CSCI 2670 Class exercise 1 Spring 2021

Use Grafstate^{TM} (`https://grafstate.com`) to complete the following assignment. Write your answers using the Grafstate Shell and paste your answers to eLC as a text file.

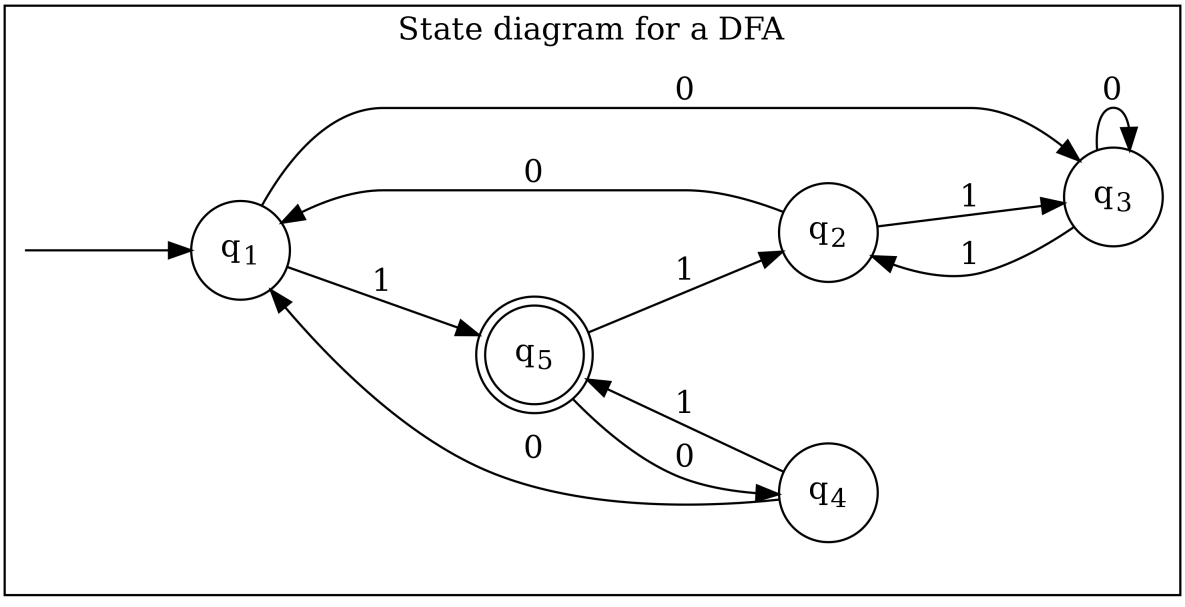
1 Learning objectives

By the end of this assignment, you should be able to do the following:

- Give a formal description of a DFA given the state diagram as a visual.
- Identify strings that are accepted by the DFA and strings that are rejected by the DFA.
- Given the description of a simple language, construct a DFA that recognizes that language.
- Analyze the code for a DFA to describe the contributions of the states to the logic of the machine.

2 Exercises

Consider the following DFA over the alphabet $\Sigma = \{a, b\}$:



1. List 5 strings that are accepted by this machine.

2. List 5 strings that are not accepted by this machine.

3. Write Grafstate code to create this machine.

4. Create a DFA that recognizes the language of binary strings having a length that is a multiple of 3. Describe your machine logic for each state that you use. You can use comments in your Grafstate code. Each comment must be on 1 line that begins with `/*` and ends with `*/`.