Trie Search

contains(T, key):
  if T is null:
    return false (for Set) or null (for Map)
  if key is empty string:
    return T.terminates (for Set) or T.value (for Map)
  return contains(T.children.get(key[0]), rest(key))

Examples:
- Search for ‘bat’
- Search for ‘by’
- Search for ‘bag’
Trie Insert

Basic idea:
- Search along the path specified by key
- Create new TrieNodes along the way if needed
- Upon arriving at the final TrieNode
  - set terminates to true (for Set) or
  - set value to specified value (for Map)

Examples (assuming Set ADT):
- Insert ‘bat’
- Insert ‘by’
- Insert ‘bag’
Trie Delete

Basic idea:
- Search for key
- If not found:
  - Do nothing!
- If found:
  - Set terminates to false (for Set) or value to null (for Map)

Deleting by toggling a flag rather than freeing memory is sometimes called "lazy deletion."

Delete (assuming Set ADT):
- Delete ‘bat’
- Delete ‘bits’
- Delete ‘by’