CISS245: Advanced Programming
Quiz q2607

Name: YOUR EMAIL Score:

Q1. Complete the function `setnull()` so that the output of the following program is 0:

```
#include <iostream>
#include <cstddef>
void setnull(int ** q)
{
    // TODO
}
int main()
{
    int x = 0;
    int * p = &x;
    setnull(&p);           // p is set to NULL
    std:cout << p << '\n'; // output is 0, i.e., p is NULL
    return 0;
}
```

Answer:

```
void setnull(int ** q)
{

}
```

Q2. The output of this code fragment is 42:

```
int x = 0, y = 42;
int * p = &x, * q = &y;
p = q;                    // p points to the value of y
std:cout << *p << '\n';
```

But when you move the statement "`p = q;`" into a function, the ouput is 0 (but you want `p` to point to the value of `y` and the output to be 42):

```
#include <iostream>
void f(int * p, int * q)
{
    p = q;
}
int main()
{
    int x = 0, y = 42;
    int * p = &x, * q = &y;
    f(p, q);
    std:cout << *p << '\n'; // want p to point to the value of y
    return 0;
}
```

Fix the function (see below).
Answer:

```
#include <iostream>
void f(       p,        q)
{

}
int main()
{
    int x = 0, y = 42;
    int * p = &x, * q = &y;
    f(         );
    std:cout << *p << '\n'; // want p to point to the value of y
    return 0;
}
```

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.