CSc 345: Analysis of Discrete Structures
Spring 18 (Lewis)

Week 10 Quiz

Solutions

Name: ___________________________  NetID (email): _______________________

WARNING
This test is double-sided. Make sure to notice the problems on the back of each page!

Fill in your name and NetID.
Please do not open the quiz until I tell you to do so.

**Directions:** Answer the following questions to the best of your ability. When appropriate, we encourage you to show your work, to help us understand your thought process. Quizzes count toward your grade; please take them seriously.
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1. For each Splay Tree below, splay the specified node, and then draw the new tree.

(a) Splay node C.

\[
\begin{array}{c}
\text{A} \\
\text{B} \\
\text{C}
\end{array}
\]

Solution:

\[
\begin{array}{c}
\text{C} \\
\text{B} \\
\text{A}
\end{array}
\]

(b) Splay node B.

\[
\begin{array}{c}
\text{A} \\
\text{C} \\
\text{B}
\end{array}
\]

Solution:

\[
\begin{array}{c}
\text{B} \\
\text{A} \\
\text{C}
\end{array}
\]

(c) Splay node A.

\[
\begin{array}{c}
\text{B} \\
\text{A} \\
\text{C}
\end{array}
\]

Solution:

\[
\begin{array}{c}
\text{A} \\
\text{B} \\
\text{C}
\end{array}
\]
(d) Splay node 94.

Solution: First Step (students don’t need to draw this)

Final Step (students must draw this)