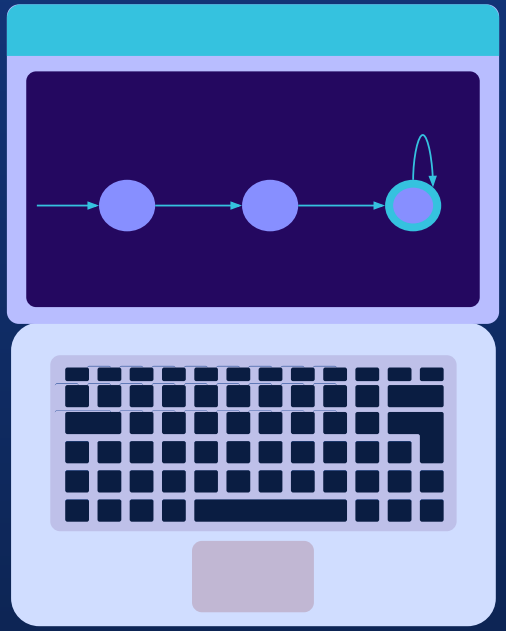
Improved Visualization for Formal Language: **Project Plan 2**



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Advisor Involvement

We met again with Dr. Luginbuhl to further flesh out our goals for the project this semester, and primarily what we wish to accomplish for Milestone 4, primarily the need for us to consider whether to add in functionality to turn NFA into DFAs and to implement a system to discern between the two.

Potential Features as per advisor discussion

- Animated Process to turn NFAs into reducible DFAs. or at least functionality to detect when the user builds an NFA and prompt for the change/tell them it can't be minimized
    - If NFAs are included in app functionality, lambda transitions should be added
- Hardcoded visual demonstrations of features and app processes
- Reversible minimization (step backwards/state restore)
- Depth first nondeterminism before animations, backtracking within animation. (further expansion of teaching features)

Such features should be considered but aren't the primary focus of development.

Milestone Four features as per last semester

- Refine and expand minimization functions
  - (works in a basic state currently though the animated component is lacking)
- Develop a basic version of a graph builder that takes in a submitted syntactically correct string/equation
- Start developing a teacher mode for interactive DFA building
- Heavily bug test current features and ensure quality of new ones.
- Continue to update the “readme” file with new features as to make sure it maintains completeness.

Further features as per advisor meeting and group reassessment

- Improved GUI appearance and navigability
- Allow the program to discern between NFAs and DFAs and decide if the program will allow for NFA graphing (NFA specific features)
  - If so, expanded transition types to include lambda
- Refine stability
  - The scope of the DFAs the user can make means we need to stress test our algorithms for minimization and traversal

Future Milestone Goals (as per milestone 3/reviewed by advisor)

We hope to utilize Milestones 5 and 6 to refine our core features, program stability, and user experience. Our current scope of features is well realized, though our largest undertaking this semester will be the teaching mode/interactive minimization. Such as system will require bespoke coding to respond and handle every possible DFA (or exist solely in a demo style teaching format using one specific DFA as to teach the mechanics of that system)

Questions?

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