Lab 4 Frank Mitarotonda

8.1:
Binary Search Trees are good because the concept is widely known and easy to understand. However, given a large symbol table a binary search can become extremely inefficient because it could take a very long time for search to go through every symbol in order to match an identifier name defined by the programmer. Has Tables are the best implementation and the most popular when it comes to symbol tables. Hash tables with proper collision detection can handle large symbol tables efficiently and in a short amount of time.

8.3:
One way to handle multiple scopes is to establish the rule if a variable is declared in more than one scope, then that variable will always be referenced in the innermost scope, meaning the last value declared for that variable will be used. Another method is only allowing for new declarations to occur in the current scope. Looking at figure 8.1 using the first method the variables x, w, and z will be referenced to the values last declared. Looking at the second method these variables could only be referenced to within the first block.