Homework 1: Getting Started

CSCI 161

Due 9pm, Thursday, September 24, 2020

Ben Dreyer

Overview. This first mini-assignment asks you to reflect on what you've learned in the first few days of class. It is more important to me that you spend time thinking about these questions than answering them, so your responses can be brief. It also has you produce a DFA from the book using JFLAP and upload the file to make sure your technology is up and running for your first problem-solving assignment next week.

For Questions 0 and 1, upload a file saved as a pdf, jpg, or png. For 5% extra credit on the assignment, submit your edited copy of this tex file (it must compile!) and the associated pdf. For Question 2, save and upload your JFLAP file as `1-2-[scuusername].jff`.

Question 0. Who, if anyone, did you consult for help on this homework? This is a required question, even if the answer is no one. It is suggested but not required if you had substantial collaboration to reflect on the nature of the collaboration and what it showed you about the strengths and weaknesses of your conceptual understanding and study habits. It is always required that your solution writeups are entirely in your own words reflective of your own understanding.

Solution. I did not consult anyone for this homework.

Question 1. Answer the following questions about your experience in the class so far:

- What is a new perspective from class this week that made you think about something differently?
- What is a new concept or idea that seemed particularly clear? Why do you think it clicked?
- What still seems murky? How will you be able to get clarity on it? This may be going through examples on your own, studying with classmates, coming to office hours, going back over your lecture notes, etc.
- By end of class Wednesday, we'll have covered all the topics in Section 1.1 of the book except regular operations. Did you read this section of the book? Before or after class? Was it useful?

Solution.

- It's interesting thinking about "languages" in this context. We are not talking about the languages that we would normally think of such as english or spanish, or even programming languages that us CS majors are so accustomed to. Instead these languages are those that a DFA can read and accept.
- A concept that clicked with me is the logic behind some of the DFA's we have defined so far. I think I understand this clearly because these machines aren't incredibly complex yet.
- I will have a hard time memorizing the five characteristics that define a DFA. I have a few friends in the course that I can study with.
- I read this section after class, it was useful because it reassured everything that I learned in lecture.

Question 2. Make sure you can create and save a finite automaton in JFLAP by reproducing the following diagram of a DFA that recognizes the language of binary strings ending with 1. (Example 1.7 in the text.)

This JFLAP question will be autograded, so your filename must be in the following format exactly:

`1-2-[yourscuusername].jff`