Sample Exam Week 13

CSE 232 (Introduction to Programming II)

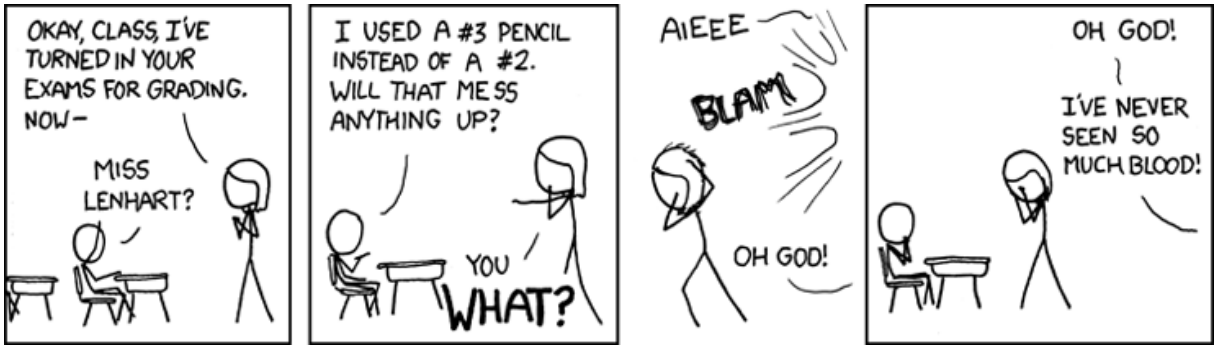
VERSION A

Full Name: .....

Student Number: .....

Instructions:

- DO NOT START/OPEN THE EXAM UNTIL TOLD TO DO SO.
- You may however write and bubble in your name, student number and exam **VERSION/FORM NUMBER** (with a #2 pencil) on the front of the printed exam and bubble sheet prior to the exam start. This exam is Version A. Your section doesn't matter and can be ignored.
- Present your MSU ID (or other photo ID) when returning your bubble sheet and printed exam.
- Only choose one option for each question. Please mark the chosen option in both this printed exam and the bubble sheet.
- Assume any needed `#include`s and `using std::...;` namespace declarations are performed for the code samples.
- Every question is worth the same amount of points. There are 55 questions, but you only need 50 questions correct for a perfect score.
- No electronics are allowed to be used or worn during the exam. This means smart-watches, phones and headphones need to be placed away in your bag.
- The exam is open note, meaning that any paper material (notes, slides, prior exams, assignments, books, etc.) are all allowed. Please place all such material on your desk prior to the start of the exam, (so you won't need to rummage in your bag during the exam).
- If you have any questions during the exam or finish the exam early, please raise your hand and a proctor will attend you.



http://xkcd.com/499/

1. What is the term for a function that invokes itself (with different arguments)?

   (a) reflection
   (b) overloaded
   (c) overrided
   (d) algorithm
   (e) repeated
   (f) complex
   (g) recursion

2. Which CSE course focuses on the design of algorithms and data structures?

   (a) CSE 232
   (b) CSE 350
   (c) CSE 331
   (d) CSE 335
   (e) CSE 300
   (f) CSE 231
   (g) CSE 325

3. Which CSE course will teach you further C++ material (including inheritance and smart pointers)?

   (a) CSE 232
   (b) CSE 331
   (c) CSE 335
   (d) CSE 231
   (e) CSE 300
   (f) CSE 350
   (g) CSE 325

4. Why are there multiple different sort algorithms in use despite them returning the same answer?

   (a) Certain sort algorithms perform better on smaller data sets.
   (b) Certain sort algorithms are easier to implement.
   (c) Certain sort algorithms have other, useful secondary characteristics, like stability.
   (d) Certain sort algorithms perform better on larger sequences.
   (e) All of the above

5. Which of the following is most likely to have the greatest impact on the performance of your code?

   (a) The structure of the project (length of functions, number of files, and lines of code).
   (b) The degree of documentation and test suite of the project.
   (c) The hardware (CPU and/or graphics card) that the program is running on.
   (d) The programming language of the project.
   (e) The choice of which algorithm and data structures to use.

6. Which of the following are benefits provided by smart pointers over raw/naked pointers?

   (a) They can release the resource when they fall out of scope
   (b) They can be dereferenced multiple times in the same function
   (c) They can refer to dynamically allocated memory
   (d) They can support `operator->` and `operator.`
   (e) They can refer to existing objects that are local in scope
   (f) They can refer to multiple objects simultaneously

7. Why are static and global variables not taught before the last week of instruction?

   (a) Because they use interrupts the debugger and thus are difficult to troubleshoot
   (b) Because they are very complex and shouldn't be used until a mastery of RAII has been acquired
   (c) Because they lead to very inefficient code
   (d) Because they don't work nicely with dynamically allocated memory leading to heap-overflow if not initialized correctly
   (e) Because they can't be used in member functions and hence have limited utility
   (f) Because they are rarely needed and lead to bad code habits