Hash Table

In this lab you will create a hash table that uses Linear Probing Open Addressing using unordered map key and the provided hash function.

The hash table will use the Standard Template Library (STL) through class specialization to implement the hash table data structure.

Use and modify the assignment provided main.cpp file to implement the assignment solution.

This solution must be modified per the directions below.

The Algorithm

You must modify the main.cpp to read in values from a file to fill in the hash table.

The provided text file is named **nameids.txt.**
This file should be placed within the folder that contains the main.cpp file.

Use ifstream to read the input text file that has lines in the following format:

firstname lastname id
:

Where first name and lastname are strings and id is an unsigned int.
Each item on a line must be separated by at least 1 blank.

Do not perform error checking on the text file contents.
Your program may assume that the file is correctly formatted and the contents are valid inputs.

Example:

Harry Potter 078459864
Miles Davis 999777666
Beyoncé Knowles 666888999
Tupac Shakur 777889900
50 Cent 325817662
        :

You must check to see if the text file was found and display a message if the open failed.
The names in the text file are used as pair keys to submit to the provided hash function to fill the hash table.

Look for the $$ in the comments to see where to instrument in code to complete the assignment.

Once the hash table is filled, you must display the names and ids in the hash table.

Then write source code to test the hash table by performing test key look ups and displaying the keys and the resultant ids.
Your program must test at least 6 valid key lookups and must include at least 2 lookups that are not found in the table.

See the example output below to have your program produce the correct results and produce the correctly formatted output.

```
Gal             Varsano         77789
Marion          Morrison        40561
Park            Jae-sang        88888
Stephanie       Clifford        40562
Melania         Knavs           99999
Armando         Pere            10101
Peter           Hernandez       77777
Monica          Lewinsky        69696
Stefani         Germanotta      11111
Marshal         Mathers         33333
Robyn           Fenty           77777
Hillary         Rodham          44444
Barry           Soetoro         66666
Michelle        Robinson        12121
Aubrey          Graham          23232
Richard         Starkey         89898
Curtis          Jackson         21212


Robyn           Fenty           77777
Aubrey          Graham          23232
Jerry           Mathers         There is no hash table entry
Betty           Boop            There is no hash table entry
Natasha         Romanoff        There is no hash table entry
Press any key to continue . . .
```