**Programming Project Report**

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**Academic Integrity Statement:** I pledge that I have neither given nor received unauthorized help on this programming assignment.

**Problem Statement:**

The goal of this programing assignment was to create a program that takes in a list of values then distributes it to multiple hash tables. Then the user can update the list which updates the name of a person to the new values the user inputs. Or they could remove an item from the hash table, then print out the hash table to view what contents belong to each table. When the hash tables are printed it tells how many collisions there are in a hash table. Then the user can insert new data into the set. Finally the user could search through the hash table for a specific name of a person.

**Design:**

The design of this program was pretty straightforward. First a student node class would be created which would handle each individual data package given. Then the Student-List class was created which chains individual student nodes into a list. Finally the Student-Hash class would be responsible for putting the Student-List at given indexes.

**Implementation:**

The implementation of this program went as follows. First the Student node class was created such that new nodes could be created with specific data assigned to each node. This was responsible for the getters and setters of specific data like Gender, Name, etc. Next was the Student-List class which generates the individual list of the hashes. Finally the Student-Hash is responsible for assigning the individual student list to their respective indexes. Then in main a read file function was generated to read in the provided txt file into the hash table. Then it enters into a switch statement which acts like the terminal menu for the user to select the previously mentioned options.

**Testing:**

The testing of this code consisted of first making sure the switch statement only took in integers as its delimiter for the choices. Then each method was checked to make sure a user could update the hash table with a new value, delete any value, search for any value, and print all the values. There were errors before when a user would search for a person who was not in the hash table, but with some statement checkers it now prints a notice that the given name could not be found.

**Conclusions:**

The result of this project was a overall success as the user was able to read in the given txt file, insert into the table, update the table, delete from the table, search the table, and print the table. With these methods working how they were intended this project can be labeled a successful project. If this project were to be continued then a method would be implemented to allow the user to insert their own created file and combine the two files into a hash table. Then find a way to store the data back into a txt file. This project took about 6 hrs to compete with the report.