

Virtualization of a Turing Machine Weekly Report: 2-28-2021

Outlined in this document details the work and progress toward the making of the Virtualization of a Turing Machine Project for the week of 2-28-2021.

Throughout the week, James Merenda revamped the tape animations and tape itself. Due to the unexpected complexity of implementing a pseudo-infinite tape was too much. To compensate for this, the entire structure was changed from a small set of eleven cells that cycle from each side to over fifty cells that are hidden on each side. This new structure of cells is clunky, but it works the intended way. In addition to the structure updated, animations associated with the tape cells were reworked slightly to match the new structure. In addition to stepping cells left and right, it will check if the last cell is reached on either side, the function will alert the user when the maximum cell on each side is reached.

Adjustments to the presentation of the transition speed slider were also introduced. There are now labels on each side of the transition speed slider to indicate whether the speed will be slower or faster compared to the default. There is also another indicator below the transition speed slider that produces the time taken for each transition in seconds.

Jisue Lee began working on state recognition throughout the week. So far the code looks for a matching state value compared to the current value on the tape. From there, the machine object is split into substrings for the value, direction, and the following states. Afterward, the current state and values are updated then perform the transition.

Brett George worked on documentation in his code throughout the week. There was some confusion between James Merenda and Jisue Lee about how the compiler parsed transitions and how they are stored. Brett assisted the team by adding clarification in the form of Discord discussions and further code documentation.

Some problems the team faced during the week include the following. Nothing to note at this time.

Plans for next week include the following. James Merenda will begin to work on stylizing the Turing machine to fit the overall theme of the website and update other content in said website. Jisue Lee will continue to develop the state recognition. This includes possibly splitting this concept into two different functions, error checking, accepting alternate forms of commands from user input, and potentially converting JavaScript outputs to user outputs. Brett George will begin development on generating state diagrams.