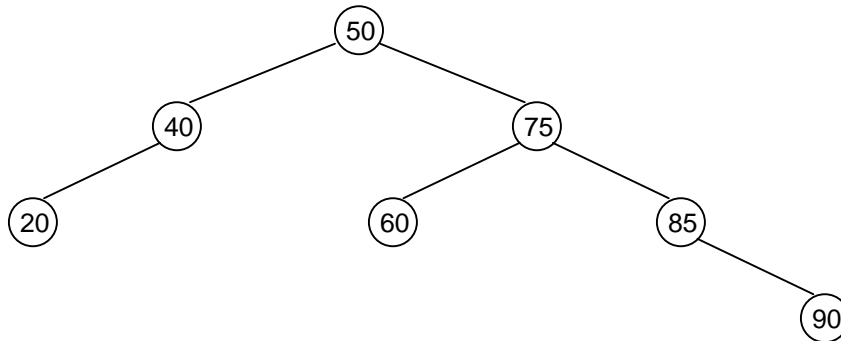


Instructions: This assignment covers some of the basic AVL tree operations, and is intended to help you prepare for implementing the first major project.

You must submit your solution in MS Word format. You may draw the trees with the MS Word drawing tools (used to prepare this document). If you prefer, you may use another vector drawing tool and paste the resulting diagrams into a Word document (be careful not to paste a link to an external file).

For each of questions 1 through 6, start with the following AVL tree:

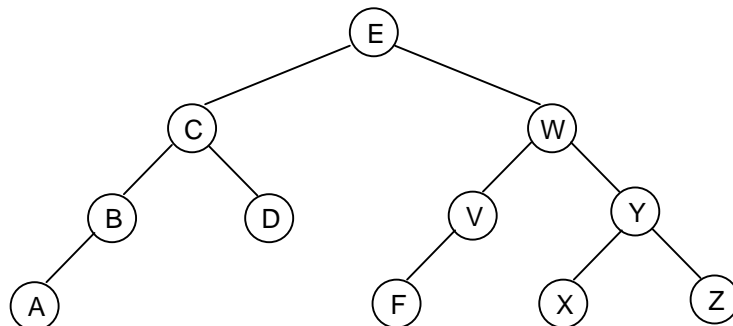


- 1) Label each node in the AVL tree given above with the correct balance factor. Use '/' for left-higher, '\' for right-higher, and '-' for equal-height.

For questions 2 through 6, draw the final AVL tree that would result from performing the indicated actions on the AVL tree given above (i.e., always start with the given tree, the questions are not accumulative). Be sure to show both the data value and balance factor for each node.

- 2) Insert the key 10.
- 3) Insert the key 95.
- 4) Insert the key 80, and then insert the key 77.
- 5) Insert the key 80, and then insert the key 83.
- 6) Insert the key 45.

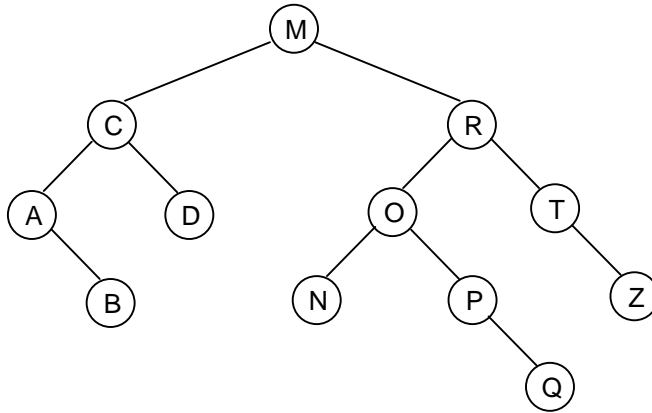
For each of questions 7 through 9, start with the following AVL tree:



For questions 7 through 9, draw the final AVL tree that would result from performing the indicated actions on the AVL tree given above (i.e., always start with the given tree, the questions are not accumulative). Be sure to show both the data value and balance factor for each node.

- 7) Delete the key D.
 - 8) Delete the key V and then delete the key F.
 - 9) Delete the key E.
-

For question 10, start with the following AVL tree:



- 10) Delete the key T.