

Document Overview:

This document is intended to serve as a guide to other documentation files and the project on the whole. There are 4 main modules in the project:

1. *Tree Generation* (***treeGen.py***)

This is the main module where the bulk of code resides, its main task is to take input from the files in the Tree Generation directory and process the data and create a tree by utilizing the other modules like *minPrefixGen.py* and *bloomfilter.py*. In the end, it searches for elements as mentioned in *query.txt*. Once the search is complete it displays the result on the console.

2. *Minimum Prefix Generation* (***minPrefixGen.py***)

This is a sub-module which mainly takes the data list and creates the best Minimum Prefix Set which can represent all the data elements.

3. *Bloom Filter Creation* (***bloomfilter.py***)

This is again a sub-module which deals with the creation of bloom filter to each node of the tree generated using the *treeGen.py* module. This is where the data is encrypted and hidden from the Cloud Service Provider.

4. *Searching of Elements* (***searchElement.py***)

This is another main module which deals with the search process, the algorithm present in this module tries to match the trap door with the bloom filter obtained from the *treeGen.py* module. Once, it finds it in the bloom filter it responds back to the *treeGen.py* where the result set is generated.