Notes lecture 13

AVL Trees

* **Definition**: for any node x of the AVL tree, the difference between the height of the left and right subtree of x is 0, 1 or -1 (*balancing information*)
* Representation:

A close-up of a computer code

Description automatically generated

* Height:
  + empty tree: -1
  + 1-node tree: 0
* Balancing of a node:
  + Height(left\_child) – Height(right\_child)
* Rotation (apply rotations from bottom to the top, from the first imbalanced node)
  + Simple – if imbalance in exterior vertices

A diagram of a diagram

Description automatically generated A diagram of triangles and circles

Description automatically generated

* + Double – if imbalance in interior vertices

A diagram of a triangle with circles and letters

Description automatically generated A diagram of triangles and circles

Description automatically generated