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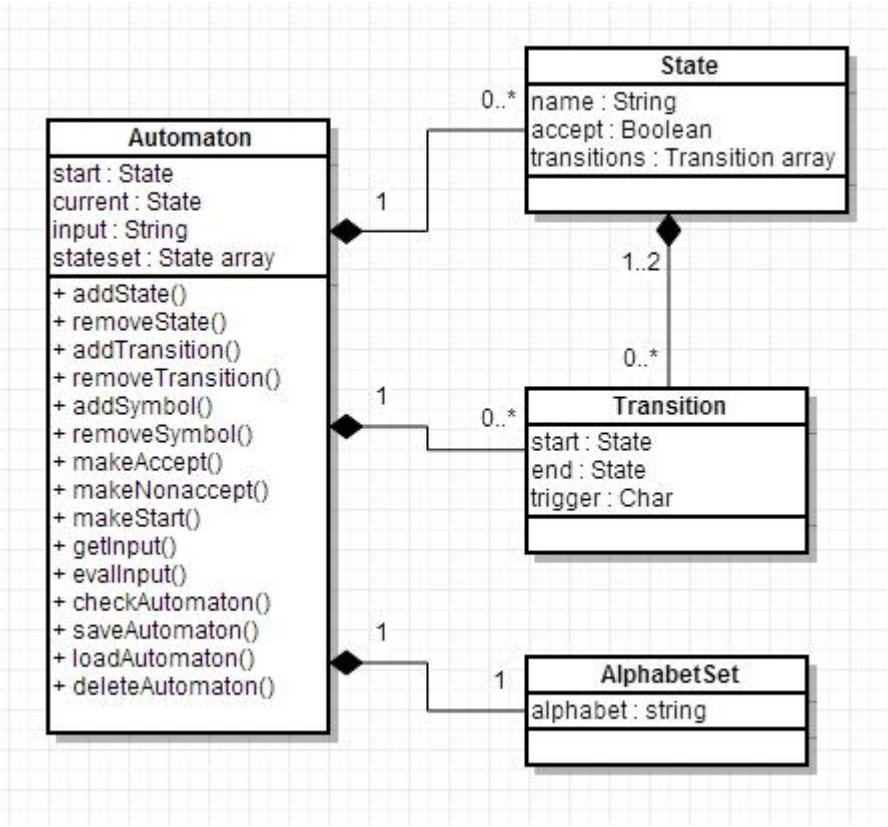
Project Milestone 3 – class diagram



The Automaton class acts as the “main menu” for user manipulation. It has the methods to create, remove, and alter the components of what makes an automaton : states, transitions, an alphabet, which states are acceptance states, and which state is the starting point. The Automaton class keeps track of its starting state and current state, the input string it will run, and all of its individual states. Each individual State will contain its name, whether or not it accepts, and keeps track of the Transitions which start from it. The Transition class holds the information of its starting state, destination state, and the trigger character from the alphabet. The AlphabetSet class is essentially a single string that contains every character in the automaton’s alphabet. This string has characters appended and removed based on the user adding and removing characters from the automaton’s alphabet.

- Each State, Transition, and AlphabetSet class exist solely in the Automaton instance. Therefore they have a composition relation with a single Automaton class.
- An Automaton only has a single set of accepted characters, and so a single AlphabetSet.
- An Automaton can have 0 to many States because it starts out with no States initially. However, at least one state is needed for the Automaton to have a starting point.
- An Automaton can have 0 to many Transitions. A State can also be involved in 0 to many Transitions.
- Each Transition can involve 1 or 2 States (the starting and ending states could be the same).