff for verification if he wants to do this or something else
- 
- o SimEngine: Jesse
- o Sim: Jeremy

- SimCraft: Jeremy
  - Decided if there is a FD they will get an overview dashboard of what every FO would see
  - Drew out very very basic pages for TC and FD



Summer made communication diagram for FO



# 10/27 - Meeting Notes

Thursday, October 27, 2022 4:16 PM

**Project: Spacecraft Control Center Simulation**  
**Topic: Changed Framework & Education**

## Summary of Work:

- Jesse lead the team discussion via his research that we should be using Django with separate Apps/URLs for pages
- Some of us downloaded and began setting up our first Django app (to learn and practice)
- Kyle setup and pushed real Django project for team use
- Discussed Microsoft Azure

## Details:

- Some members had issues given the Django requires python downloaded
- I was able to get and run a new Django project on the internet and see how "/admin" worked
  - o "/admin" is given by Django and requires further research as we could see adaptation for our TC
- Had trouble getting multiple "Views" to sync together, requires further effort  
<https://azure.microsoft.com/en-us/free/students/>

<https://docs.djangoproject.com/en/4.1/intro/tutorial01/>

<https://www.djangoproject.com/start/>

# 10/25 - Meeting Notes

Tuesday, October 25, 2022 4:16 PM

## Project: Spacecraft Control Center Simulation

### Topic: Must Finalize Framework

#### Summary of Work:

- The team split into discussion groups
- Discussed switching frameworks
- Discussed project structure and potential sub-groups for working with any new framework in mind
- Submitted the demo 1 presentation slides

#### Details:

- I split into the discussion group with Kyle and Jesse
- Read many links:

1. <https://realpython.com/prevent-python-sql-injection/>  
<https://www.bleepingcomputer.com/news/technology/embed-python-scripts-in-html-with-pyscript/>  
1. <https://pyscript.net/examples/>  
<https://jeff.glass/post/7-guis-pyscript/>  
<https://blog.logrocket.com/pyscript-run-python-browser/#:~:text=PyScript%20is%20an%20open%20source,running%20Python%20in%20the%20backend.>  
<https://www.hashbangcode.com/article/look-running-python-web-browser-pyscript>

# Say Hello to PyScript

PyScript is a framework that allows users to create rich Python applications in the browser using HTML's interface and the power of [Pyodide](#), [WASM](#), and modern web technologies. The PyScript framework provides users at every experience level with access to an expressive, easy-to-learn programming language with countless applications.

What is PyScript? Well, here are some of the core components:

- **Python in the browser:** Enable drop-in content, external file hosting, and application hosting without the reliance on server-side configuration
- **Python ecosystem:** Run many popular packages of Python and the scientific stack (such as numpy, pandas, scikit-learn, and more)
- **Python with JavaScript:** Bi-directional communication between Python and Javascript objects and namespaces
- **Environment management:** Allow users to define what packages and files to include for the page code to run
- **Visual application development:** Use readily available curated UI components, such as buttons, containers, text boxes, and more
- **Flexible framework:** A flexible framework that can be leveraged to create and share new pluggable and extensible components directly in Python

All that to say... PyScript is just HTML, only a bit (okay, maybe a lot) more powerful, thanks to the rich and accessible ecosystem of Python libraries.

In short, our mission is to bring programming for the 99%.

**10/20 - FALL BREAK**

Tuesday, November 1, 2022      4:24 PM

# 11/3 - meeting notes

Thursday, November 3, 2022 11:18 AM

## Project: Spacecraft Control Center Simulation

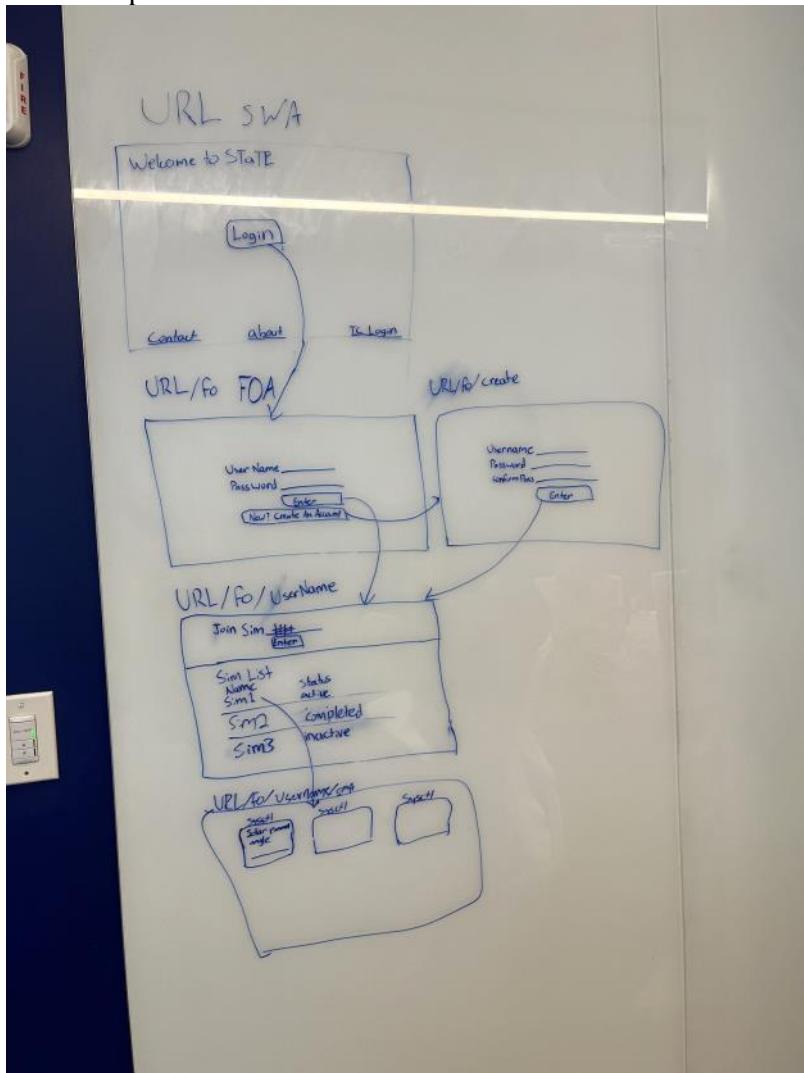
### Topic: Get on the same page

#### Summary of Work:

- Drew out pages for SWA, FO and started TC
- Decided process for TC having class/ability to share class
- Jules still sick
- Discussed Kyle's Use Case

#### Details:

- TC generates a class code and students have a place to enter class code to join the class
- Once joined class, the teacher has a list of students that will allow them to set up simulations prior to class
- If a student does not participate in active simulation all other FO's in team can participate = FO's are independent of team



FO

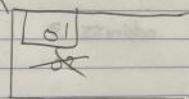
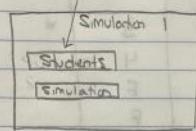
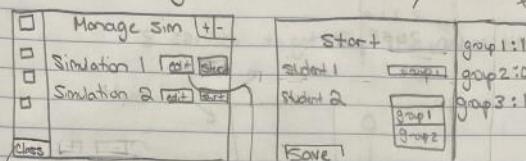
Jon Zybooks

01

Submit

URL /TC/ManageSim

\* When added  
to group  
sim appears  
for FO



# 11/07 - Self Work

Monday, November 7, 2022 11:26 AM

- Created SDS document and made 1 note
- Tried to fill in sections of SDS that I could
- Kyle made use case for the documentation

# 11/2 - Virtual Test Plan Meeting

Wednesday, November 2, 2022 11:26 AM

## Project: Spacecraft Control Center Simulation

### Topic: Test Plan Completion

#### Summary of Work:

- After updating SRS yesterday, the test plan could now be worked on
- Decided the person who completed each section of functional requirements, are in charge of getting their section in the test plan completed.
- In order to complete the test plan, some sections of SRS had to be updated.
- Discussion included asking about our expectations of the code as well as specifying many of the moving parts.
- I would say I took the lead on updating both the SRS and Test Plan and making sure that the two were consistent with new changes. I also kept the team updated in this discord to sections that I felt needed help, and then a team members would pick it up.

#### Details:

- I focused on section 3.1, 3.2, and 3.3 & fixed the SRS usability requirements due to that, Table of contents, section 2 and added to 4.1.
- Made test strategies for functional testing, usability testing, database testing, performance testing and documentation testing.

### 3.1.2 Functional Testing

**Test Objective:** The STaTE's navigation, data entry, data output, and processing according to the specific requirements in the SRS. Provides verification that the software is accurate according to definite inputs and expected outputs.

**Technique:** Execute use cases as described from the use case diagram. When valid data is entered, the corresponding success result shall yield. When invalid data is entered, the corresponding error result shall yield.

**Completion Criteria:** When all use cases from the use case diagram have been tested and expected results are returned.

**Testing Assumption Consideration:** Access to the STaTe system and the corresponding SRS document.

- Also brought over the functional requirements from the SRS and defined many other requirements for the various testing sections.

# 10/18 - Project Presentation

Tuesday, November 1, 2022 4:17 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Presentation**

**Summary of Work:**

- Met before class to make plan for in class presentation

**Details:**

- Carly created the presentation 10/13
- Updated presentation before class that day
- Added sections to presentation
- Prepared my assigned slides

**Presentation:**

All team members presented. Slide distribution as follows

1-3: Jeff  
4-7: Jules  
8-10: Carly  
11-14: Kyle  
15-16: Jerm  
17-18: Summer  
19-20: Jessie

# 10/31 - Effort

Friday, December 9, 2022 10:57 PM

## Project: Spacecraft Control Center Simulation

### Topic: Self Work

#### Summary of Work:

- Saw that Jesse mentioned Dr.Garfield's document about project description where he explains some sub systems in control center terminology that we have to simulate
- Read through Jesse's summary of such and tried to understand it all for tomorrow's meeting

**Table 1: ACS Sensors and Values**

Item	Nominal Indicator (green)	Off Nominal Warning (yellow)	Off-Nominal Error (red)
Angle of Incidence (absolute values)	0 – 5 deg	5 – 30 deg	30 – 90 deg
Rotational Drift	0.0 – 0.1 deg/hr	0.1 – 2 deg / hr	Greater than 2 deg/hr
Fuel Level Sensor #1	30% - 100%	10% - 30%	0% - 10%
Fuel Level Sensor #2	30% - 100%	10% - 30%	0% - 10%
Fuel Pressure Sensor #1	10 – 30 psi	5 – 10 psi	0 – 5 psi
Fuel Pressure Sensor #2	10 – 30 psi	5 – 10 psi	0 – 5 psi

#### 3.2 Power Distribution Subsystem (PDS)

The power distribution system provides power to the SimCraft via solar panel, stores power in batteries, and distributes power as needed to the payload. While in sunlight, the SimCraft produces power via the

# 11/08 -Meeting notes

Tuesday, November 8, 2022 11:31 AM

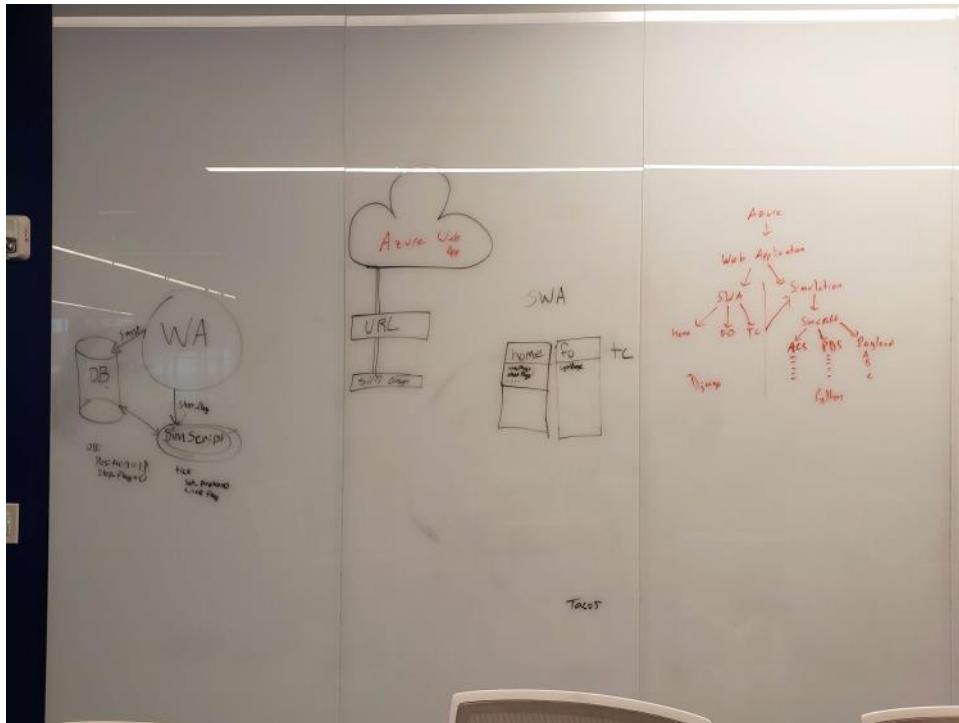
## Project: Spacecraft Control Center Simulation

### Topic: SDS and SRS Version 2 Team Work

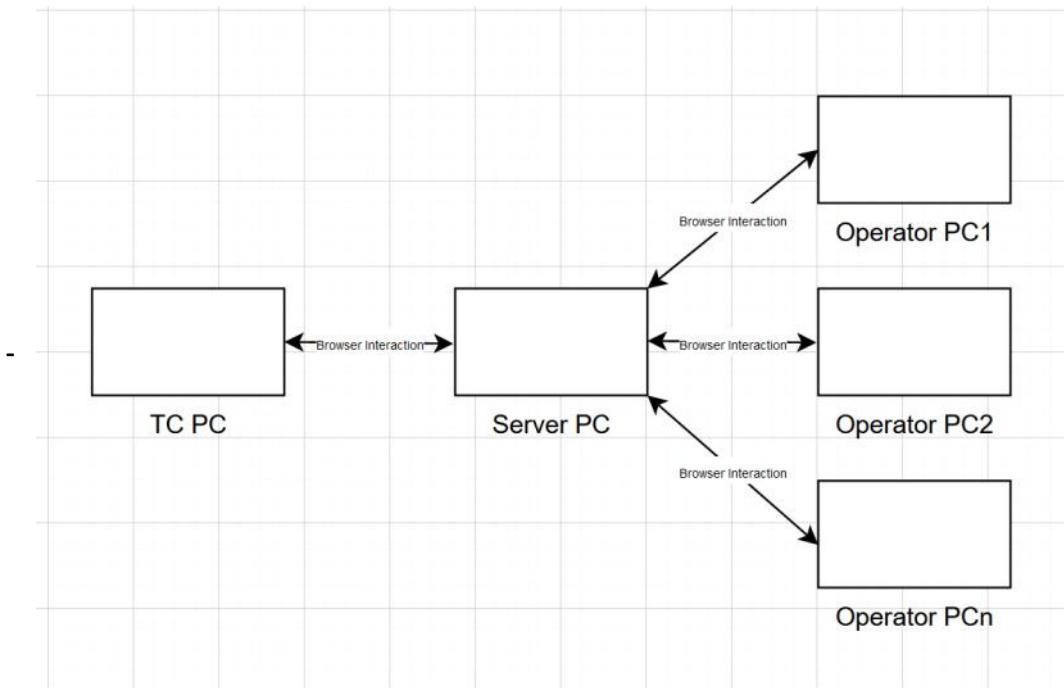
#### Summary of Work:

- Meet with Akbas
- Carly updated data flow diagram needed for the SDS
- Discussed aspects of SDS not sure about
- Other unshown diagram were updated/created
- Found that many things in SRS needed updating to flow with SDS

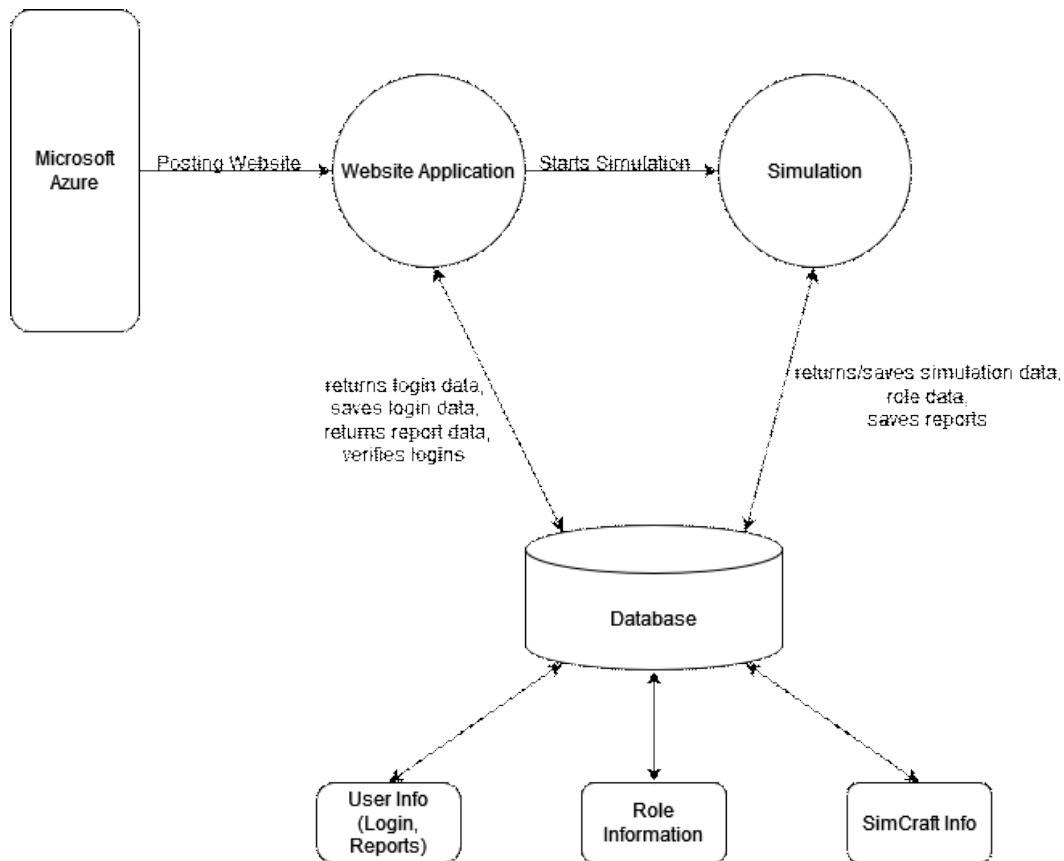
#### Details:



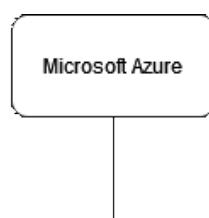
- The group also spent some time discussing module relationships that were important to language used in SDS
- Kyle updated Hardware:

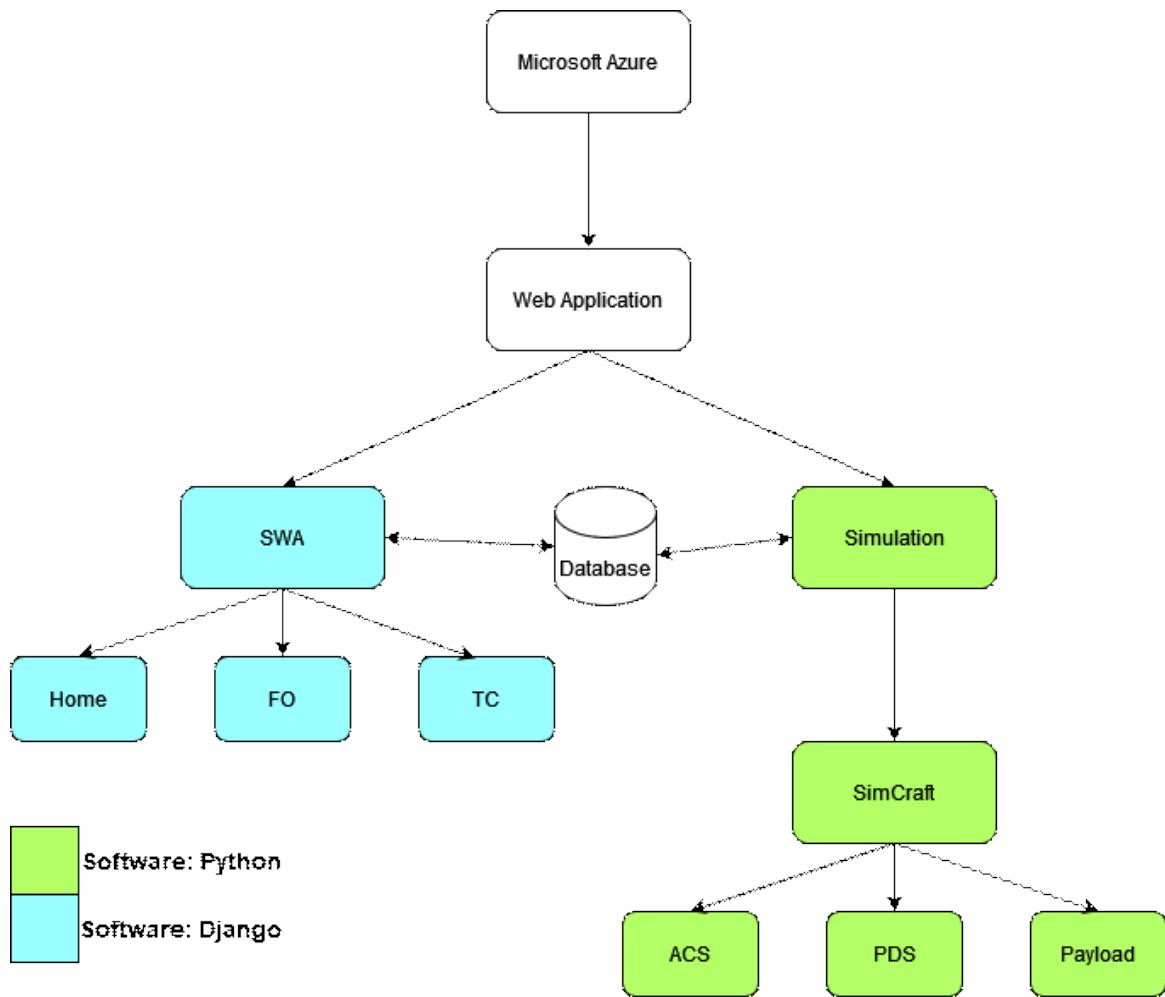


- Carly updated DFD



- Carly updated and color coded Structure Diagram





# 11/08 - VIRTUAL SDD Work

Wednesday, November 16, 2022 11:35 AM

## Project: Spacecraft Control Center Simulation

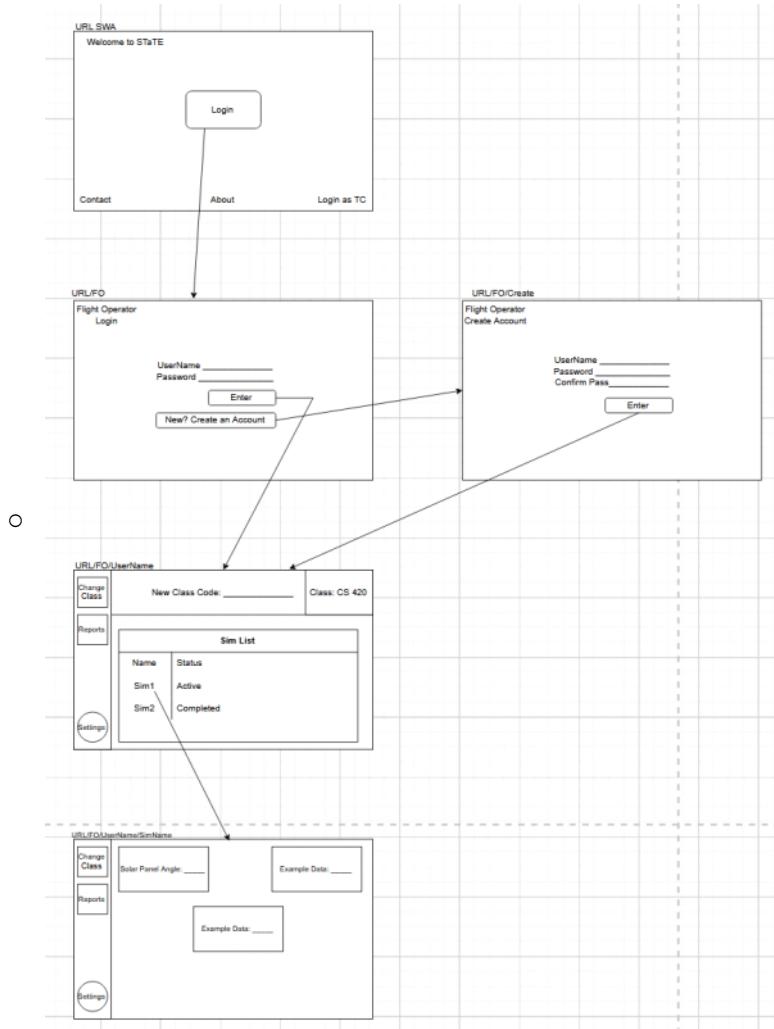
### Topic: SDS and SRS Version 2 Discord Discussion and Individual Work

#### Summary of Work:

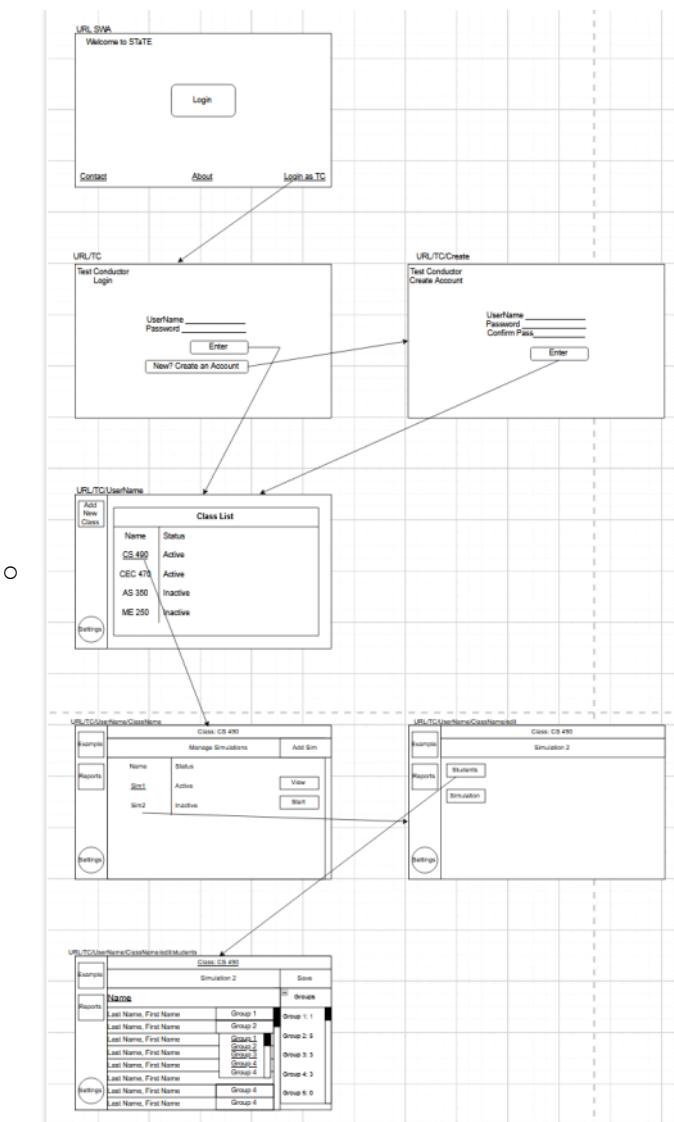
- After the in class meeting there was still substantial work to be done on SDD
- Kyle and Carly had time early in day
- Kyle focused on UML and 4.2 until having to clock off for hurricane prep and possible mandatory evacuation at about 8pm
- Jesse, Jules and Jeff got on at 8pm
- Jeremy got on at about 9 pm
- Summer was unable to work virtually because of having the broken laptop
- After getting to an almost finishing point I had to get off at about 10:15 due to early hurricane power surges

#### Details:

- I worked on 2.2, 2.3, 3.1, added to 3.1, added to 4.2: High Level System Overview.
- The SRS has version control for more detail, but sections that were affected by the SDS as well as just needed fixing were focused on. Juliana and I made these changes.
- A good chunk of time was spent on the User Interface creation and explanation in 3.1:
- FO:



- TC:



# 11/10 - Hurricane Cancellation

Tuesday, November 15, 2022      11:31 AM

No meeting: Hurricane

# 11/15 - Meeting Notes

Tuesday, November 15, 2022 10:43 AM

**Project: Spacecraft Control Center Simulation**

**Topic: Presentation Meeting Plan**

## **Summary of Work:**

- Entire team got together to work on the presentation slides
- Determined what milestones the team has made in the last sprint

## **Details:**

- Milestone:
  - o Picking and Staying with Django framework
  - o Kyle made basic /home screens
  - o Teams made
  - o Diagrams updated
  - o Kyle created Use Case
  - o Carly made User Interface plans created

## **During Class: The Presentation**

# 11/17 - Meeting Notes

Thursday, November 17, 2022 10:43 AM

**Project: Spacecraft Control Center Simulation**

**Topic: Code**

## **Summary of Work:**

- The purpose of this meeting was to set up all necessary to allow for coding
- 6/7 members were present (Kyle had a prior obligation)
- Found a major issue in downloading and running the pushed Github code, all 6 members had the exact same issue

## **Details:**

- Discussed how to not push bad code
- Decided who codes and plans out each section (same as roles prior just now adopted to code)
- Decided a winter break plan as every members will have a lot of extra time between semesters

# 11/22 - Meeting Notes

Tuesday, November 22, 2022 10:43 AM

**Project: Spacecraft Control Center Simulation**

**Topic: Meeting before Thanksgiving break**

## **Summary of Work:**

- The purpose of this meeting was to see what could get done and who had time to work during Thanksgiving break
- Due to last meeting before break many of our members had flights, the lack of team meant it was not the most productive meeting (3/7 members were present: Kyle, Carly and Jeff).
- Fixed the code issue, so now the team can work together on the project

## **Details:**

- Kyle ended up pushing to the Github and then to download and run the code all that needed to be done was a single install. This install did not work in the last error.
- Began to work on TC screens and spent the meeting trying to fix errors

# 11/24 - Thanksgiving

Thursday, November 24, 2022 10:43 AM

No meeting == Turkey

# 11/28 - Self Work

Monday, November 28, 2022 10:43 AM

## Project: Spacecraft Control Center Simulation

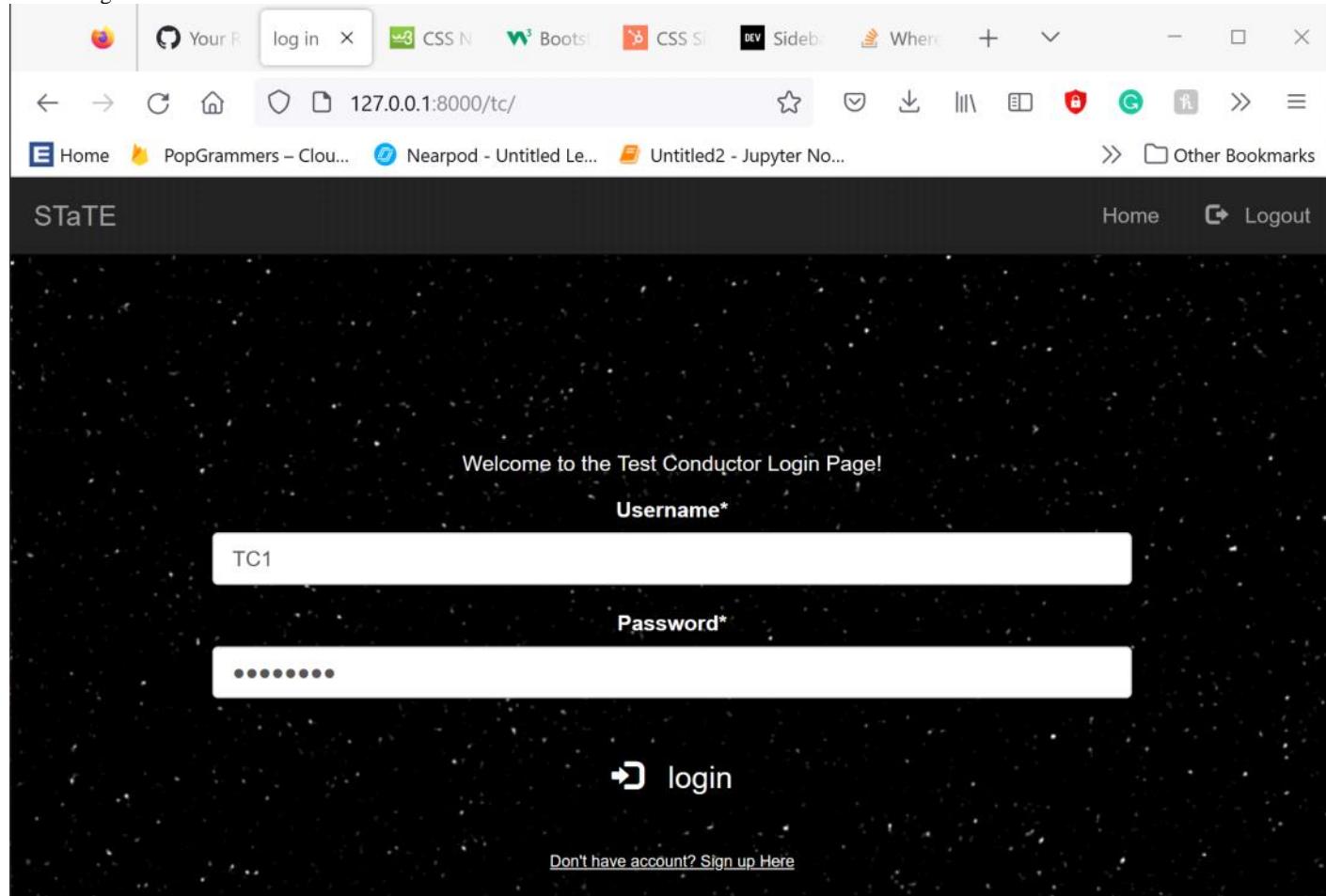
### Topic: Try to get into TC screens and add Sidebar

#### Summary of Work:

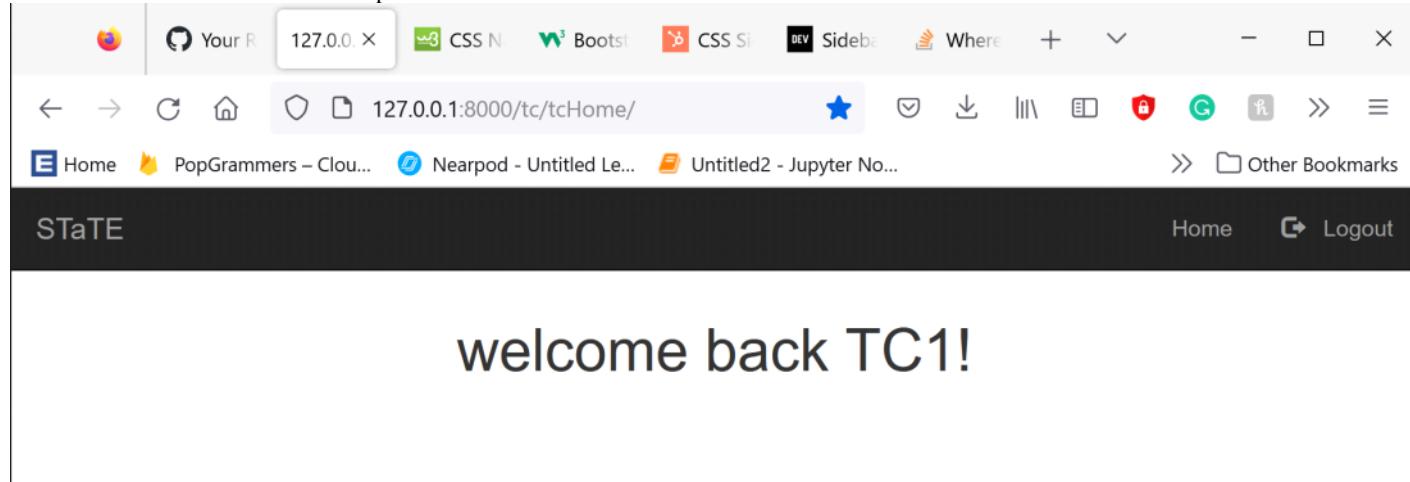
- Get rid of error that has very little online documentation
- Copy and edit Kyle's login code so that TC screens can be accessed
- Attempt to figure out how to make sidebar
- Realized TC login isn't admin

#### Details:

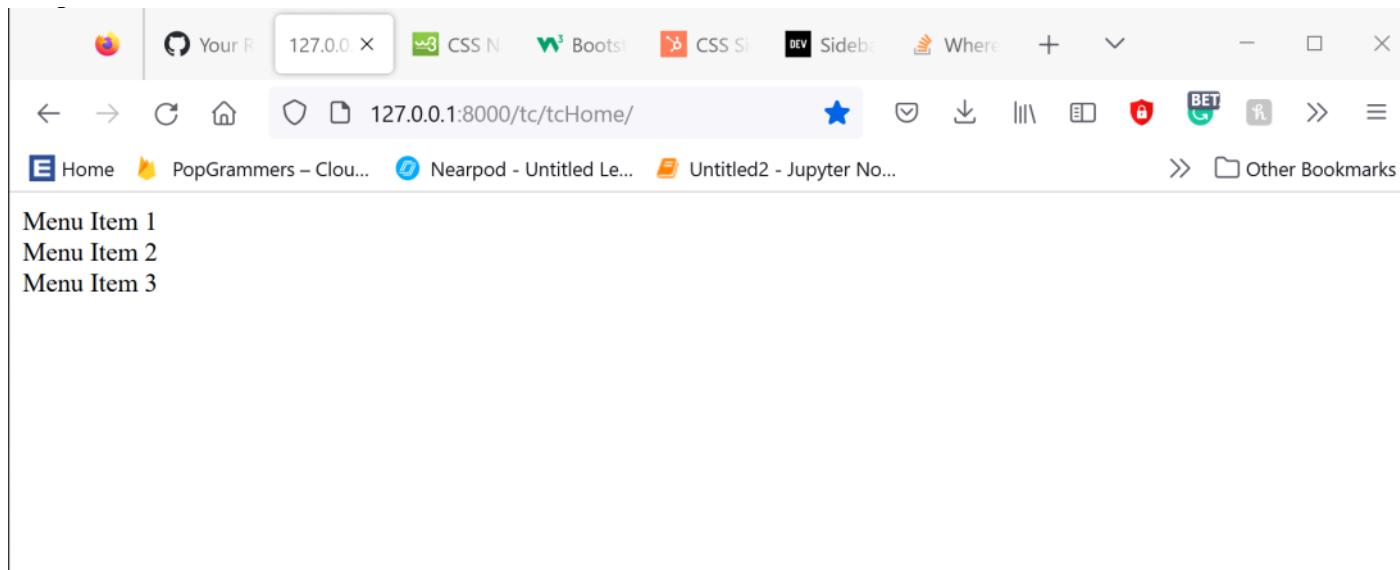
- Did get the login screens figured out
- Made a login



- Accessed TC Home Screen and attempted to make a sidebar



- Going to need more time and research to make navbar



(Technically a sidebar but gets rid of everything on screen)

# 11/29 - Meeting Notes

Tuesday, November 29, 2022 10:43 AM

## Project: Spacecraft Control Center Simulation

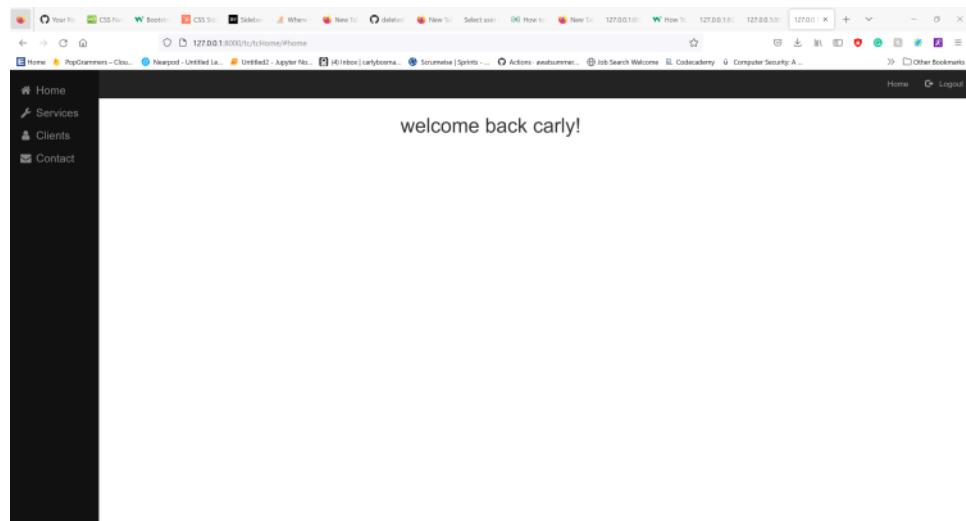
### Topic: Code Issues

#### Summary of Work:

- The purpose of this meeting was some code layout discussion but mostly fixing errors
- Summer got caught up with code

#### Details:

- In the meeting and throughout the day I completed the following:
  - Redirecting a FO attempting to login to TC to their FO login page
  - Basic authentication for TC to get into TC side
    - Still must get creating a verified TC
  - Fixed TC logout button
  - Made classes table
  - Made sidebar for a TC in a class
  - Made sidebar for TC not in a class (TC class picking)
  - Ability to choose a class and go nowhere, clickable though



# 12/1 - Meeting Notes Before Class

Tuesday, December 6, 2022 10:38 AM

## Project: Spacecraft Control Center Simulation

Topic: Discussed code progress

### Summary of Work:

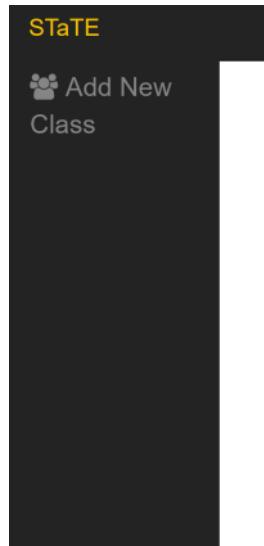
- Jesse, Kyle, Carly and Summer showed up early to fix errors and discuss code

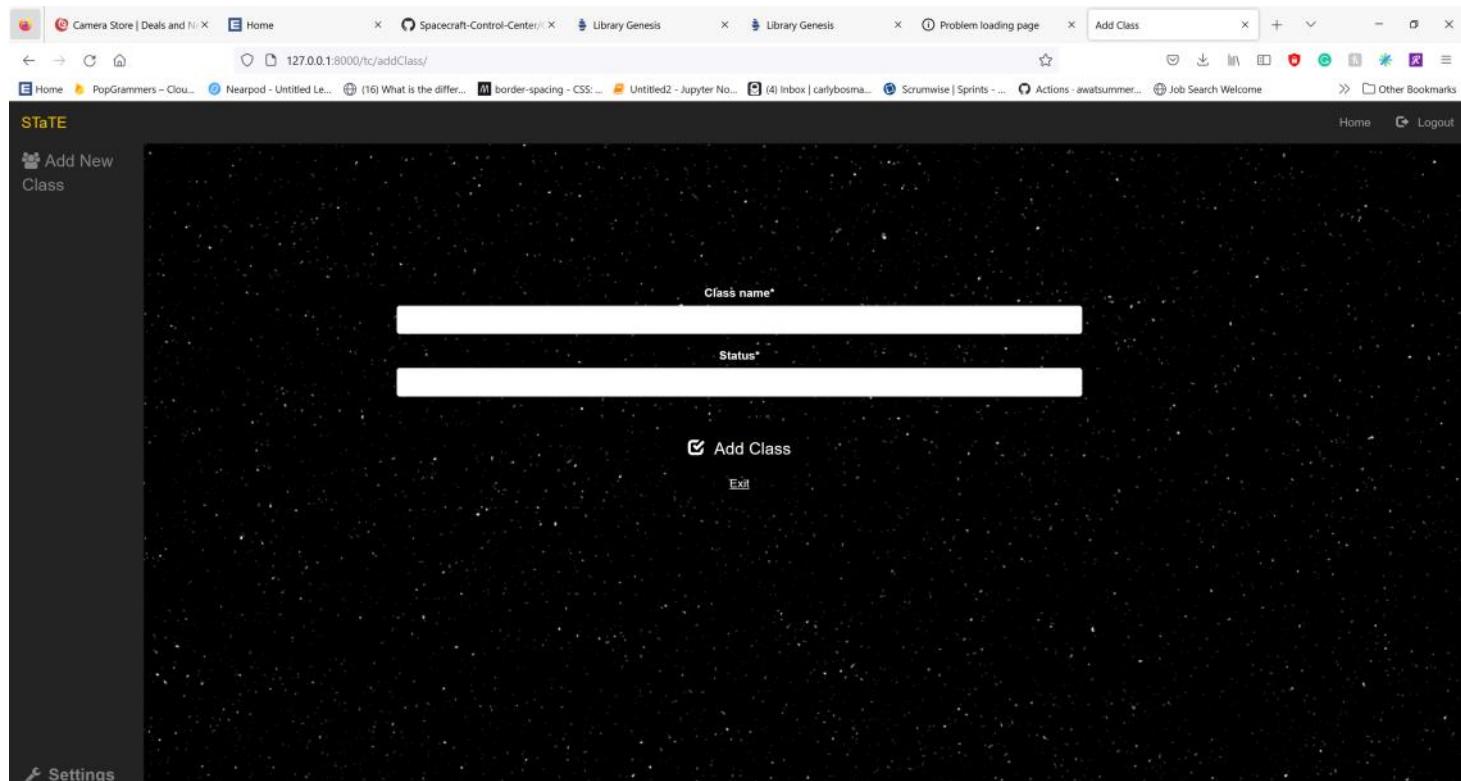
### Details:

- Carly and Summer fixed her sidebar issue (getting basic welcome message figured out with sidebar overlap)
- Figured out how to make the dynamic table communicating between the database and webpage for classes the TC is in
- TC can add a class and they will be a part of it
- Classes in tables now link to a general class page (not sure exactly how each class will have a general page)

## Class List

Name	Status
test1	test





# 12/03 - Virtual Meeting Notes

Tuesday, December 6, 2022 10:41 AM

**Project: Spacecraft Control Center Simulation**

**Topic: Virtual SRS and SDD work**

## **Summary of Work:**

- Goal of meeting was to get the SRS and SDD updated for the version 3 update.
- Also worked on fixing previously working code that had been messed up by Github.

## **Details:**

- Individual SDS and SRS work:
  - o The SDS and SRS did not require a lot of changes, just ensuring that grader comments were fixed and that the information matched our code/current state of project.
  - o Spellcheck
  - o Removed Firefox as a supported browser as we learned it has unexpected results from running the code
  - o Checked for flow and consistency of terms

# 12/06 - Meeting Notes

Friday, December 9, 2022 6:23 PM

## **Project: Spacecraft Control Center Simulation**

### **Before Class 12:00/12:30-2:00pm**

#### **Topic: Code Meeting**

##### **Summary of Work:**

- The purpose of our now recurring before class meeting is to help collaboration and discussion.  
Many of us can work independently but we needed to discuss and work together more.

##### **Details:**

- Moved simulation page into class page so that TC enters class and sees class specific simulations.
- Got active simulation list present on class page
- Summer and I thought we figured out how to get the sidebar size fixed to all screens. Found out after that this is still not universal.

### **During Class**

#### **Topic: Team + Plan Meeting and Garfield Meeting (cont. Code)**

##### **Summary of Work:**

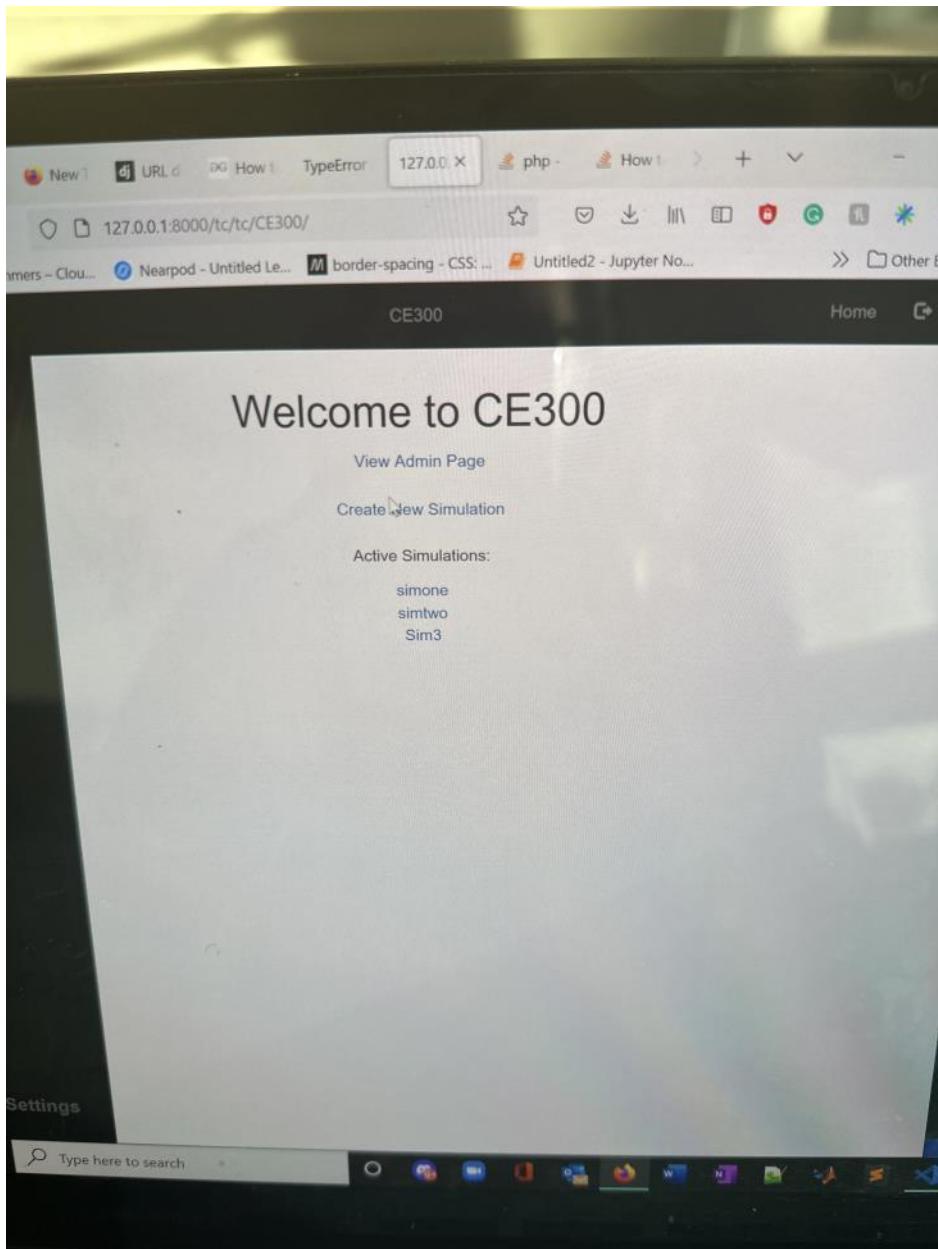
- Made a game plan for presentation, video and test plan.
- Jules: Presentation Lead
- Summer: Test Plan Lead
- Jeremy: Video Lead
- Garfield meeting

##### **Details:**

- Jules to give slides tomorrow so team could edit
- Garfield Meeting
  - o Good remarks over all
  - o Happy with system functionality
  - o Had questions
  - o Liked the modularity of project
  - o Gave website demonstration and is very happy with work this semester
  - o Commented on wanting consistency, better writing and better grammar in all documentation
- Summer and I tried to get the FO add class page started

### **After Class Individual**

- Finally got the class name to appear on welcome message and on top navbar.



# 12/08 - Meeting Notes & Presentation

Friday, December 9, 2022 6:41 PM

## **Project: Spacecraft Control Center Simulation**

### **Before Class 12:00/12:30-2:00**

#### **Topic: Presentation Plan**

##### **Summary of Work:**

- Carly, Summer, Jeremy, Kyle and Jesse were present to plan presentation. Jules has flu.
- Fix up the presentation
- Plan who presents what
- Run through presentation

##### **Details:**

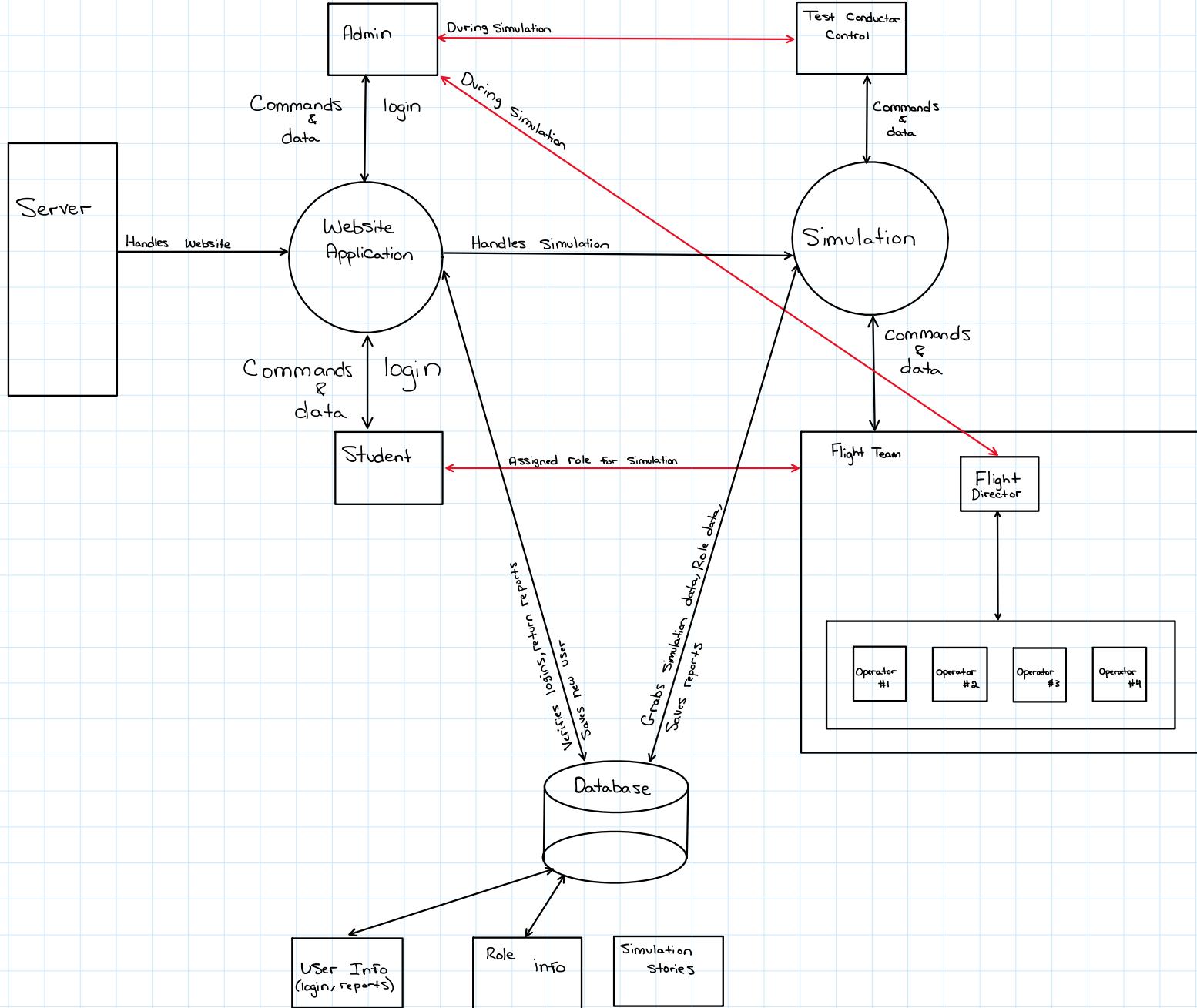
- Added technical content to slides
- Updated terminology
- Added diagrams
- Kyle ran through demonstration

##### **In class**

- Presentation

##### **Personal**

- Found way to filter sims assigned to class
- Kyle and I did the same work in parallel which we found out when pushing to Github, thus deciding we need to plan better for smaller coding functions.



- How do antenna
- Are Students going to be doing Sim in teams still? ☺
- How many students is this geared for?
- Multiple classes?
- Should we implement levels of complexity
- Should Settings be chosen before?
- How do?  
(Temperature supposed to be fixed now)
- How much information do Students get about satellite

FC

Login

STATE Login

Username:

Password:

TC

STATE

Welcome

STATE

STATE

STATE

STATE

Welcome

STATE

Name:  Drop down

User:  Score  45  55 State  OFF  ON

User 2

User 3

STATE

Name:   
email:

Karbot Waiting Room

STATE

Unique Name:  Flexbox

Mission:  dropdown

Discour:  dropdown

Teams ???

STATE

Code:  XXXXX Number:

User 1

User 2

User 3

...

i a b c d e f g

z i g a b c d e f

? f g a b c d e

z e f g a b c

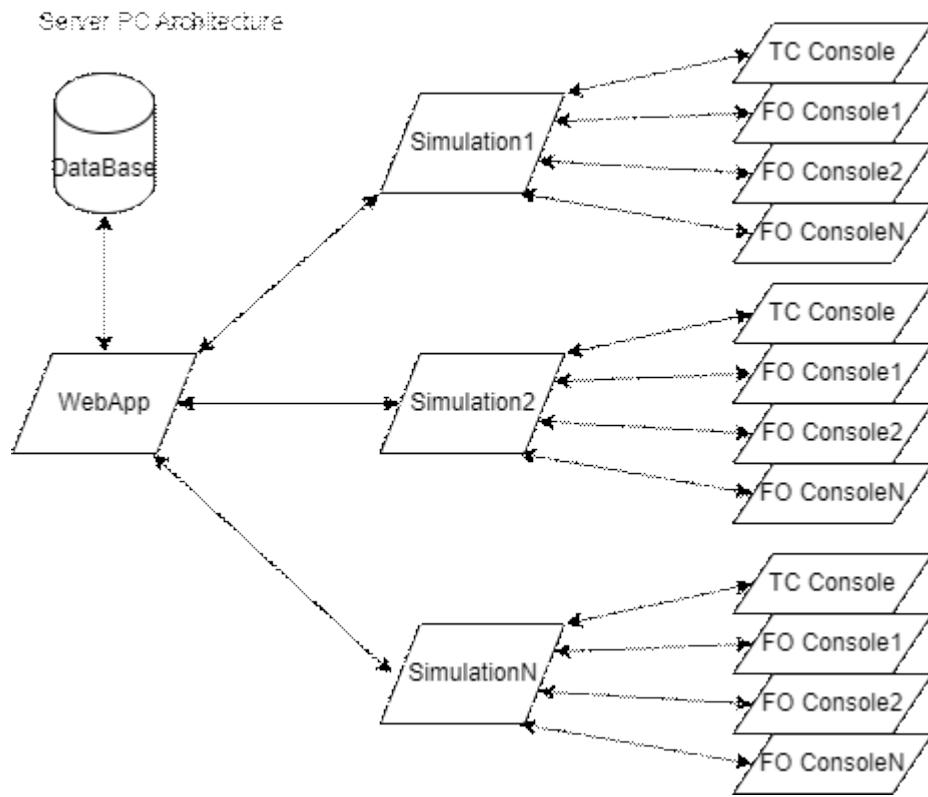
a b c d e f g

b c d e f g a

- How do antenna
- Are Students going to be doing Sim in teams still? ⑦
- How many students is this geared for? ①
- Multiple classes?
- Should we implement levels of complexity
- Should Settings be choose before?
- How do?  
(temperature supposed to be fixed how)
- How much information do Students get about satellite
- What are <sup>q/1</sup> the things that could go wrong

# Server PC

Friday, December 9, 2022 10:42 PM



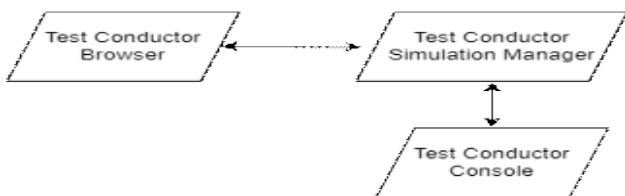
# Communication Architecture

Friday, December 9, 2022 10:43 PM

Flight Operator Architecture

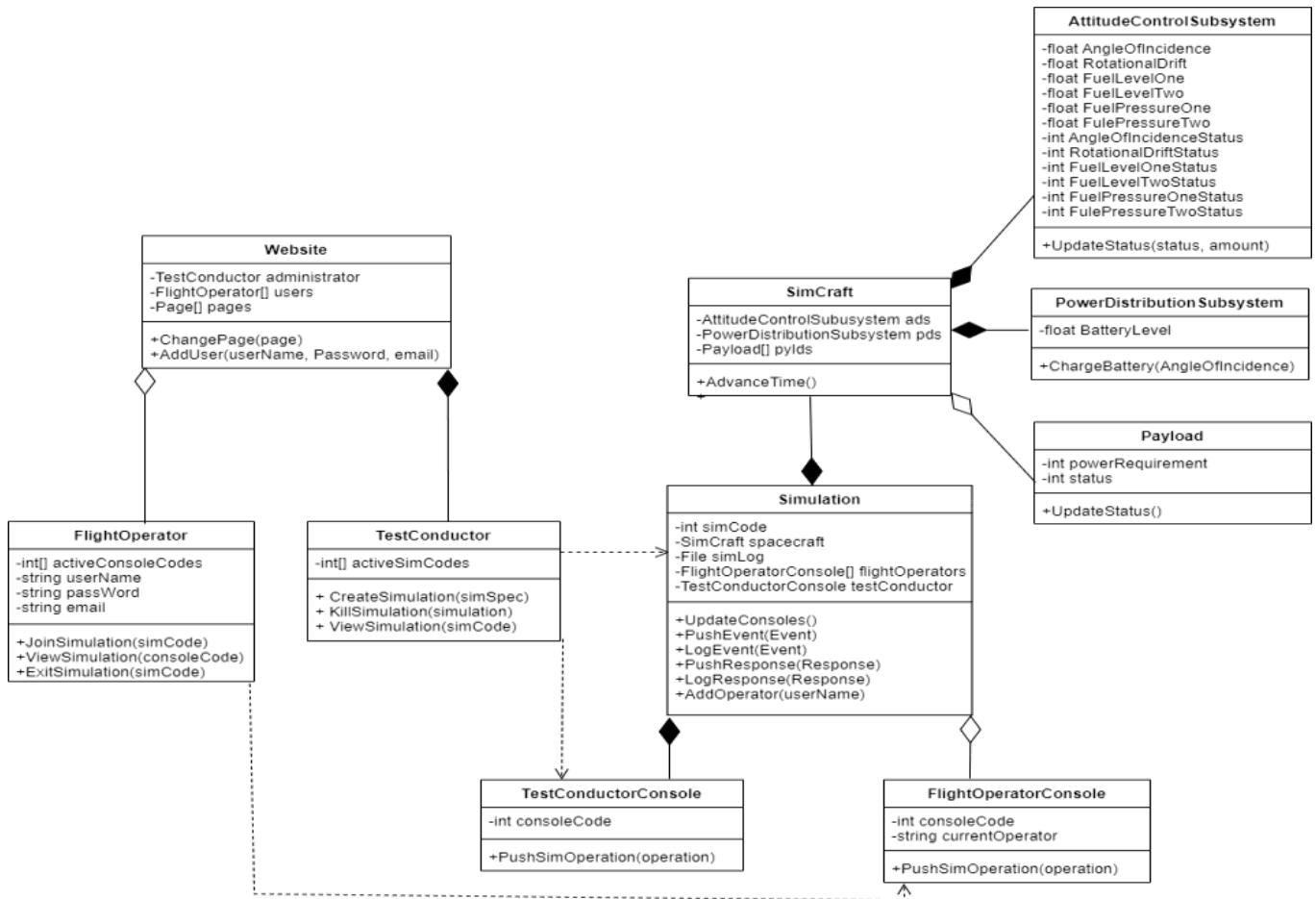


Test Conductor Architecture



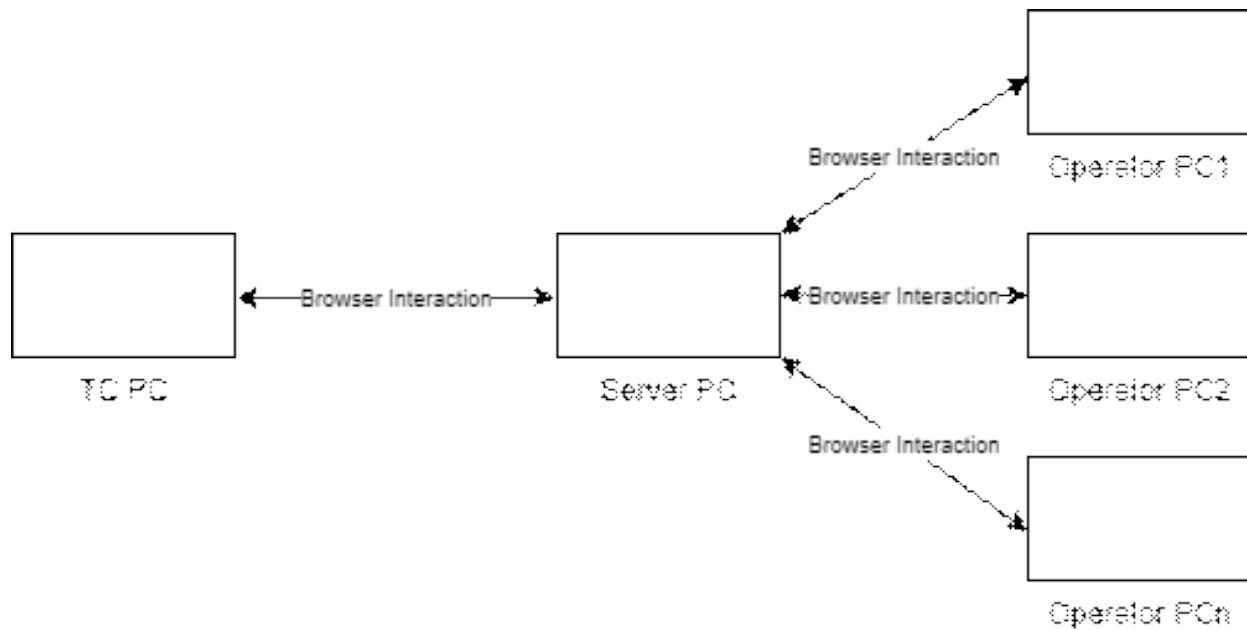
# UML

Friday, December 9, 2022 10:43 PM



# Hardware

Friday, December 9, 2022 10:43 PM



# 01/12 - Class Meeting

Thursday, January 12, 2023 11:51 AM

**Project: Spacecraft Control Center Simulation**

**Topic: Welcome back from break**

## **Summary of Work:**

- Met in Classroom, had brief class chat about small changes to course and syllabus
- Met with group

## **Details:**

- Jesse did rundown of overall gameplan for his switch to scrum master and how he planned to make achievements this semester

# 01/17 - Class Meeting

Tuesday, January 17, 2023 3:12 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Delegation of Tasks**

**Summary of Work:**

- Discussed Big Group Issues and determined sub groups
- Determined tasks to start of semester
- Made some rules for professor relations
- Created When2Meet

**Details:**

- My jobs are TC admin code and some design
- The team needs to meet with Laskey
  - o She needs to be emailed
  - o Main point: Initial conditions for spacecraft
- Professor Relations: Customer and PO get 2 weeks to respond

# 01/19 - Class Meeting

Thursday, January 19, 2023      4:00 PM

## **Project: Spacecraft Control Center Simulation**

### **Topic: Fixing Backlog**

#### **Summary of Work:**

- This meeting was spent fixing the backlog from last sprint
- Also scrum meetings will now include Dr.Akbas sitting in
- Come up with plan to have a meeting with Dr. Laskey and Dr. Garfield

#### **Details:**

- With Kyle's help and our separate EPICs we went through and reworded/deleted backlog items that were made irrationally fast last semester
  - o Kyle: FO
  - o Carly: TC
- Backlog items have to quantifiable
- Added new detailed backlog items matching Jesses updated vision diagram

# 01/20 - Discord Update

Saturday, January 21, 2023 12:29 PM

**Project: Spacecraft Control Center Simulation**  
**Topic: Response from Dr.Laskey**

## Summary of Work:

- Found out Dr.Laskey's schedule
- Solidified meeting time
- Thursday 01/26 2:30-3:30pm

## Details:

STaTE (Spacecraft Control Center Training and Testing Environment) Meeting Time

 **Laskey, Lana**

To: Slager, Jesse; Garfield, Keith A.  
Cc: Akbas, M. Ilhan; Altamira, Juliana C.; Bosma, Carly J.; Cevallos Jr., Jeosffrey G.; Garber, Kyle; Mog, Jeremy R.; Summer, Annamaria T.  
Hello Jesse!

I am available for zoom 1p-3p on Tuesdays & Thursdays.

**Lana Laskey**  
*Program Coordinator & Assistant Professor*  
*Spaceflight Operations, College of Aviation*

# 01/24 - Class Meeting

Tuesday, January 24, 2023      4:00 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Start coming up with Topics for discussion with Dr. Laskey**

**Summary of Work:**

- Come up with questions for Dr. Laskey as of now post to discord

**Details:**

# 01/24 - After Class Meeting

Tuesday, January 24, 2023 8:30 PM

## **Project: Spacecraft Control Center Simulation** **Topic: Fix Vision Statement**

### **Summary of Work:**

- Jesse revised our original mission statement from Semester 1
- I fixed some run on and grammar issues

### **Details:**

- Jules sent here notes from discussion with Laskey so we could all read and come up with follow up questions

[LASKEYNotes01\\_24.pdf](#)

From <[https://cdn.discordapp.com/attachments/1017501324209827913/1067539887223492628/LASKEYNotes01\\_24.pdf](https://cdn.discordapp.com/attachments/1017501324209827913/1067539887223492628/LASKEYNotes01_24.pdf)>

SStATE (Spacecraft Control Center Training and Testing Environment)

Product Vision Statement

Date: 01/24/2023

This product will integrate fully defined requirements from the customer and product owner to create a virtual environment that simulates spacecraft scenarios and anomalies as a learning platform for use in testing and training of students in the Space Flight Operations degree program to learn about spacecraft control consoles and spacecraft troubleshooting by properly addressing these situations in real-time.

Carly: This product will integrate fully defined requirements from the customer and product owner to create a virtual environment that simulates spacecraft scenarios and anomalies. The main purpose is to be a learning platform for use in testing and training of students in the Space Flight Operations degree program. Students shall learn about spacecraft control consoles and spacecraft troubleshooting by properly addressing these situations in real-time.

# 01/26 - Before Class Meeting

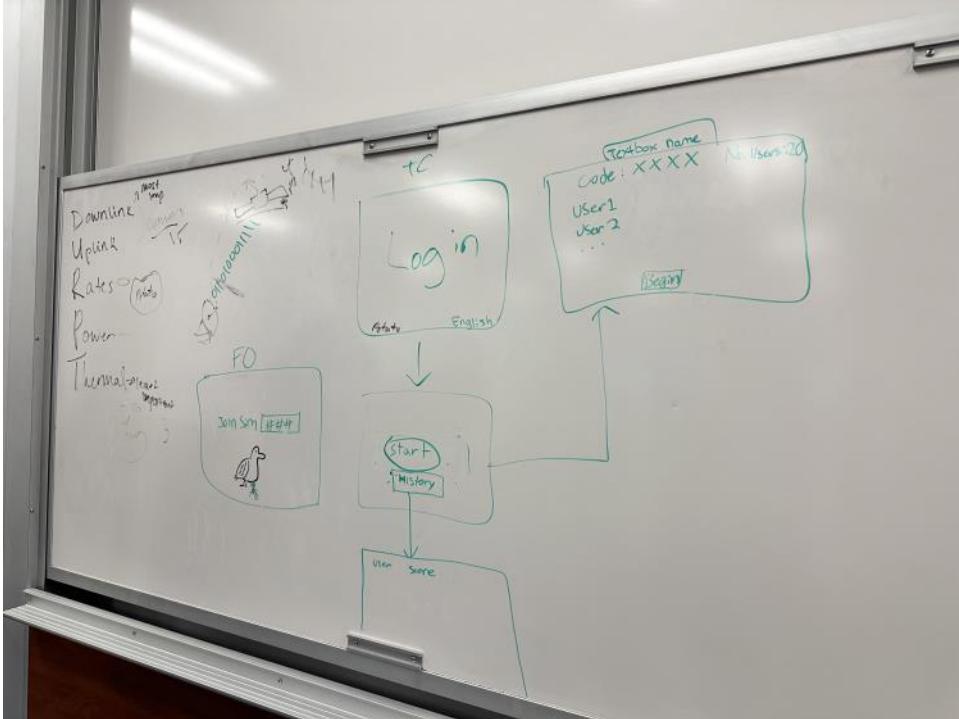
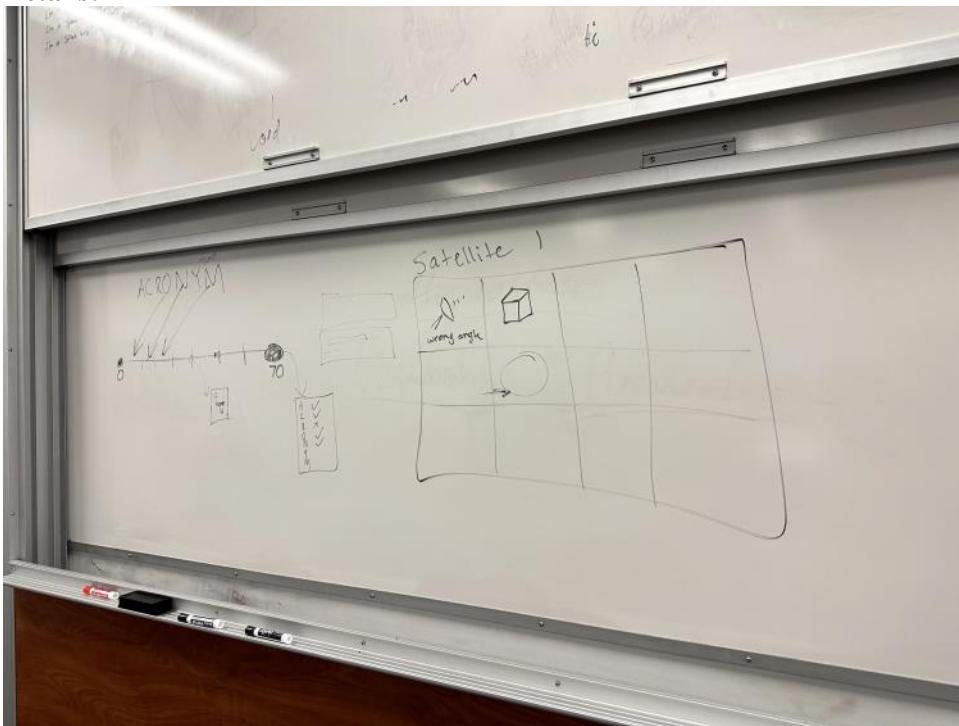
Thursday, January 26, 2023 2:00 PM

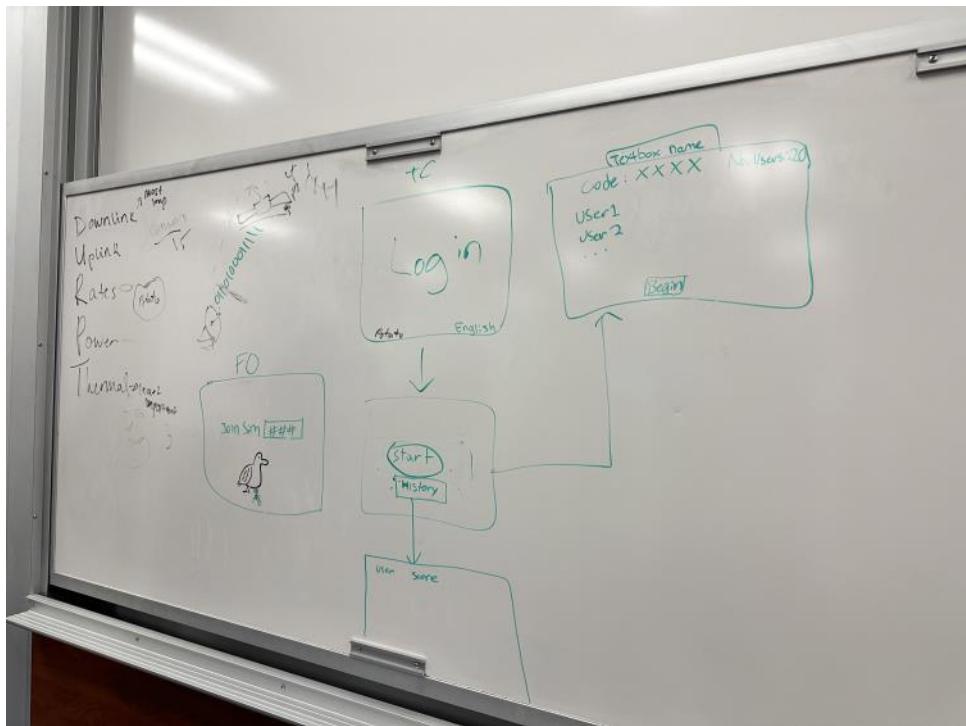
## Project: Spacecraft Control Center Simulation

### Topic:

#### Summary of Work:

#### Details:





# 01/26 - Class Meeting

Thursday, January 26, 2023 3:13 PM

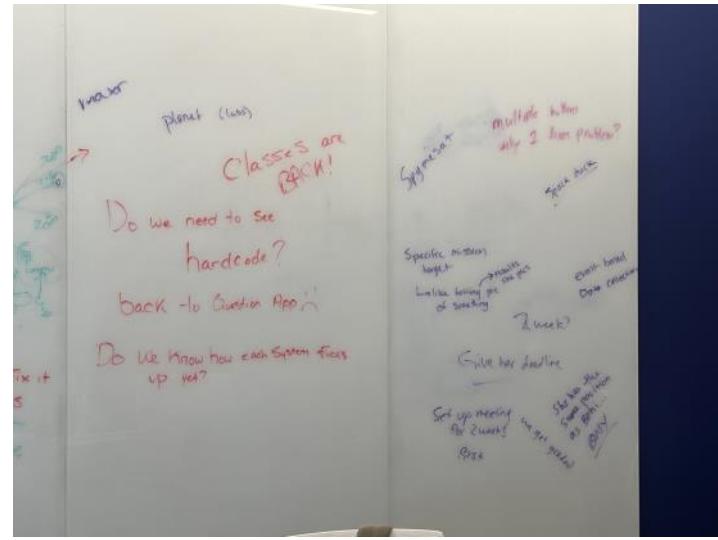
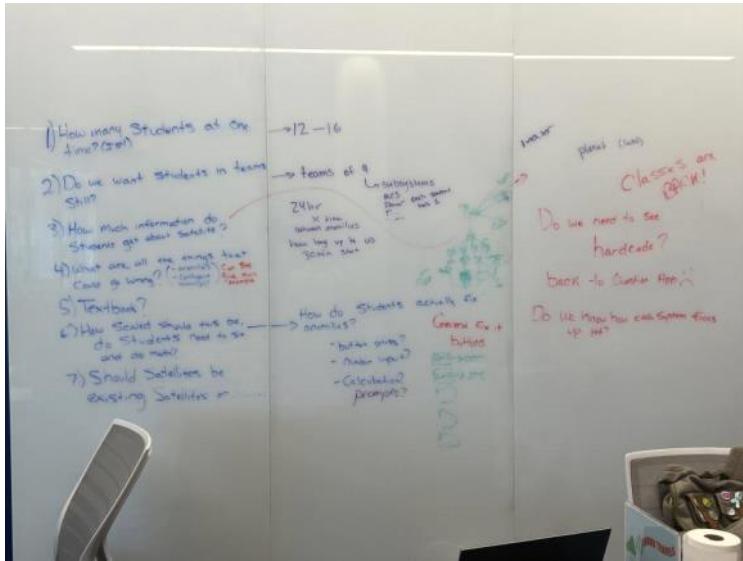
## Project: Spacecraft Control Center Simulation Topic: Meeting with Dr. Laskey and Dr. Garfield

### Summary of Work:

- Each member presented the questions they were well versed in
- Dr.Laskey Agreed to writing us a script in two weeks time

### Details:

- 1.) How many students (ish) at 1 time?
- 2.) Do we want students in teams still?
- 3.) How much information do students get about satellite
- 4.) What are all the things that can go wrong? Contingent anomalies?
- 5.) Textbook?
- 6.) How scaled should this be, do students need to sit and do math?
  - How do students actually fix anomalies?
- 7.) Should satellites be modeled off existing satellites.



# 01/31 - (ABSENT) Class Meeting

Tuesday, January 31, 2023 6:00 PM

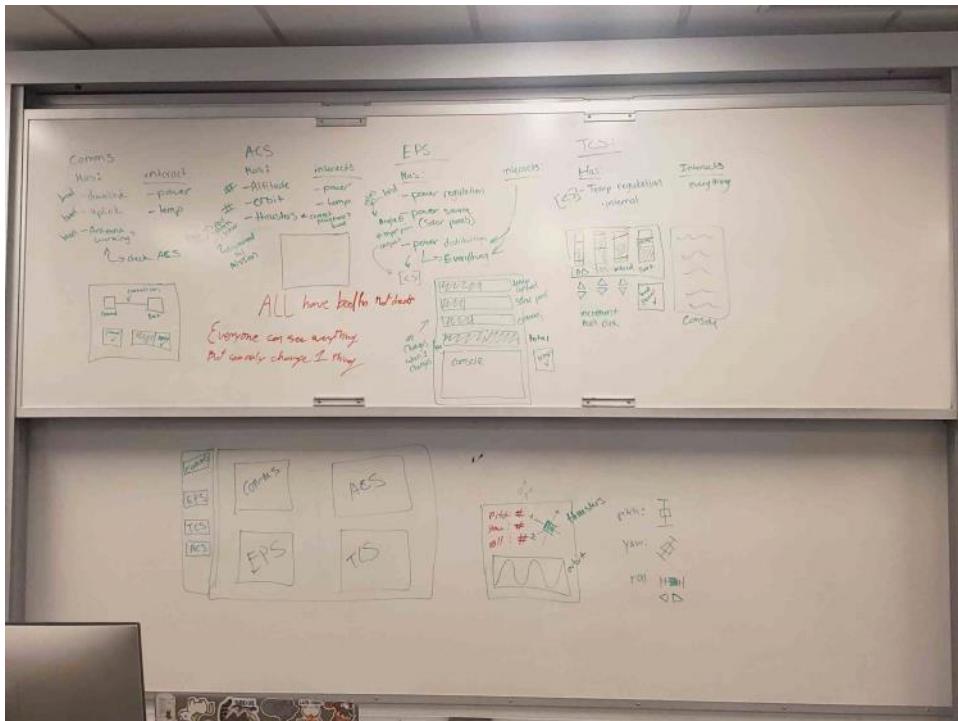
## Project: Spacecraft Control Center Simulation

### Topic:

#### Summary of Work:

- Team worked on translating Dr.Laskey's answers from last Thursday to breakdown the 4 systems and their attributes

#### Details:



# 02/02 - Before Class Meeting

Thursday, February 2, 2023 3:32 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Discuss implementation & Catch Carly up**

## **Summary of Work:**

- Summer and Kyle found Brython to aid in embedding python into Javascript, one potential option for the sim data
- Carly was caught up from the meeting 01/31 she missed from being sick

## **Details:**

- Team reviewed the diagrams they had created from last Tuesday

# 02/02 - Class Meeting

Thursday, February 2, 2023      2:30 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Reform Jobs**

## **Summary of Work:**

- Reformed jobs because there are more sub jobs that need a person in charge of
- Determined current time for my local computer to save a piece of data to the database

## **Details:**

- Jeff: Stay on power
- Juliana: Move to ACS
- Summer: Modularity and generic power systems
- Jeremy: Physics alone
- Kyle: Stay on FO
- Carly: Stay on TC

# 02/07- Class Meeting

Tuesday, February 7, 2023 3:14 PM

## Project: Spacecraft Control Center Simulation

### Topic: Sim work & personal code

#### Summary of Work:

- Jesse focused on getting the sim to update automatically so he was talking with Kyle and Summer and conducting research
- They decided on AJAX
- Decided to follow up on the missing script

#### Details:

<https://www.educba.com/web-sockets-vs-ajax/>

STaTE (Spacecraft Control Center Training and Testing Environment) Script

Good Afternoon Professor Laskey,

We're just reaching out to see how the script is coming along and if we could do anything to help you with it. We are coming to the end of our first sprint and are at a point where the script will be a significant aspect of our design implementation.

Thank you for your time,  
The STaTE Development Team

# 02/09 - Class Meeting

Thursday, February 9, 2023 4:30 PM

## Project: Spacecraft Control Center Simulation

### Topic: Updating each other on work and group work time

#### Summary of Work:

- Jesse requested if we skipped presentations that we sent an email scrum meeting to Dr.Akbas
- I conducted this scrum meeting and recorded it for the email
- Then team had discussions and did individual progress

#### Details:

##### Scrum Meeting 02/09/2023



Bosma, Carly J.  
To Akbas, M. Ilhan  
Cc Slager, Jesse; Garber, Kyle; Mog, Jeremy R.; Summer, Annamaria T.; Cevallos Jr., Jeosffrey G.; Altamira, Juliana C.



Thu 2/9/2023 2:41 PM

Hello Professor Akbas,

We are sending this email as our scrum meeting via email, since we will be presenting next Tuesday.

1. What did we do between last Thursday and Today:
  - a. Between Thursday and Today the team reminded Dr.Laskey about the mission story document that we are waiting on, which should be provided by Monday or Tuesday of next week.
  - b. Kyle: Added a new submit button. Also, has been researching and trying to implement AJAX.
  - c. Jules: Researching ACS and developing ACS User Interface to give to Carly.
  - d. Jeff: Solar Panel research, trying to get sensible numbers for charging and discharging.
  - e. Jeremy: Has been working on subsystem design and implementation.
  - f. Summer: Has been working on subsystem design and implementation.
  - g. Carly: I have been working through backlog items related to the TC Homepage and trying to implement the popup pages. Have 2/3 popups appearing, but working through functionality and closing. Table and buttons have also been fixed/added.
  - h. Jesse: excused absence, he has been working on database data updating.
2. What we plan on doing tomorrow and throughout the weekend:
  - a. Kyle: Using AJAX to retrieve and periodically update on the FO sim page.
  - b. Jules: Finalizing ACS UI and helping Jeff with his tasks.
  - c. Jeff: Making a calculator for ECS and potentially making a UI for ECS.
  - d. Jeremy: Working with Summer, to create a test manager to have the database interact with the website for the sim.
  - e. Summer: Working with Jeremy, to create a test manager to have the database interact with the website for the sim.
  - f. Carly: Figuring out why my span button does not close the add class popup modal. Then hopefully moving on to the next step.
3. Obstacles
  - a. Kyle: AJAX is hard
  - b. Jules: -
  - c. Jeff: -
  - d. Jeremy: AJAX is hard
  - e. Summer: AJAX is hard
  - f. Carly: Javascript event handling and HTML "span"
  - g. Team: Not having Dr.Laskey's mission document yet.

Thank you,  
STaTE Team

# 02/13 - Late Night Meeting + Self Work

Tuesday, February 14, 2023 1:16 PM

## Project: Spacecraft Control Center Simulation

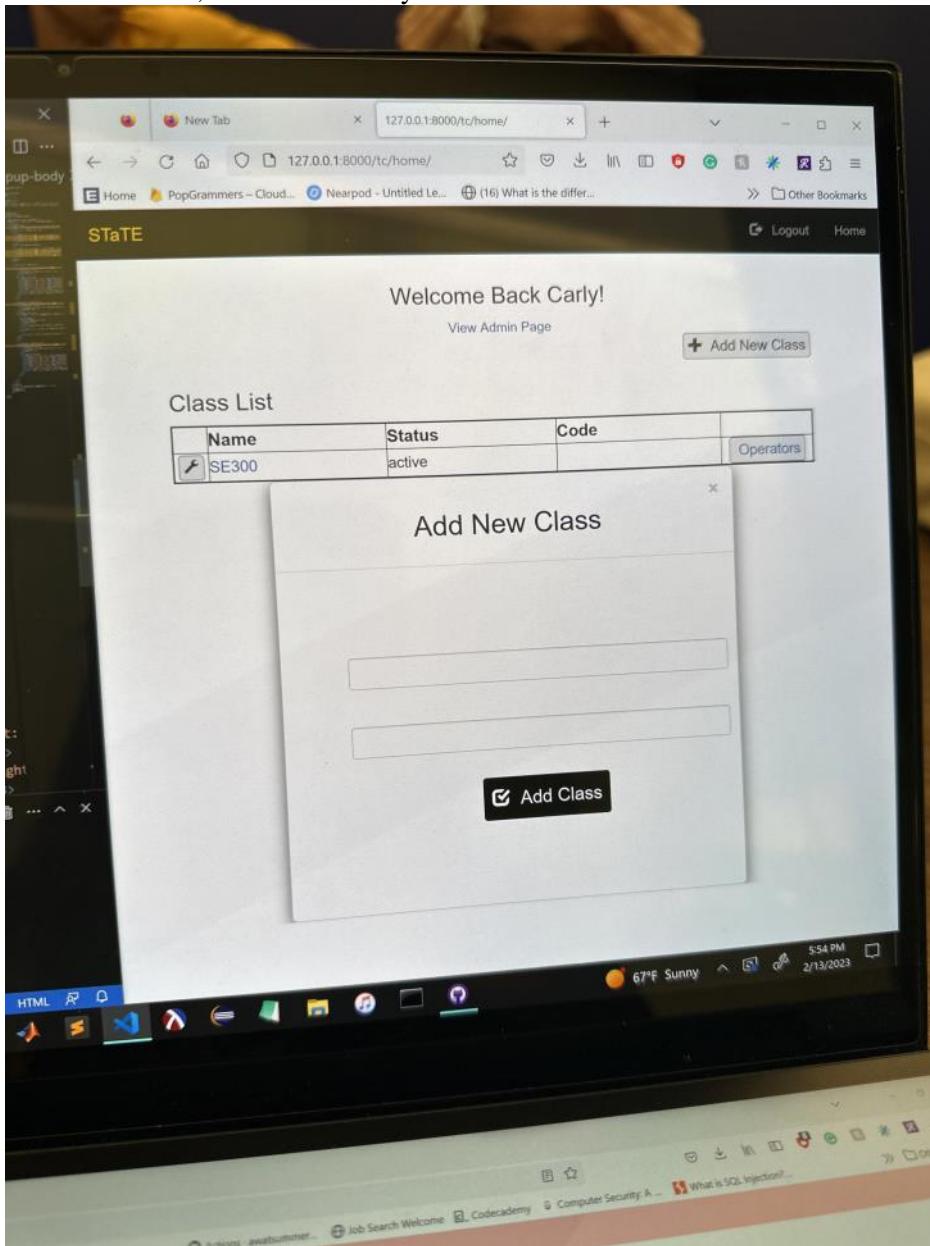
### Topic: Code issues

#### Summary of Work:

- Summer, Carly and Jesse came to discuss UI and code
- Later on continued to make progress on now fixed code

#### Details:

- Carly was able to fix her issue with popup menu's and spans
- It turns out that there is an additional issue having to do with "closing" a modal, and if the modal is not closed, it is still invisibly there



×

### Edit Classss

**Class Name:**

**Status:**

**Class Code:**

# Welcome Back Carly!

[View Admin Page](#) [Add New Class](#)

## Class List

	Name	Status	Code	
	SE300	active		

## Add New Class

**Class name\*****Status\*****Add Class**

# Jesse's Vision Drawing

Thursday, February 23, 2023 10:29 PM



Including this drawing because it is the inspiration used during Spring 1 pages.

# 02/14 - Before Class Meeting

Tuesday, February 14, 2023 10:11 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Presentation and demo finalization**

## **Summary of Work:**

- Due to this being the first time team could meet with Jesse after he got back we spent our pre-meeting finalizing the slides and assigning slides to people
- Carly & Kyle: demo
- Slides: Jesse, Summer, Jeremy, and Jeff (based on area of expertise)

## **Details:**

- Summer had lab and was unable to make it
- Diagrams were found and included

# 02/14 - Presentation + Meeting

Tuesday, February 14, 2023      7:00 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Presentation + Akbas Scrum Meeting**

## **Summary of Work:**

- The start of class was us presenting, followed by one more team
- Major hiccup in demo of the project, need to follow up on authentication issue
- Dr. Akbas sat through our scrum meeting

## **Details:**

- Nothing major happened this meeting, small extra time was spent coding
- Dr. Laskey let us know at 9:00pm that she would not be able to deliver our script

# 02/16 - Class Meeting

Thursday, February 16, 2023 3:15 PM

## Project: Spacecraft Control Center Simulation

### Topic: Task wrapup

#### Summary of Work:

- Jesse checked in on tasks and gave deadline for Sunday night
- Major page broke from a reform of the database
  - o The add sim button would not work because simulations are not held the same way in the database
- Kyle changed the data base to include Summer + Jeremy subsystem fields, and added a "code" to class for me

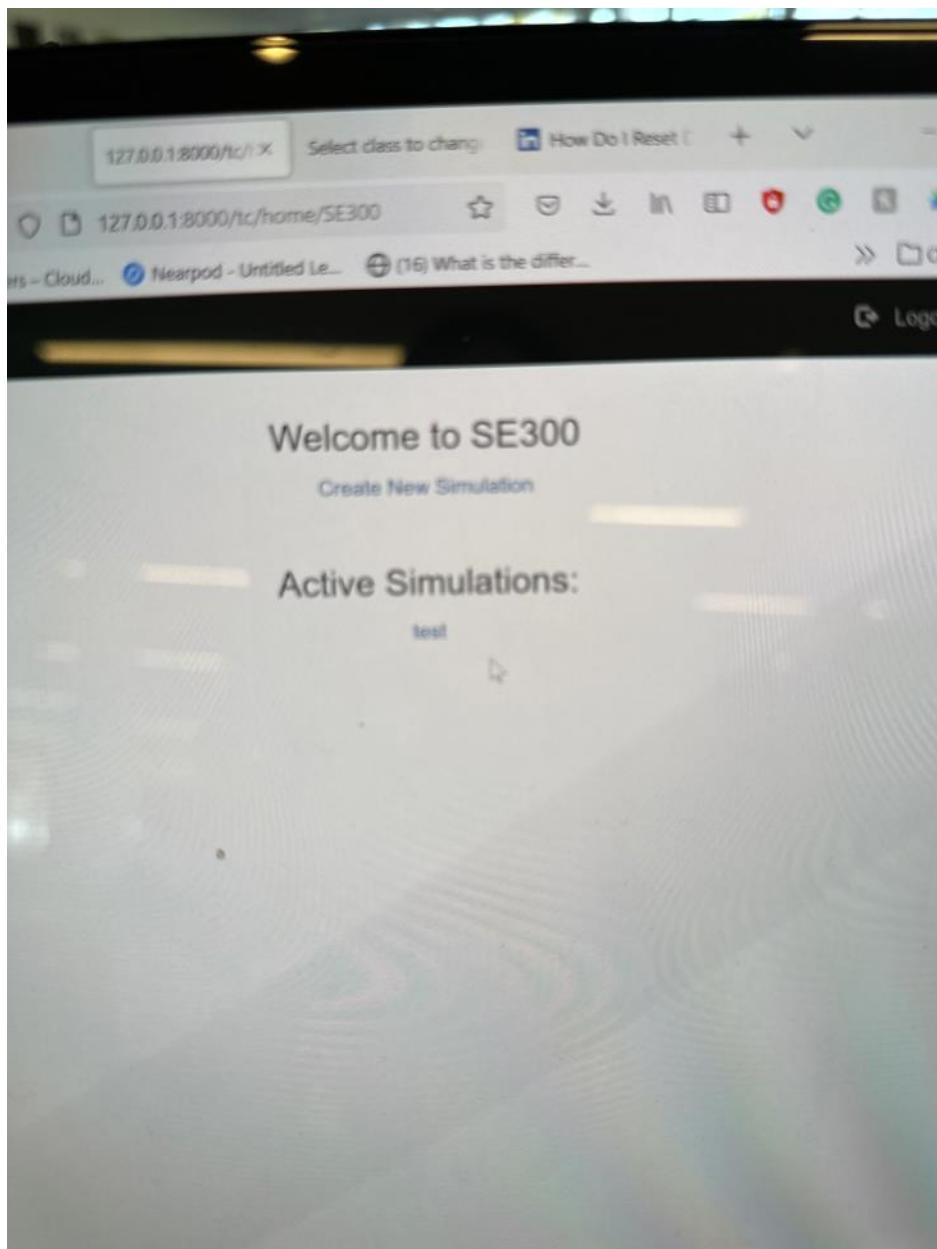
#### Details:

- I went through and fixed the functionality but then was stuck with the page not changing as it was supposed it
- Once everything was fixed, it would be moved to a popup anyway

## Django administration

### Site administration

AUTHENTICATION AND AUTHORIZATION		
Groups	<a href="#">+ Add</a>	<a href="#">Change</a>
Users	<a href="#">+ Add</a>	<a href="#">Change</a>
FO		
Flight operators	<a href="#">+ Add</a>	<a href="#">Change</a>
SIMAPP		
Sims	<a href="#">+ Add</a>	<a href="#">Change</a>
Subsystems	<a href="#">+ Add</a>	<a href="#">Change</a>
TC		
Classes	<a href="#">+ Add</a>	<a href="#">Change</a>
Test conductors	<a href="#">+ Add</a>	<a href="#">Change</a>
TESTAPP		
Questions	<a href="#">+ Add</a>	<a href="#">Change</a>



# 02/21 - Before Class Meeting

Wednesday, February 22, 2023 3:42 PM

## Project: Spacecraft Control Center Simulation

### Topic: UI Issues

#### Summary of Work:

- Jesse gave open invitation to room he reserved and he and I were the only ones who could make it
  - o However, it gave us good time to determine some issues I found when starting to code one of my backlogs
- Essentially, the attributes a sim needed and since each group would have their own uniquely named sim, were we going to make a TC create 4 of the same Missions? That could get very long and exhausting.

#### Details:

- After explaining to Jesse the issues we relayed back and forth on possibilities related to
  - o What a Sim was vs. a Mission
  - o Initial Conditions
  - o The repeatability of creating a sim of same mission
  - o Randomize on start options
  - o Initial Attributes
- After discussing back and forth we came up with a UI design and basic plan of action until we could discuss with others during class meeting

# 02/21 - Class Meeting

Tuesday, February 21, 2023 6:30 PM

## Project: Spacecraft Control Center Simulation

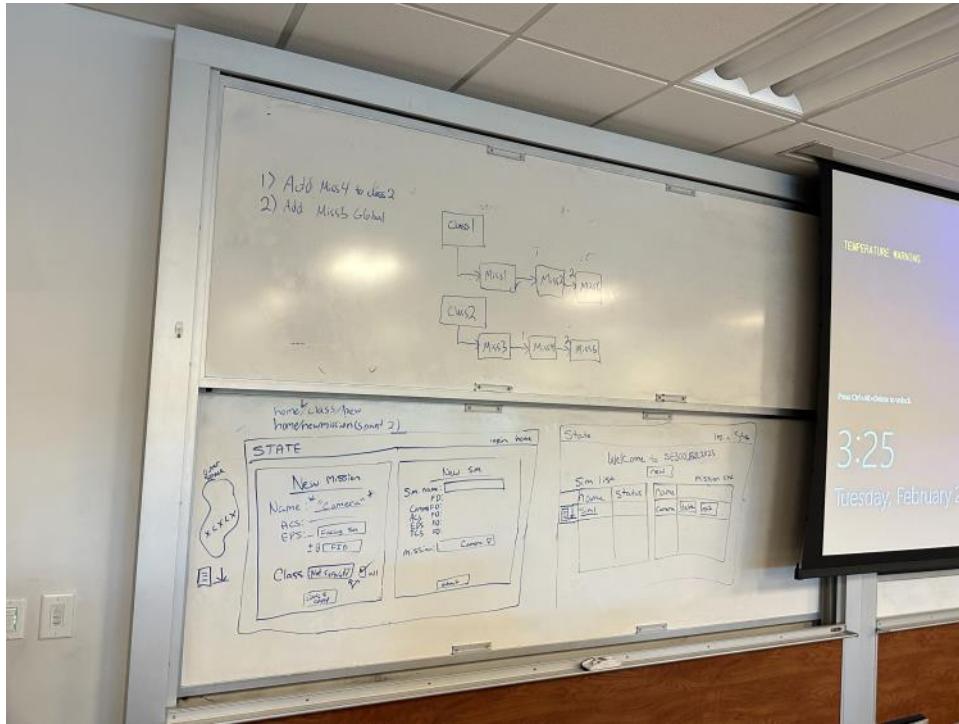
Topic: Decisions on TC Sim vs Mission UI issues after questions Carly presented to Jesse

### Summary of Work:

- Summer and Jeremy sick, Jules Doctor Appointment
- Brought Kyle and Jeff into debate
- Restructured Class Homepage just to add a Mission Table

### Details:

- Kyle biggest issue he presented was the database structure and how it might mess up the current layout
- Carly added an "all" checkbox which allowed for all classes to own a mission or just one class
  - o TC has option then to either allow multiple classes to own a mission
- We restructured the TC Class Homepage so that a test conductor can delete missions if they make mistake or wish to start over
- Image below shows the final decision for the revamping of the TC UI so that I can get to coding it ASAP



## 02/21 - Self Work

Thursday, February 23, 2023 10:27 PM

**Project:** Spacecraft Control Center Simulation  
**Topic:** Knock out some of the new UI

### Summary of Work:

- I wanted to try and start parts of the new TC class UI
- I knew I could split the table so I made the new mission table with the sim list as a placeholder
- Design will definitely need to be improved, but functionality is main goal now

### Details:

STaTE

[Logout](#) [Home](#)

### Welcome to SE300

[+ New](#)

#### Sim List

Name	Status	Manage	Operators	Reports
mission1		Manage	Operators	Reports
f		Manage	Operators	Reports
h		Manage	Operators	Reports
late		Manage	Operators	Reports
late		Manage	Operators	Reports
again		Manage	Operators	Reports
another		Manage	Operators	Reports
t		Manage	Operators	Reports

#### Mission List

Name	Status	Manage	Operators	Reports
mission1		Manage	Operators	Reports
f		Manage	Operators	Reports
h		Manage	Operators	Reports
late		Manage	Operators	Reports
late		Manage	Operators	Reports
again		Manage	Operators	Reports
another		Manage	Operators	Reports
t		Manage	Operators	Reports

# 02/23 - Before Class Meeting

Thursday, February 23, 2023 10:20 PM

**Project: Spacecraft Control Center Simulation**

**Topic: Code and UI Design**

## **Summary of Work:**

- Summer, Kyle and Jeff could not make it
- I showed Jesse my issue with css and html integration
- Explained to Jeremy and Jules the TC class homepage UI's we fixed last time.

## **Details:**

- Mostly did group discussion and I worked on code while we figured out specifics

# 02/23 - Class Meeting

Wednesday, February 22, 2023      3:15 PM

**Project: Spacecraft Control Center Simulation**

**Topic: UI's**

## **Summary of Work:**

- Carly worked on "panels" and trying to get css integrated
- Summer and Jeremy continued with sim subsystem deployment and are going to code
- Jesse checked for updates from the "sick" crew
- Jules worked on the rest of the console UI because Dr. Garfield requested the documents

## **Details:**

- My issue about not being able to tie in css files was fixed. After lots of troubleshooting and searching, I happened upon wondering the effects of my "extend index.html". As it turns out the extends, overwrites any css links in the new file and those links should be included in the index.html in order for the new file to see them.

**Project: Spacecraft Control Center Simulation****Topic:****Summary of Work:**

- Figured out the css integration which will not allow both panels and split screen
- Will use the css to split screen the add mission, add sim screen
- Had to fix the sim creation form via adding the correct functionality to the new definition in view.py

**Details:**

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "127.0.0.1:8000/tc/home/new". The page content is a Django form for creating a new simulation. The form fields include:

- Sim name\***: A text input field.
- Flight operators\***: A checkbox labeled "stateone".
- Sys list\***: Two checkboxes labeled "sys1" and "sys2".
- Submit**: A black button.

To the right of the form, there is a red rectangular area containing the text "John Doe" and "Some text here too".