Final Exam Review

- In general know all bold terms in each section
- Understand all Participation Activities and Challenge Activities.
- Understand any programming you did in Homework, Lab Work, and Challenge Activities. Be able to replicate it.
- The exam is made up of: short answer (104 points), hand execution and analysis of code (36 points), writing code and design (58 points), writing your name (2 points).

Graphical User Interfaces – 14 points
- GUI layouts
- Programming Paradigms
  - Imperative
  - Procedural
  - Object-oriented
  - Event-driven
- Event-driven Programming
  - Event types
  - Event loop
  - Callback function
- Library

Streams (Chapter 11) – 22 points
- Inheritance model (from online documentation)
- ostream
- istream
- Output formatting / manipulators
  - Know how they work, you don’t have to memorize specific manipulators
- String streams
- Stream states
  - good()
  - eof()
  - fail()
  - bad()
- getline() vs. input extractor >>
- Command line arguments / files

Pointers (Chapter 12) – 50 points
- Operations
- Memory Regions / areas
- this
- MemoryLeaks
  - Prevention strategies
- Big Three
  - Destructor
  - Copy Constructor
  - Copy Assignment
- Rule of Three
- RAII

Move Semantics – 9 points
- Rationale
- RValue
- LValue
- Move Constructor
- Move Assignment
- Rule of Five

Templates (Chapter 13) – 14 points
- Function Templates
- Class Templates
- ADTs
Linked List – 12 points
- Structure
- Traversal
- Singly linked list vs. Doubly linked list
- Know how to do any of the functions covered in class

Standard Template Library (STL) – 18 points
- Generic Programming
  - What things can be generic?
- Basic STL Model
- Iterators
  - One-past-the-last
- Containers
- Algorithms
- Predicate Function
- Predicate Function Object
  - How do you make one?
- Lambda function
  - Definition only
- Impact of modifying container data on other iterators (e.g. vector vs. list)

Cumulative Part
- Review Exams 1 and 2 – 34 points
- Look over review sheets for Exams 1 and 2
- Things I think you should be able to do at this point – 25 points

Name
- On every page – 2 points