Problem 7:Request Routing in a web server using trie

In this problem, we create three classes Router, RouterTrieNode and Router Trie. The Router class stores information about the given path and stores it. RouterTrieNode class will create a Node such that it stores a router and its children. Router Trie is a Trie implemented using dictionary and nodes are stored in form of nested dictionaries.

Time complexity:

RouterTrieNode class :Insert() method has complexity of O(n) ,where n is the number of segments in the given url path.

RouterTrieNode class : Find() method has complexity of O(n),where n is maximum length of urls already stored.

Space complexity:

O(n): We keep a dictionary which increases in size with sub-segments of input url.