Project Title: Commodity Information

Project Description (<=150 words):

This application would allow users to explore current and historical information about commodity such as oil, steel or plastic. The data of each commodity is represented in time series. The data set contains commodity name, date, commodity id, price, news and additional metadata like related commodity, market productivity and short descriptions. Users will be able to select search criteria which consist of date range, commodity id or commodity name to search different commodity. The system will then display the corresponding commodity that fit the search criteria. Users will be able to scroll through the information of commodity within the date range or adapt the search criteria at any time with the app. Primary users of the app will be people who want to track information of commodity.

Planned Data Structure/Algorithm and Justification (<=75 words):

The application would be implemented with a nested Hash Table Data Structure. For the first level, the key would be commodity id. For the second level, the key would be date. When collision occurs, use chaining to put data with same hashcode in linked list. When load capacity reaches 80%, the hash table should double its size.

Proposed Unit Tests (<= 20 words each):

1. Check whether hash table returns right data of corresponding commodity id.
2. Check whether hash table returns right data of corresponding date.
3. Check whether the chaining linked list addresses the collision correctly.
4. Check whether the hash table resizes correctly in first level.
5. Check whether the hash table resizes correctly in second level.