

## **Virtualization of a Turing Machine Weekly Report: 2-7-2021**

Outlined in this document details the work and progress toward the making of the Virtualization of a Turing Machine Project for the week of 2-7-2021.

During this week, Brett and Jisue's progress toward implementing the user interface in the Turing Machine project continued and is nearing completion. Features added throughout the week include the general user interface fleshed out into what the end user will see. It also includes multiple types of layouts for the interface. The next features to be implemented are the following: adding a color theme to the interface, adding listeners and functions to buttons to change layouts on the fly, and general cleanup of spacing in elements.

The general structure of the website was finalized to a state that can be set aside until the Debugging Phase begins. The final touches implemented during the week include element scaling and general restructuring for document viewing by James Merenda.

The element scaling portion refers to the general look of the website when presented on varying viewports. Depending on the resolution of the viewport, the website will maintain a certain screen-to-element ratio for easier viewing. The scale factor does maintain a minimum and maximum size to prevent distorting.

Restructuring for document viewing refers to an unintended consequence from last week's report concerning Dr. Chen's inability to view the team's Gantt chart and slideshow. The issue was from hosting the online documents in California University of Pennsylvania's SharePoint service from the Microsoft Online Suite. Unfortunately, the permissions set by SharePoint disallow anyone to view the document without signing in to their services. Hopefully with migrating all of the live documents to Google, this will mitigate that problem. In the off chance that this new implementation does not work, a public view link is also included.

Finally, progress toward making the machine come to life was made by creating a demo web page of what the animated Turing Machine will do. The page is not accessible through the website, but it can be accessed via the address bar at <https://jamesmerenda.github.io/calu-turing-machine/www/machineanimationsdemo.html>. The demo includes two stepping buttons that move the read head left and right. It also includes a reset button to return the read head to its origin on the tape. Hopefully in the coming weeks, some sort of implementation will be achieved. After refining the demo, the CSS structure was implemented specifically for the main web page of the project website. This will ideally allow for a "drag and drop" implementation, but time will tell.

Some problems the team faced during the week include the following. In its current form, the animations in the TM Demo page feel jarring since they lack any sort of transition. There is also the consideration of how to handle looping the tape.