**CS3100 Notes**

Space Complexity: An algorithm's ***space complexity*** is a function, S(N), that represents the number of fixed-size memory units used by the algorithm for an input of size N. Ex: The space complexity of an algorithm that duplicates an array of numbers is S(N) = 2N + k, where k is a constant representing memory used for things like the loop counter and the two array pointers.

Space complexity includes the input data and additional memory allocated by the algorithm. An algorithm's ***auxiliary space complexity*** is the space complexity not including the input data.

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Growth Rate: ***Asymptotic notation*** is the classification of runtime complexity that uses functions that indicate only the growth rate of a bounding function

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Balancing AVL Trees:

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BST Order Traversals:

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BST Attributes:

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Depth-First Search: Breadth-First Search:

A diagram of a network

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