CS 162, Lecture 9: Intro to the Big 3

20 April 2018
Destructor

• Deletes the object
• Will be automatically created if one is not supplied
  • Will not handle dynamic memory
• ~Class_Name(); //no return type, no parameters, only one allowed
• Called when the object goes out of scope
  • When the function ends
  • When the program ends
  • A block containing local variables ends
  • A delete operator is called
Shallow Copy vs. Deep Copy

• Shallow:
  • Copy the contents of member variables from one object to another
  • Default for assignment operator and copy constructor

• Deep:
  • Copy what each member variable is pointing to so that you get a separate but identical copy
  • Has to be programmer specified
Copy Constructor

• Constructor that has one parameter that is of the same type as the class
  • Has to be call be reference (normally const)
  • Allows for distinct copies, changes to one does not impact the other
  • Called automatically in three cases:
    • When a class object is being declared and initialized by another object of same type
    • When a function returns a value of the class type
    • Whenever an argument of the class type is “plugged in” for a call by value parameter
Assignment Operator Overload

• Predefined assignment operator returns a reference
  • Allows us to chain assignments together \( a = b = c \)
  • Need to make sure the assignment operator returns something of the same type as its left hand side

• Overloading assignment operator
  • Must be a member of the class