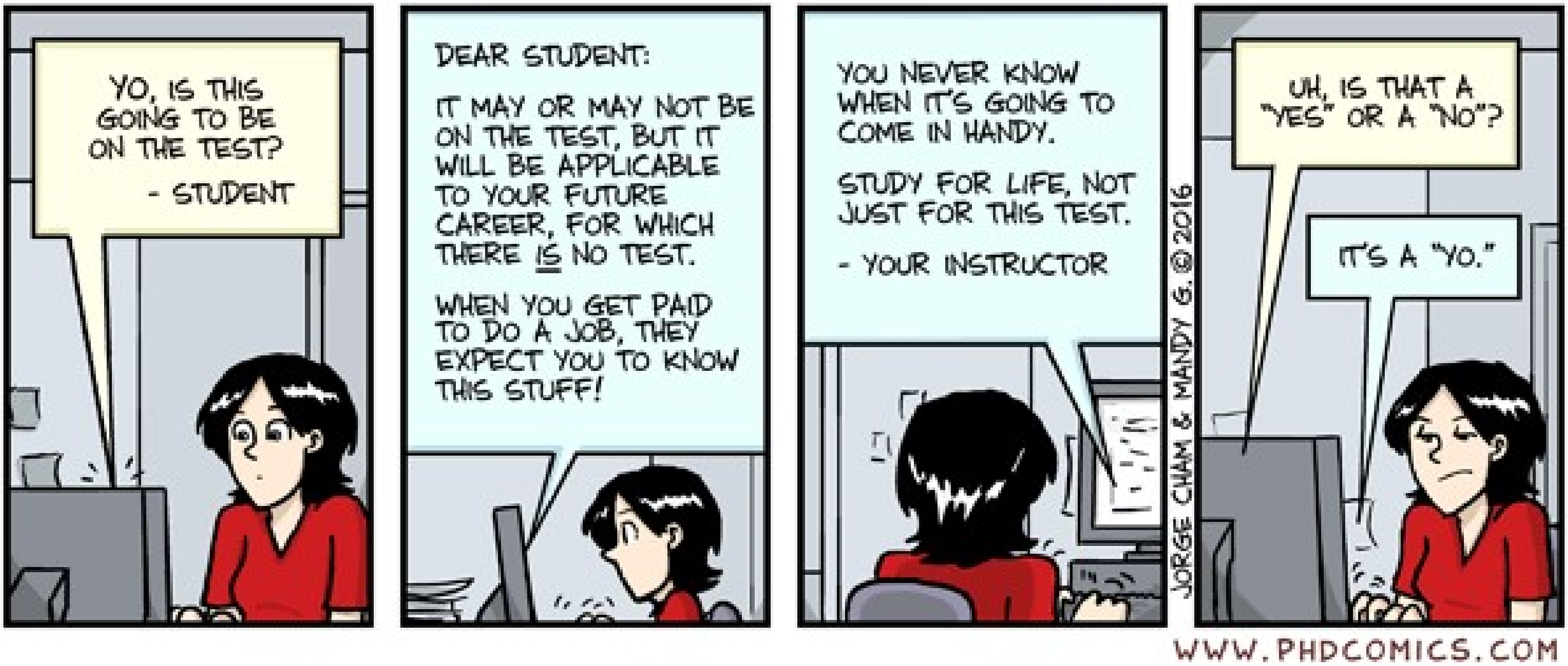
CS 161, Lecture 11: Exam 1 Review – 5 February 2018


YO, IS THIS GOING TO BE ON THE TEST?
- STUDENT
DEAR STUDENT:
IT MAY OR MAY NOT BE ON THE TEST, BUT IT WILL BE APPLICABLE TO YOUR FUTURE CAREER, FOR WHICH THERE IS NO TEST.
WHEN YOU GET PAID TO DO A JOB, THEY EXPECT YOU TO KNOW THIS STUFF!
YOU NEVER KNOW WHEN IT'S GOING TO COME IN HANDY.
STUDY FOR LIFE, NOT JUST FOR THIS TEST.
- YOUR INSTRUCTOR
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UH, IS THAT A "YES" OR A "NO"?
IT'S A "YO."
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Study Sessions

- Monday, 6-7:30 pm, WNGR 116 (70 people out of 100 possible)
- Tuesday, 6-7:30 pm, WNGR 116 (80 people out of 100 possible)

Week 1: Variables and Basics

- A variable that can hold a whole number is called a(n) ____integer____.
- A digit that can hold a zero or a one is known as a ____bit____.
- Errors in a program can be classified into three types, list them

  Syntax, Logic, Runtime

- A mistake that is a direct violation of the syntax rules will generate a compiler ____error____.
- int myValue; is called a ____variable declaration____.

Week 1 Continued

- A memory address is
    - [✓ a)] Where a variable is stored
    - b) Where the computer is located
    - c) A step in the program.
    - d) Where the CPU is stored.
- What does the following line of code display to the screen?
    - ~~a)~~ cout << “This is the computer\n programming book\n”;
    - b) This is the computern programming book
    - c) This is the computer
    - d) Nothing
    - [✓ e)] This is the computer
programming book

Week 1 Continued

- cout << “How many items would you want?\n”;
  - [✓ a)] is an output statement
  - b) is an input statement
  - c) is a variable declaration
  - d) is a program
- #include <iostream>
  - a) is a variable declaration
  - b) an executable statement
  - [✓ c)] an include directive
  - d) illegal code

Week 1 Continued

- What is wrong with the following statement?

  cout << “Hello to everyone\n”

  a) cout should be count

  [✓ b)] missing a semicolon

  c) missing a “

  d) missing a (

- True or [✓ False]: The compiler will catch all your programming mistakes.

Week 1 Continued

- What is the output of the following code?

```
float value;

value = 33.5;

cout << "value" << endl;
```

a) 33.5

b) 33

[✓ c)] value

d) garbage

Week 1 Continued

- What is the value of x after the following statements?

```
float x;
x = 15/4;
```

a) 3.75

b) 4.0

[✓ c)] 3.0

d) 60

Week 2: Conditionals

- if-else statements that are inside other if-else statements are said to be nested ____________.
- When must we use braces to define the body of a con~~t~~ditional expression? more than one line ____________
- In a compound logical and (&&) expression, the evaluation of the expression stops once one of the terms of the expression is false. This is known as short circuiting ____________ evaluation.
- The code following the default ________ case is executed if none of the other cases are matched in a switch statement.

Week 2 Continued

- Given the following code fragment and the input value of 4.0, what output is generated?

```
float tax;
float total;
cout << "enter the cost of the item\n";
cin >> total;
if ( total >= 3.0) {
          tax = 0.10;
          cout << total + (total * tax) << endl;
} else {                   4.0     4.0*.1
          cout << total << endl;
}
```

a) 3
b) 3.3
c) 4.0
[✓ d)] 4.4

Week 2 Continued

- If x has the value of 3, y has the value of -2, and w is 10, is the following condition true or false?

  if(x < 2 && w < y)　　　F && F

  3 F　　10 < -2

  a) true

  [✓ b) false]

- What is the correct way to write the condition y < x < z?

  a) (y < x < z)

  b) ((y < x) && z)

  c) ((y > x) | | (y < z))

  [✓ d) ((y < x) && (x < z))]

Week 2 Continued

- Given the following code fragment, and an input value of 3, what is the output that is generated?

```
int x;
cout <<"Enter a value\n";
cin >> x;
if(x=0) {
        cout << "x is zero\n";
} else {
        cout << "x is not zero\n";
}
```

a) x is zero
[✓ b)] x is not zero
c) unable to determine
d) x is 3

evaluates the x=0
first, then examines the
value of x
since x is zero, it will
return false
if it was a non zero
number, it would be true

Week 2 Continued

- Given the following code fragment, what is the output?

```
int x=5;
if( x > 5)
        ~~cout << "x is bigger than 5. ";~~
        cout <<"That is all. ";
cout << "Goodbye\n";
```

a) x is bigger than 5. That is all

b) x is bigger than 5

[✓ c)] That is all. Goodbye

d) Goodbye

Week 2 Continued

- Which of the following are valid case statements in a switch?
  - [✓ a)] case 1:
  - b) case x<4:
  - c) case 'ab':
  - d) case 1.5:

switch

Bad question

Week 3: Loops

- True or False: The body of a do-while loop always executes at least once. True
- True or False: Loops are used when we need our program to make a choice between two or more things. False
- Each repetition of a loop body is called iteration.
- A loop that iterates one too many or one too few times is said to be off by one

Week 3 Continued

- Given the following code fragment, what is the final value of y?

```
int x, y;
x = -1;
y = 0;
while(x <= 3) {
        y += 2;
        x += 1;
}
```

a) 2
[✓ b)] 10
c) 6
d) 8

x = -1 → 0 → 1 → 2 → 3 → 4

y = 0 → 2 → 4 → 6 → 8 → 10

Week 3 Continued

- What is the final value of x after the following fragment of code executes?

```
int x=0;
do {
        x++;
}while(x > 0);
```

a) 8
b) 9
c) 10
d) 11
e) [✓ infinite loop.]

Week 3 Continued

- Given the following code, what is the final value of i?

```
int i;
for(i=0; i<=4;i++) {
        cout << i << endl;
}
```

a) 3

b) 4

[✓ c)] 5

d) 0

0

1

2

3

4

5

Week 3 Continued

- Given the following code, what is the final value of i?

```
int i,j;
for(i=0;i<4;i++) {
        for(j=0;j<3;j++) {
                if(i==2)
                        break;
        }
}
```

a) 3
[✓ b)] 4
c) 5
d) 0

Week 3 Continued

- Which of the following is not a good reason for choosing a certain loop control?

  a) What the loop does

  b) The minimum number of iterations of the loop

  c) The condition for ending the loop

  [✓ d)] If the loop is in a function

Week 3 Continued

- What is wrong with the following for loop?

```
for(int i=0;i<10;i--) {
        cout << "Hello\n";
}
```

a) can not use a for-loop for this

b) i is not initialized

[✓ c)] infinite loop

d) off-by-one error

Week 4: Functions

- Variables defined inside a set of braces are said to be local to that block of code.
- True or [✓ False]: A function may return more than one item.
- [✓ True] or False: Function naming rules follow variable naming rules.
- True or [✓ False]: The types of parameters are optional in the function declaration.
- [✓ True] or False: It is possible to have a function that has no parameters.
- True or [✓ False]: The parameters listed in the function declaration are considered global variables.
- True or [✓ False]: pow(2,3) is the same as pow(3,2).

Week 4 Continued

- In the following function declaration, the variable size is known as a ___parameter___.

```
int myFunction ( int size);
```

- The ___function body___ describes how the function will work.
- The ___scope___ of a variable is where that variable can be used.

Week 4 Continued

- What is the value returned by the following function?

```
int function() {
        int value = 35;
        return value + 5;
        value += 10;
}
```

a) 35
[✓ b) 40]
c) 50
d) 10

Week 4 Continued

- When overloading a function, what must be true?

  a) The names should be different with the same number and/or types of parameters.

  [✓ b)] The names should be the same with different number and/or types of parameters.

  c) The names should be different with different number and/or types of parameters.

  d) The names should be the same with the same number and/or types of parameters.

Week 4 Continued

- Which of the following are valid function calls to the fabs function?

  a) fabs(3.5);

  b) cout << fabs(3.5);

  ~~c) cin >> fabs(3.5);~~

  ~~d) fabs(cin >> x);~~

  ~~e) a,b and c~~

  [✓ f)] a and b

Week 4 Continued

- Multiple arguments to a function are separated by

  a) comments

  b) semicolons

  c) colons

  [✓ d)] commas

  e) periods

Week 4 Continued

- What is the value of i after the following function call?

```
int doSomething(int value) {
        value = 35;
        return value;
        value = 13
}
//fragment of main program
int i=0;
cout << doSomething(i);
```

a) 13
b) 35
~~c)~~ 48
[✓ d)] 0