

CISS240: Introduction to Programming
Quiz q0303

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

Q1. Here's a code fragment. The repeating chunk of code appears 5 times.

```
int i = 0, s = 0;

s = s + i;
i = i + 2;

s = s + i;
i = i + 2;

s = s + i;
i = i + 2;

s = s + i;
i = i + 2;

s = s + i;
i = i + 2;
```

What is the final value of **s** and the final value of **i**? if you think the final value of **s** is 111 and the final value of **i** is 222, write 111 222 with exactly one space between the two values.

ANSWER:

Q2. Here's a code fragment. The repeating chunk of code appears 8 times, but I'm only showing 3 of them:

```
int i = 0, s = 0;

s = s + i;
i = i + 2;

s = s + i;
i = i + 2;

s = s + i;
i = i + 2;

// ... some code not shown ...
```

What is the final value of `s` and the final value of `i`? if you think the final value of `s` is 111 and the final value of `i` is 222, write 111 222 with exactly one space between the two values.

ANSWER:

56 16

Q3. Here's a code fragment. The repeating chunk of code appears 7 times (only 3 are shown).

```
int i = 1, s = 2;

s = s + i;
std::cout << s << '\n';
i = i + 2;

s = s + i;
std::cout << s << '\n';
i = i + 2;

s = s + i;
std::cout << s << '\n';
i = i + 2;
```

What is the last integer output and the final value of `i`? If you think the last integer output is 111 and the final value of `i` is 222, write 111 222 with exactly one space between the two values.

ANSWER:

51 15

Q4. The following code fragment has a chunk of repeating code which appears 3 times.

```
int i = 0, j;  
  
j = i * i;  
i = i + 1  
  
j = i * i;  
i = i + 1  
  
j = i * i;  
i = i + 1
```

What is the least number times the repeating chunk of code must appear if the final value of `j` is greater than 42?

ANSWER:

23

Q5. Two integer variables `i` and `j` are already declared. Write down 3 C++ statements to swap the values of `i` and `j`. You can create exactly *one* variable in the code.

ANSWER:

```
int t;  
t = i;  
i = j;  
j = t;
```

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 L^AT_EX 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.