Seminar #5

Strategy: problems should be solved pencil & paper based. All questions, analysis and tracings are assumed to be finalized BEFORE running the programs.

Objectives:

- Processing trees
- Traversals analysis
- Efficiency analysis
- Improve performance by code analysis

Take home knowledge:

The ability to make the analysis and improve performance.

1. (Warm-up exercise) Compute the height of a B(S)T.
2. In a BST do a transformation such that the height of the left subtree is >= than the height of the right subtree.
3. For a BST whose elements are ordered lists (Q: what structure is this?) do the following:
   a. Search for the first (and only the first) occurrence of a given element.
   b. Generate the list of all the atomic elements from the initial structure with append.
   c. Generate the list of all the atomic elements in the initial structure with difference lists.
   d. Repeat steps a to c for the case when the lists (in the nodes of the tree) are incomplete lists.
   e. Repeat steps a to c for the case when the tree is an incomplete structure (ended in vars).
   f. Repeat steps a to c in case both tree and lists are ended in variables.

Homework:

All type of lists transformations