

# Quiz 11 - RE to NFA

## Instructions:

- Your submissions must be submitted in the Quiz11 directory of your Quizzes directory in your GitHub repository.
- Cheating of any kind is prohibited and will not be tolerated.
- Violating and/or failing to follow any of the rules will result in an automatic zero (0) for the lab.

TO ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTOOD THE INSTRUCTIONS ABOVE, AT THE BEGINNING OF YOUR SUBMISSION(S), ADD A COMMENT THAT CONSISTS OF YOUR NAME AND THE DATE

## Grading

Question	Maximum Points	Points Earned
1	0.1	
1	0.1	
1	0.1	
1	0.1	
1	0.1	
<b>Total</b>	0.5	

Question 1: For the regular expression  $\varepsilon$ , what is  $F$  of an NFA  $(Q, \Sigma, \delta, q_0, F)$  that is equivalent to it?

Question 2: For the regular expression  $\mathbf{a}$  where  $\mathbf{a} \in \Sigma$ , what is  $Q$  of an NFA  $(Q, \Sigma, \delta, q_0, F)$  that is equivalent to it?

Question 3: For the regular expression  $\emptyset$ , what is  $\delta$  of an NFA  $(Q, \Sigma, \delta, q_0, F)$  that is equivalent to it?

Question 4: For the regular expression  $\Sigma$  where  $|\Sigma| = 4$ , what is the minimum number of states required to construct an equivalent NFA?

Question 5: For the regular expression  $\mathbf{a}^+$  where  $\mathbf{a} \in \Sigma$ , what is  $\delta$  of an NFA  $(Q, \Sigma, \delta, q_0, F)$  that is equivalent to it and has  $|Q| = 2$ ?