

### 3. Design Decisions Details

#### a. Class Student

##### Constructor

- If parameters are passed, assigns passed parameters to number and name, else, assigns 0 and empty string to number and name, respectively.

##### Destructor

- Assigns 0 and empty string to number and name, respectively.

##### Function Examination

Since both getter functions just returns private member variables (no change in object), "const" keyword has been used to both functions.

#### b. Template Class HashTable

##### Constructor

- Dynamically allocates memory for array of class T

##### Destructor

- Deallocates the memory assigned to array

##### Function Examination

Function	Parameter Examination
hash_1	k (dtype: unsigned int): key to be hashed

#### c. Class OpenHashTable

##### Constructor

- Dynamically allocates memory for Student array

##### Destructor

- Deallocates the memory assigned to the array

##### Function Examination

Function	Parameter Examination
insert	student_id (dtype: unsigned int): key to be inserted student_name (dtype: const string): associated last name
search	student_id (dtype: unsigned int): key to be searched
remove	student_id (dtype: unsigned int): key to be deleted
find	student_id (dtype: unsigned int): key to be found
hash_2	k (dtype: unsigned int): key to be hashed

\*Parameters that are passed using "const" keyword have no change in data during the function operation

#### d. Class OrderedHashTable

##### Constructor

- Dynamically allocates memory for vector<Student> array

##### Destructor

- Clears all keys in each vector and swaps with an empty vector
- Deallocates the memory assigned to the array

##### Function Examination

Function	Parameter Examination
insert	student_id (dtype: unsigned int): key to be inserted student_name (dtype: const string): associated last name
search	student_id (dtype: unsigned int): key to be searched
remove	student_id (dtype: unsigned int): key to be deleted
print	position (dtype: int): position of the chain to be printed

\*Parameters that are passed using "const" keyword have no change in data during the function operation