

## **Virtualization of a Turing Machine Weekly Report: 3-28-2021**

Outlined in this document details the work and progress toward the making of the Virtualization of a Turing Machine Project for the week of 3-28-2021.

Throughout the week, additional reworks and features were implemented to the website. This includes additional example programs developed for the user's convenience. Each program either manipulates binary in a unique way or performs some sort of arithmetic. During the testing of these programs, bugs with the transition execution implementation were discovered. The bug was introduced due to the use of referencing the user input itself rather than what is found in the current cell the read head is over. This leads to not having symbols beyond the original input length and causes false stalling.

Jisue Lee continued to develop a solution to draw state diagrams based on suitable transitions. The implementation Jisue was working on before did not work out as planned, and decided to throw out that idea and rewrote it into a working solution.

James Merenda continued to add information to the documentation in the code editor info button menu. This includes descriptions for general information regarding the basics of the code editor and general syntax. There are also additional descriptions for each pre-made machine from the pre-made machine tab. These descriptions are available to the user rapidly by clicking hyperlinks near the beginning of the help window found by clicking the help button in the top right corner of the transition editor.

Some problems the team faced during the week include the following. Due to issues introduced to the compiler, testing machines were limited within certain parameters. There were also complications with the current implementation of drawing state diagrams and required a complete rework. There was also deliberation about how to approach adding transitions during a

machine's execution. Currently, a solution for this is still in the works, but plenty of fail points were identified when having this kind of feature.

Plans for next week include the following. Continue to optimize the website's look and feel. Continue to add additional information to each help info box. Continue to work on the user manual. Continue to try and implement a solution to allow mid transition edits without recompiling.