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Formal Languages and Computability

Project Proposal: Dating Sims and DFAs

For this project, I wanted to work with Dating Simulator games. Although it seems silly, dating simulators can actually be expressed very well with a DFA. Not all dating sims are the same but in general the game presents a group of girls that you meet and you have to build a relationship with them with the hopes of dating/marrying them. From there you are usually given response options to choose from that can benefit or damage your relationship with these girls. In the beginning these options lead you to select a girl from the group of girls you meet, and settles on their “route”. But some Dating Sims make it possible to end up with multiple girls or even go from one girls routes to another's randomly. All this branching back and forth can make for some complicated DFAs. Regardless of how you go about making choices you will reach one of the many possible endings. So we start off meeting these girls, which can be represented in a DFA with an Initial State. From there the different options you are given will lead to other non-accept states. These options can be represented with the transitions between the states. Finally the different endings can be represented with accept states. Depending on how you look at it bad endings can be seen as errors or as accept states as well. Representing all this information with a DFA could help players make optimal choices. A DFA can also help game developers understand and keep track of choices, relationships, and goals within these types of games. The stories for these can become twisted and convoluted so a DFA can help keep it organized. Therefore, for this assignment I will look at some dating sims and use them to design a DFA to represent the story and progression of a new “simple” dating sim. This will allow me to show how useful DFAs can be to developers and players alike.