**Programming Assignment 6**

Due by November 8, 9:00 PM

1. Implement `add()`, `search()`, `delete()` and `print_dist()`, and submit "backend-hash.c." DO NOT CHANGE ANYTHING ELSE.

2. For this assignment, implement the usual address book using hashing with chaining. Note that the "P" (print) command does not print out the contents of the address book now. (Think about why.) Instead, it prints out the number of keys in each chain. For example, the output

   ```
   0:0 1:0 2:2 3:0 4:0 5:2 6:1 7:0 8:0 9:0 10:0 11:0 12:0 13:0 14:0 15:0 16:0
   ```

   shows that a linked list of size 2 is pointed by `hash_table[2]`.

3. Duplicate names are allowed, and `add()` puts the newly-created node in front of the linked list.

4. The functions `search()` and `delete()` print out the number of key comparisons made to perform the operations. Note that they do even if the operations were not successful. (Why?)