Exercises for Lab 7:

These must be completed and shown to your lab TA either by the end of this lab, or by the start of the following lab:

1. Download the (incomplete) open-addressing hash table code, `hash.cpp` and `hash.h`, found in the Lab 07 code folder on UBC Connect.

2. Complete the following functions in `hash.cpp`:

```
void Hash::qinsert(int k) {
  // Insert k in the hash table.
  // Use open addressing with quadratic probing and hash(k) = k % m.

void Hash::linsert(int k) {
  // Insert k in the hash table.
  // Use open addressing with linear probing and hash(k) = k % m.
```

   You must complete these functions so that they call `tallyProbes` on every successful insertion, with the number of probes required for that insertion.

3. Run a few experiments to see how the average number of probes per insertion differs when using quadratic versus linear probing. Note that `hash q 900000 1000000` will insert 900,000 random keys into a hash table of size 1,000,000 using quadratic probing, while `hash 900000 1000000` will do the same using linear probing.

   Which uses fewer probes?

4. Be sure to show your work to your TA before you leave, or at the start of the next lab, for your attendance/participation credit.