Assignment 2

Finite Automata
Due Wednesday, March 24, 2021

1. (60%) Consider the following nondeterministic finite automaton,

States \ Input	a	b	ε
1			{2, 6}
2	{2, 3}	{4}	
3	{5}	{4}	
4	{7}	{2, 8}	{5}
5			{6, 8}
6	{7}	{8}	
7			{10}
8		{9}	
9	{9}		
10		{10}	

where state 1 is the start state and states 9 and 10 are final states. The blank entry in the table represents the empty set. Simulate this NFA using the ε–closure and move functions with respect to the input strings aabba and aabab.

2. (40%) Consider the following deterministic finite automaton,

States \ Inputs	a	b
1	2	3
2	2	4
3	5	7
4	8	7
5	5	8
6	2	6
7	7	
8		8

where state 1 is the start state, and states 7 and 8 are final states. Simulate this DFA using the move function with respect to the input strings aabba and aabab.

To turn in this assignment, upload a pdf file hw2.pdf that contains the solutions for this assignment to the eCourse2 site.