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4/12/2022
Lab 06

Prompt:

The two data structures most commonly used to implement symbol tables in production compilers are binary search trees and hash tables. What are the advantages and disadvantages of using each of these data structures for symbol tables?

Answer:

The advantages of using a binary search tree is its implementation. They are very easy to implement and have a decently nice average case run time. We can also get all keys in sorted order in a BST very easily. The disadvantage of a binary search tree is their look up time. Hash tables are the most common way of scope checking. Hash table lookup can be performed in constant time which is a huge advantage. One downside of hash tables could be static implementation of the size in some languages. There are ways around this such as creating a function that will automatically create a new hash table with more room.