Data Sample - Love Poems

Title + Author   –>   unique key
Year
Country of origin
Full Text of poem

Question: What techniques to build a search engine?

Inverted Index for Information Retrieval

Forward index: document(s) - > contents
Inverted index: contents -> document(s)

Question: How to use a **content** as an **index of an array**?
(Strings cannot be used as the indices of arrays in Java language.)

WordID Object

```
public class WordID {
        private String word;
        private int id;

        public WordID(String word){
                this.word = word;
                this.id = 0;    // static int index;
        }
}
```

Question: How to map unique keyword to unique ID?   **HashTable<WordID>**

Next question:
What is the best data structure to use for an array of a set of LovePoem objects?

ArrayList<BST<LovePoem>>

- ArrayList is a random access, variable-size list data structure that allows elements to be added or removed easily

- BST provides an efficient insertion, deletion, and searching

- The set of elements in BST is available in sorted order

Next question: Other major data structure applied?   HashTable<LovePoem>

- HashTable provides an efficient searching to retrieve value using its hashed key.

Extension:
Create an interactive data processing system, with **a menu of options** provided to the user.