CSC263

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1 Review

Abstract Data Types	**Data Structures**
specification	implementation
objects	data
operations	algorthims

Analysis - Runtime/complexity

- Worst-Case — Upper Bounds - O
- Best-Case — Lower Bounds - Ω
- ??? — Tight Bounds - Θ

When analyizing an algorthim, we are counting by steps. Steps are represented by any constant time operations, such that

$$t_A(x) = Number - of - constant - operations$$

To be able to prove an upper bound, you need to compare two functions: usually its $t_A(x)$ compared to runtime. but runtime can have different values depending on the input size, and that's where worst and best-case scenarios come into play. For a worse-case analysis, you take the largest possible value of runtime for a given input size, and the best case takes the smallest. can we use this fact in proving the tight bound?