|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TAD Chained Hash Table | | | | |
| HashTable = {(key1, value1), (key2, value2), ..., (keyN-1, valueN-1), (keyN, valueN)} | | | | |
| Inv.: { key-x ≠ key-y → value-x ≠ value-y} | | | | |
|  | Operation | Input | Output | Type |
| 1 | HashTableChaining(int capacity) | int capacity | Instance of HastTable with determinate capacity | Constructor |
| 2 | put (K key, V value) | K key, V value |  | Modifier |
| 3 | get(K key) | K key | V | Analyzer |
| 4 | containsKey(K key) | K key | boolean | Analyzer |
| 5 | remove(K key) | K key |  | Modifier |
| 6 | length() |  | int | Analyzer |
| 7 | getIndex(K key) | K key | Int | Analyzer |

|  |
| --- |
| HashTableChaining(int capacity) |
| Type: Constructor |
| Create an instance of HashTableChaining with determinate capacity |

|  |
| --- |
| put(K key, V value) |
| Type: Modifier |
| Adds the key-value pair to the hash table. If an entry with the same key already exists, the new value replaces the existing value. |

|  |
| --- |
| get(K key) |
| Type: Analyzer |
| Return the value of a key if exist else return -1 |

|  |
| --- |
| contains(K key) |
| Type: Analyzer |
| Validate if the key already exists on the table |

|  |
| --- |
| remove(K key) |
| Type: Modifier |
| Removes the entry with the specified key from the hash table if it exists. |

|  |
| --- |
| length() |
| Type: Analyzer |
| Return the size of the table |

|  |
| --- |
| getIndex(K key) |
| Type: Analyzer |
| Return the position of the key |