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Foundations of Computer Science

DFA Implementation

Overall this assignment went very well and I was pleased with my final iteration. I decided to challenge myself and create this using a language I had little to no experience with, Python, and I found it to be a joy to work with. It has a great standard library including tools like “argparse” and “json”, which made some parts of this assignment much easier than a C++/C implementation.

I found it to be an interesting challenge to parse the DFA definition file and use these definitions to run the tool on strings. I feel as though I came up with a robust enough solution to allow for slight user mistakes in definition. The parser also allows you to write the definition in JSON, which is much less error prone than a raw DFA file. I was having difficulty understanding what the assignment meant by “interactive mode” so I implemented it using a flag which allows you to continuously input strings and have them be tested. This flag can be used in combination with verbose to see how the machine handles your string as well as the parsed definition.

I found myself enjoying this programming assignment because I got to use a great new language as well as solve a unique problem.