COP2334C
Introduction to C++

Midterm Review Exercise

This review presents multiple choice and T/F questions/answers similar to those on the midtem exam. If you are viewing the PowerPoint version of this file you can run it in Slide Show mode as a "flashcard" drill.

To prepare for the programming portion of the exam (which is where most of the points are allocated), review all ungraded and graded practice exercise solutions. Reworking those exercises, like practicing a musical instrument, will help prepare you for your "performance" on the exam.

This is a stream object used for displaying output to the console.

cout

<< is the _____ operator.

insertion

This is the result of the following operation:

7/3

2

This is the result of the following operation:

7/2.0

3.5

This is a basic header file imported into most C++ programs which provides support for I/O.

iostream

"std" is the standard one of these used to group the scope of names used in a C++ program.

namespace

This is a stream object used for reading input from the keyboard.

cin

>> is the _____ operator.

extraction

C++ has no _____ operator which means the pow function must be used.

exponent

Include this header to use math-related functions like "pow" and "round".

cmath

A "downcast" (demotion) from double to int causes _____ of the decimal portion of the double and requires an explicit cast.

truncation

Casting from int to double is a _____ and does not require an explicit cast operation.

promotion

Move a parenthesis to correct the following explicit cast so the fractional result of the division is not truncated:

static_cast<double>(b / a)

static_cast<double>(b) / a

What is missing in the following expression which casts the char variable named c to the letter 'A' (ASCII value of 65)?

c = static_cast<____>(65);

char

_____ are read-only "variables" that are spelled with all upper case, have meaningful names, and cannot be changed while a program is running.

named constants

This program will run, but the logic is flawed; identify the problem:

```
int main()
{
        int a, b, c = 0;     // initialize all variables to 0

       cout << "a = " << a << ",b = " << b << ",c = " << c << endl;

        return 0;
}
```

variables must be initialized individually at declaration

Is the following code legal?

```
int main()
{
        int a, b, c, d;
        a = b = c = d = 50;

        return 0;
}
```

Yes, one value can be assigned to multiple variables at the same time

Describe an augmented (combined) assignment statement which divides a variable named **divResult** by 10

divResult /= 10;

The _____ stream manipulator specifies a field width for output using cout.

setw

The _____ stream manipulator modifies the number of significant digits for floating point values.

setprecision

Use the _____ manipulator to left-justify output.

left

The cin._____() function will skip the next character in the input stream.

ignore

'+' is the string _____ operator.

concatenation

The _____ function seeds the random number generator.

srand(unsigned int)

Relational operators are _____ because they have two operands.

binary

Relational operators are _____ expressions because they evaluate to true or false.

boolean

Identify the error with the following expression:

```
if (value > 5.0);
        newval = value;
else
        newval = 0;
```

semi-colon at end of if clause

_____ variables are typically used as flags.

boolean

A sequence of statements contained within a pair of curly braces is known as a _____.

block

This will be displayed by the following code block.

```
int num = 87, max = 25;
if (num <= max * 2)
      cout << "apple" << endl;
      cout << "orange" << endl;
cout << "pear" << endl;
```

orange

pear

This will be displayed by the following code.

```
if (! ( 1 || 0 ))
     cout << "true" << endl;
else
     cout << "false" << endl;
```

false

This will be displayed by the following code.

```
if (! ( ( 1 || 0 ) && 0 ))
     cout << "true" << endl;
else
     cout << "false" << endl;
```

true

Identify the error with the following switch statement:

```
int x;
double f = 1.5;

switch (f) {
   case 1.0: x = 1;
   case 1.5: x = 2;
   case 2.0: x = 3;
}
```

The switch control variable cannot be of type double.

T/F Curly braces are required for all IF statements.

FALSE

What is y after the following statements are executed?

```
x = 0;
y = (x > 0) ? 10 : -10;
```

-10

In the following statement:

```
if (num % 2 == 0 && num % 3 == 0)
```

if (num % 2) is != 0, the remaining part of the condition is not evaluated. This is known as _____.

short circuiting

_____ types are programmer-defined data types represented internally by integer constants

Enumerated

These are the two types of pretest loops.

while and for

This loop type guarantees at least one iteration.

do-while

The initial prompt and data input before a while loop is known as a _____ _____.

priming read

This is a prefix decrement operator for a variable named "counter".

```
--counter
```

What is the value of val3 after the following code executes?

```
int val = 22;
int val2 = val--;
int val3 = --val2;
```

21

A variable which stores a running total in a loop is known as a(n) _____.

accumulator

A(n) _____ is a value which indicates the end of input.

sentinel

True/False: This is a valid for loop:

```
for ( ; ; )
```

True (but not recommended)

The _____ statement is used to terminate a loop.

break

The _____ keyword is used to terminate a loop's current iteration and passes control the top of the loop (which may result in a new iteration).

continue

#include this file for file stream operations

fstream

Identify the logic problem in the following code excerpt.

```
ifstream iFile;
iFile.open(FILENAME);
if (iFile)  // test for successful open
{
      iFile >> name;
      iFile >> score;
}
iFile.close();
```

close should be inside the braces (only close a file when it has been opened successfully)

Declaring a function _____ "informs" the caller about the function so the program can build successfully

prototype

Identify the error in the following prototype:

int addNums(double int1, int2);

cannot combine parameters

(must be declared as double int1, double int2);

_____ variables are declared outside of any function; their scope extends from the point of declaration through the end of the file

global

Giving global variables (or constants) the same name as local variables or parameters results in _____ and should be avoided.

shadowing

Declaring a local variable as _____ allows it to remain in existence throughout the life of the program

static

_____ arguments are passed to a function's parameters automatically if no argument is provided in the function call

Default

Use pass-by-_____ to modify a primitive variable passed as a function parameter.

reference

Initialize the first element of a char array named "cA" to the exclamation point symbol.

```
cA[0] = '!';
```

How do you reference the first element of a 2-D array named "a"?

a[0][0]

Declare an array of type double named "d" with 5 elements.

```
double d[5];
```

Identify the error in the following code:

```
double d1[3] = ( 1.0, 2.0, 3.0 );
```

Initialization should use braces, not parentheses