Reading. Read Chapter 2: “Finite Automata”. There is several pre-recorded lectures pertaining to this assignment. They can be found following the links on the grid of notes, or on Canvas.

Additional Resources. See the Panopto videos.

Assignment. Questions this week only on sections 2.1 and 2.2. (Next week on sections 2.3 and 2.4.) Do some small number of the following exercises.

- Section 2.1: All the problems are good, e.g., 7(a–g). Also 13–18. Proofs: 19, 21, 24, 26.
- Section 2.2: Problems 5–7, 13 (easy); 8, 9, 11a, 12.

We are especially interested in clear exposition and proof technique. (Some solutions sketches are in the back of the book.)

Submission. Write up the solutions. You may use pen and paper, plain text, or LaTeX. Produce a PDF document, and submit it on Canvas by the end of the day Fri, 3 Sep 2021.

The due date is for the completed problem set. You should read the material in advance, and start thinking and working on the problems in advance, so that you can ask questions in class.

Questions. If you still have questions about how to do the problems, you are welcome to send me e-mail: ryan@fit.edu. Students may be called upon to share and explain their progress on the exercises during class.

Assessment. Ultimately the written proofs, your choice of exercises, and your participation in answering and asking questions, will influence your course grade.

Objectives.
1. Describe the components of a deterministic finite accepter (dfa)
2. State whether an input string is accepted by a dfa
3. Describe the language accepted by a dfa
4. Construct a dfa to accept a specific language
5. Show that a particular language is regular (Definition 2.3, page 46)
6. Describe the differences between deterministic and nondeterministic finite automata (nfa)
7. State whether an input string is accepted by a nfa
8. Construct a nfa to accept a specific language