CS 161
Introduction to CS I
Lecture 12

- What we learned from Midterm 1
- Variable scope
  - Pass function arguments by value or reference
- Assignment 3 tips

2/3/2020
Midterm 1 Solutions

• Even if you don't know some of these now... you will!
  • Errors highlight for you what to focus on studying
• Average: 84%
• Solution (form K) is posted on course website
  • Calendar -> 02/03 (lecture 12)
  • Direct link: http://classes.engr.oregonstate.edu/eeecs/winter2020/cs161-020/calendar/CS161_Midterm_1_W20_form1_soln.pdf
Midterm 1

• Part I
  • 3: operator precedence
  • 6: random number ranges – what does `rand()` return?

• Part II
  • 1: integer math
  • 2: Linux command from Lab 2
  • 3: operator precedence
  • 4: data type min/max values

Operator precedence

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Midterm 1

• Part II (cont.)
  • 5: no curly braces – this is okay (but only uses first such line)
  • 6: no break statements

• Part III
  • 6: any option is good if you have a good reason for it
  • 7: short-circuit only happens if evaluating one expression renders the next one irrelevant
  • 8: operator precedence and what is %?
  • 9: variable scope
Midterm 1

• Part III (cont.)
  • 10: integer math; stop for loop when x<0 is false
    • note: loop counter update happens after iteration completes
  • 11: check for even values
  • 12: start at 'r' and go backwards to 'n'
  • 13: stop for loop if x >= 10 or if x>3 (break)
  • 15: nested loop: a has the same value until b loop finishes
  • 19: you can loop on one variable (m) and output a different one (num)
    • What is the value of a loop counter when the loop ends? (condition is false)
Midterm 1: Extra credit question 1

• "without using a conditional statement" means no if-then or switch; for/while/do-while ok
• New extra credit item on Canvas: "Midterm 1 extra credit"
  • Due midnight Tuesday, Feb. 4
Midterm 1: Also...

- **If-then vs. switch** — you can use an expression with `switch` if your cases are `true` and `false`. You will however get a compiler warning.

  ```
  switch (10 > 8) {
  case true: cout << "10 is > 8" << endl; break;
  case false: cout << "10 is not > 8" << endl; break;
  }
  ```

- **Conditional/ternary operator**: these lines are equivalent
  - `k = (3 < 4) ? 10 : 20;`
  - `if (3 < 4) { k = 10; } else { k = 20; }`

- **Semi-colon is required at end of statement, not line**
Study sessions start this week

• Thursdays, 6-7 p.m., LINC 268

• Print out the worksheet (from course website calendar) and complete it in advance


• The TA study session leader will go over the answers
Assignment 3 tips

• No global variables, no goto
• C++ buffers output; if you print only a single character it may not show up for a while (until next `endl`)
  • Solution: use `flush` to "flush" the buffer immediately
  • This is actually `std::flush`
• How to modify the current line of output, instead of going to the next line?
  • Use `\b` (backspace) in your string
  • Use `\r` (carriage return) in your string (and `flush`)
Week 5 begins!

- Attend lab 5 (laptop required) – Practice Proficiency Demo
- Read Rao Lesson 7 (pp. 166-167) – functions
  Read Rao Lesson 8 (pp. 205-210) – references
- (Optional) Attend Study Session
  (Thursday, 6-7 p.m. in LINC 268)
- Continue working on Assignment 3 implementation
  (due Sunday, Feb. 9)

See you Wednesday!

2/3/2020