CSC207.01 2013F, Class 46: Implementing Dictionaries with Hash Tables

Overview

- Preliminaries.
  - Admin.
  - Questions on the exam.
- An introduction to hash tables.
- Hash functions.
- An exercise.
- Hashing in Java.
- Handling collisions.
- Handling removal.

Preliminaries

Admin

- I’m returning the exam redos. I’m not sure that it was worth allowing you to redo the exam. It looks like those who did so spent a lot of time on it, and it didn’t make a big difference in grades. It also took a lot of my time and mental energy.
- Further thoughts on unit tests: A good unit test does two things.
  - It tells you that your code does not work correctly.
  - It gives you enough information to help diagnose the problem.
- Congrats to DG.
- Upcoming extra credit opportunities:
  - "Data Sovereignty: The Challenge of Geolocating Data in the Cloud", November 25, 4:15 JRC 101 TODAY!
  - "Gold Fever" by Andrew Sherburne ’01 or so, 7:00 p.m., Monday, November 25, ARH 302 TODAY!
  - Tuesday, November 26, 4:15 p.m., JRC 209 a gaming event with the game [d0x3d!]
  - Any self-care week activity (after Turkey break)

Questions on the Exam

Do you want more errata?
No. There’s way too much as it is. And yes, you are up to one letter grade of extra credit. (I will, however, be capping scaled grades at A+.)

Are you going to penalize the bozos who turned in the prologue Friday, but after 5pm?

Why do you folks put me in these situations? What do you think I should do?

If we borrow code from a homework assignment, should we cite our colleagues?

Yes.

Can you give me some hints on problem 1?

See the white board.

An introduction to hash tables

Hash functions

An exercise

Hash your first name (in a table of size 30)

B: 2   G: 7   L: 12   Q: 17   V: 22
C: 3   H: 8   M: 13   R: 18   W: 23
D: 4   I: 9   N: 14   S: 19   X: 24
E: 5   J: 10  O: 15  T: 20  Y: 25

SAMUEL: 19 + 1 + 13 + 21 + 5 + 12 = 71 => 11
WILLIAM: 23 + 9 + 12 + 12 + 9 + 1 + 13 = 79 => 19
FRED: 6 + 18 + 5 + 4 = 33 => 3

Hashing in Java

Handling collisions

Handling removal

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