Mat3D Release Plan

3D Matrix Calculator
Release Date; July 26th, 2018
Revision: 1.0 July 1st, 2018
Team Name: Matrix Masters

High Level Goals:

1. Be able to define and compute matrices through robust calculations
2. Have a user interface which facilitates matrix computation
3. Be able to apply defined matrices to a externally loaded 3D object
4. Have a working prototype used to debug the final product
5. Have a working github repository with the entire team's work
6. Deploy the website hosting the matrix calculator

User Stories:

Sprint 1- Parsing, initial UI, initial 3D, getting started with github

1. As a matrix calculator developer, I want a working github repository and have everybody acquainted with Github so that we can share code more easily.   **TimeFrame: 1 day**
2. As a matrix calculator user, I want a 3d viewport to be implemented so that I can view any 3d models I import into the calculator. **TimeFrame: less than 1 day**
3. As a matrix calculator developer, I want a user input parser so that the user can provide complex matrix calculations.   **TimeFrame: 4-7 days**
4. As a matrix calculator developer, I want the top bar to take user input so that the user can specify matrix calculations. **TimeFrame: 1 day**
5. As a matrix calculator user, I want to be able to import/export OBJ files so that I can display the on screen. **TimeFrame: 1 day.**
6. As a matrix calculator user, I want to be able to move the camera within the 3d viewport so that I can see my 3D model at different angles.   **TimeFrame: 1-3 days**
7. As a matrix calculator developer, I want a matrix cell parser so that a user can define scalars such as complex numbers, trig functions within their matrices. **TimeFrame: 2-3 day**
8. As a matrix calculator developer, I want a sidebar variable parser so that a user can define complex combinations of defined matrices. **TimeFrame: 2-3 days**
9. As a matrix calculator user, I want changes to any matrix to affect the other defined matrices so that my calculations can be more impactful. **TimeFrame: 2 day**
10. As a matrix calculator developer, I want a sidebar so that we can put matrix variable items on that sidebar.   **TimeFrame: 1-2 days**

Sprint 2- 3D and UI

1. As a matrix calculator user, I want to be able to define matrices and apply them to 3D objects so that I can see a 3D transformation of those matrices.
    a. Convert a math.js matrix object to an action to the 3D viewport. Time Estimate: 3-4 days
    b. Be able to save matrix values as variables, possibly in a hashtable or dictionary. Time
    Estimate: 2-3 days
    c. Getting the top bar to be fully operational. Time Estimate: 2-3 days

2. As a matrix calculator user, I want to be able to toggle between the matrix calculator and 3D viewport so that I have access to both functionalities while using MAT3D.
    a. Have a button that will toggle between calculator mode and 3D mode. Time Estimate: 10 minutes
    b. Display a matrix in calculator mode and the 3D viewport in 3D mode (in the same area). Time Estimate: 1-2 days

3. As a matrix calculator user, I want to be able to compute matrices/scalars so that I can take advantage of mathematical expressions while interacting with the calculator.
    a. Finish implementing remaining mathematical functions Time Estimate: 1-2 days
    b. Get negative numbers working with the parser. Time Estimate: ½ day

4. As a matrix calculator developer, I want to be able to improve on the calculator UI so that there is more overall functionality for the user.
    a. Be able to display a specific matrix from the saved matrices on the sidebar. Time Estimate: 1-2 days
    b. Be able to add/delete matrices within the sidebar. Time Estimate: 1 day
    c. Add buttons for all of the matrix functions at the bottom of the screen. Time Estimate: 1 day

5. As a matrix calculator developer, I want to be familiar with HTML, CSS, and Vue.js so that the whole team can help with the UI during the 3rd Sprint.
    a. Watch/Rewatch Derek Banas videos on HTML/CSS Time Estimate: ½ day
    b. Read up on Vue.js Time Estimate: 1-2 days

Sprint 3 - Deploying and finishing up

1. As a matrix calculator user, I want a complete matrix calculator so that I can compute matrices and apply those matrices to a 3D model with no issues.
    a. Develop unit tests for different aspects of the calculator. Time Estimate: 3-4 Days
    b. Be able to integrate all aspects of the calculator onto the server. Time Estimate:7 days

2. As a matrix calculator user, I want to be able to interact with both the matrix and 3D functionality so that my computed matrices can affect my loaded 3D model.
    a. Develop lighting modification Time Estimate: 1 Day
    b. Implement preloaded objects Time Estimate: 1 Day

          c. Integrate the queue holding matrix transformations Time Estimate: 1 Day

          d. Be able to toggle between 2D and 3D mode and have both the matrix display and canvas show up in the same area (depending on what mode it is in). Time Estimate: 2-3 Days

          e. Be able to use the matrix data from the sidebar into 3D mode. Time Estimate: 1-2 Days

3. As a matrix calculator developer, I want the UI to look nice and professional-looking so that the users can easily interact with it.

          a. Make minor improvements to the CSS Time Estimate: 1 Day

          b. Fix any errors with how things are being displayed Time Estimate: 1 Day

Product backlog:

None. Each user story and portion of calculator functionality is integral to the calculator's implementation. Nothing should be left out; and due to the intended functionality of the calculator, anything added would extraneous and distracting.