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| --- | --- | --- |
| Hash Table data structure  **Name: HashTable** | | |
| **Definition:**  Value is the list’s type.  Key is the value’s identifier | | |
| **Input:** | | |
| **Invariable:** | | |
| **Operations** | | |
| **Name** | **Input** | **Output** |
| createHashTable  **constructor** |  | Creates a new HashTable |
| insert  **modifier** | HashTable, Key, value | HashTable within value |
| remove  **modifier** | HashTable, Key | Removes the value associated with the key. |
| Search  **analyzer** | HashTable, key | Value associated with the key |

Operations

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| --- | --- | --- | --- |
| **Operation:**  createHashTable | | | |
| **Operation type:** constructor | | | |
| **Input** | **Output** | **Precondition** | **Postcondition** |
|  | Creates a new hashTable | true | Creates a hashTable empty |
| Creates a new hashTable which can be used. | | | |

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| --- | --- | --- | --- |
| **Operation:**  Insert | | | |
| **Operation type:** modifier | | | |
| **Input** | **Output** | **Precondition** | **Postcondition** |
| hashTable, key, Value | hashTable within the new key and value | hashTable must be initialized | Adds the new value at the key position |
| Adds the value given to the hashTable | | | |

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| --- | --- | --- | --- |
| **Operation:**  Remove | | | |
| **Operation type: modifier** | | | |
| **Input** | **Output** | **Precondition** | **Postcondition** |
| hashTable, key | hashTable without the element associated to the key | hashTable must be initialized | Removes the value associated to the key |
| Removes the value associated to the key from hashTable | | | |

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| --- | --- | --- | --- |
| **Operation:**  Search | | | |
| **Operation type:** analyzer | | | |
| **Input** | **Output** | **Precondition** | **Postcondition** |
| hashTable, key | The value associated to the key | hashTable must be initialized | Gets the value associated to the key |
| Gets the last value associated to the key | | | |