Reading. Read Section 1.2 on grammars. Read Chapter 3: “Regular Languages and Regular Grammars.” There are several pre-recorded lectures pertaining to this assignment. They can be found following the links on the grid of notes or on the Canvas LMS. class05, page 8ff.

Assignment. Do some small number of the following exercises.

- Section 1.2: 15, 16, 20
- Section 3.3: Problems 1–7

Exercises for sections 3.1 and 3.2 were last week. 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, 24 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. (§1.2) Define (unrestricted) grammars
2. (§3.3) Identify whether a particular grammar is linear, left-linear, right-linear, or regular
3. (§3.3) Construct regular grammars for simple languages
4. (§3.3) Construct a nfa that accepts the language generated by a regular grammar
5. (§3.3) Construct a regular grammar that generates the language accepted by a finite automaton