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Assignment 5 - Analysis of Complexity

The overall time complexity of the program is O(N\*log(N)).

Main function:

* The readCSV function loops over the cells in the .csv file where O(N) where N is the number of lines in the file.
* calculateAverage: O(M) where M is the number of elements in the exchangeRates vector of pairs.
* createNodes: O(M) where M is the number of elements in the exchangeRates vector of pairs.
* Inserting nodes into the heaps:
  + insertKey: calls heapifyUp:
    - heapifyUp: O(log N) where N is the number of elements in the heap.
* Extracting min and max elements: O(log N) where N is the number of elements in the heap.
* maxSubsequentSum: O(M) where M is the number of elements in the exchangeRates vector of pairs.

The overall complexity of the program is O(N\*logN) because the complexity of building a heap (insertion of keys O(log N), and heapifying) and extracting the top N elements dominate the overall complexity in comparison to the other functions.