OOP – The conclusion

Lecture 25

Quiz

- 50%+ on HW4 material.
- 25% on Matlab (basics done in class and lab)
- <25% on simple OOP material from last few days.
- Maybe basic code reading question
  - Like quiz1

HW4 notes

- As per e-mail (and class discussion) recall that like addition and multiplication AND (*) binds tighter than OR (+)
- When adding two 8-bit fixed-size numbers, the result must be the same size
  - Overflow is when the result is out of the range of representation.
- HW4 answers posted.
  - Typo in answer to last truth table on page 3. Will post fix by noon today.

Where we are

- From a programming language viewpoint, there are only a few things left to introduce
  - Vectors
  - Enumerated types
  - Pointers (only a little)
  - Operator overloading
- And a few things to spend time to clarify/expand on
  - Organization of a program
    - (Using header files, function prototypes)
  - Characters

Non-C++ language things

- Data structure design
  - Use of stacks and queues
  - Smart arrays
- Some more on complexity
  - Better sorts
- Matlab
  - Much more on using it.

Misc.

- E-mail
  - I'm behind.
  - I should be able to catch up today

Today

- Another shot at complex numbers and classes
- Why classes
- Some stuff on characters
  - Bits is bits

Code example

Why classes? (again)

- Consider our Cmpx code
  - The class is self-contained (like our string class)
- But not the best of all possible examples, because data makes sense to be able to access directly.
  - Let's work on designing a "time" class.
  - Want time to be stored in hours, minutes and seconds
  - Want to be able to add and subtract time.
  - What to be able to ask user for time and print time.
  - At all times want to be sure sec<60 and min<60

Chars

- ASCII
  - Simply a mapping of 8-bit chars to certain symbols.

Base10	Base 2	symbol
097	01100001	a
098	01100010	b
099	01100011	c
100	01100100	d
101	01100101	e
102	01100110	f

Note

- int bob='a';
  - bob is 97.
- int bob='a'+3
  - bob 100.
- char bob='a'+3;
  - bob is still 100 but..
    - If you print it you get a 'd'