**Reviewing Different Symbol Tables**

**Problem Statement** - Study the performance of a client like LookUpCSV in a scenario where performance matters. Specifically, design a query-generation scenario instead of taking commands from standard input, and run performance tests for large inputs and number of queries.

**Approach -** Initially start by building the main method in the solution class to read the different types of symbols tables.

Write up a switch case conditional for executing all the symbol table.Here, we are implementing BST, LinearProbingHashST, SequentialSearchST, BinarySearchST, SeparateChainingHashST, RedBlackBST.

**Datasets -** The datasets used for conducting this review are listed below :

1. Calories - this contains food as the key and measure as value. A total of 961 CS Values.
2. Upc-items - this contains a 13 digit UPC code as the key and size or weight as value. A total of 1058242 CS Values.
3. Surnames - this contains name as the key and rank as value.A total of 151671 CS Values.
4. Bnc-wordfreq - this contains ranks as the key and frequency as value. A total of 6318 CS Values.

**Procedure -**

Start by taking a CSV file with size increment in powers of 10’s or 100’s. For each of the files note down the time to insert an element into the symbol table and searching an element in the symbol table. Respective values for each symbol table should then be plotted against either a bar or a pie chart to discern the difference in execution time for each symbol tables process.

**Analysis -**

When the size of the dataset is minimum then binary search st and sequential search st are optimal for use even though, their execution time is more than other symbol tables.Whereas when the dataset size is more than one hundred thousand then RedBlackBST and LinearProbingHashST are optimal for use.

**Reference -**

[**https://www.kaggle.com/**](https://www.kaggle.com/)

[**https://algs4.cs.princeton.edu/code/**](https://algs4.cs.princeton.edu/code/)

**Conclusion -** Depending on the size of the dataset the appropriate symbol tables need to be used for effective reduction in time and space complexities.