CISS240: Introduction to Programming
Quiz q0301

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This is a closed-book, no compiler, 5 minute quiz.

Q1. Write one C++ statement that declares an integer variable with the name `i` and initialize it with the value of `0`.
Answer:

```
int i = 0;
```

(What must a C++ statement end with?)

Q2. Write one C++ statement that declares an integer variable `j` without initialization, and then write another statement that assigns `0` to `j`.
Answer:

```
int j;
j = 0;
```

Q3. Write *one* C++ statement that declares two integer variables, one called `x` and another called `y`. Initialize `x` with `0` and `y` with `1`.
Answer:

```
int x;
int y;
x = 0;
y = 1;
```

Q4. Before the following statement is executed, integer variable `x` has a value of 5 and integer variable `y` has a value of 2.

```
x = x + y;
```

What are the values of `x` and `y` after the above statement is executed? Enter exactly one space between the two values. In other words, if you think `x` is 111 and `y` is 222, enter `111 222`.
Answer:

```
7 2
```

Q5. Before the following statements are executed, the integer variable `x` has a value

of 5, the integer variable `y` has a value of 2, and the integer variable `z` has a value of 4.

```
y = y + 1;
x = x + y + z;
z = x + z / y;
```

What are the values of `x`, `y` and `z` after the above statements are executed? Enter exactly one space between two values. In other words, if you think `x` is 111, `y` is 222 and `z` is 333, you enter `111 222 333`.

Answer:

```
9 3 10
```

Q6. The integer variable `n` is already declared. Write one C++ statement to get an integer input from the user (via the keyboard) and give this integer value to `n`.

Answer:

```
std::cin >> n;
```

Q7. Write the following statements. Declare an integer variable `i` (without initialization). Get an integer input from the user (via the keyboard) and store that value in `i`. Declare an integer variable `d0` and initialize it with the rightmost digit of `i`. (Example: The "rightmost digit" of `135246` is `6`.) Print the value stored in `d0` followed by the newline character.

Answer:

```
int i;
std::cin >> i;
int d0 = i % 10;
std::cout << d0 << std::endl;
```

Instructions

In the file `thispreamble.tex` look for

```
\renewcommand\AUTHOR{}
```

and enter your email address:

```
\renewcommand\AUTHOR{jdoe5@cougars.ccis.edu}
```

(This is not really necessary since alex will change that for you when you execute `make`.) In your bash shell, execute "`make`" to recompile `main.pdf`. Execute "`make v`" to view `main.pdf`.

Enter your answers in `main.tex`. In the bash shell, execute "`make`" to recompile `main.pdf`. Execute "`make v`" to view `main.pdf`.

For each question, you'll see boxes for you to fill. For small boxes, if you see

```
1 + 1 = \answerbox{}.
```

you do this:

```
1 + 1 = \answerbox{2}.
```

`answerbox` will also appear in "true/false" and "multiple-choice" questions.

For longer answers that need typewriter font, if you see

```
Write a C++ statement that declares an integer variable name x.
\begin{answercode}
\end{answercode}
```

you do this:

```
Write a C++ statement that declares an integer variable name x.
\begin{answercode}
int x;
\end{answercode}
```

`answercode` will appear in questions asking for code, algorithm, and program output. In this case, indentation and spacing is significant. For program output, I do look at spaces and newlines.

For long answers (not in typewriter font) if you see

```
What is the color of the sky?
\begin{answerlong}
\end{answerlong}
```

you can write

```
What is the color of the sky?
\begin{answerlong}
The color of the sky is blue.
\end{answerlong}
```

A question that begins with "T or F or M" requires you to identify whether it is true or false, or meaningless. "Meaningless" means something's wrong with the question and it is not well-defined. Something like "$1 + 2 = 4$" is either true or false (of course it's false). Something like "$1+_2 = 4$?" does not make sense.

When writing results of computations, make sure it's simplified. For instance write 2 instead of $1 + 1$.

Higher level classes.

For students beyond 245: You can put LaTeX commands in `answerlong`.

More examples of meaningless statements: Questions such as "Is $42 = 1+_2$ true or false?" or "Is $42 = \{2\}^{\{3\}}$ true or false?" does not make sense. "Is $P(42) = \{42\}$ true or false?" is meaningless because $P(X)$ is only defined if X is a set. For "Is $1 + 2 + 3$ true or false?", "$1 + 2 + 3$" is well–defined but as a "numerical expression", not as a "proposition", i.e., it cannot be true or false. Therefore "Is $1 + 2 + 3$ true or false?" is also not a well-defined question.

More examples of simplification: When you write down sets, if the answer is $\{1\}$, do not write $\{1, 1\}$. And when the values can be ordered, write the elements of the set in ascending order. When writing polynomials, begin with the highest degree term.

When writing a counterexample, always write the simplest.