

**CISS245: Advanced Programming**  
**Quiz q2101**

Name: YOUR EMAILScore: 

Q1. The following program does not run. Insert *one* statement to correct the problem.  
ANSWER:

```
#include <iostream>

int main()
{
    std::cout << sum(5, 10, 1) << std::endl;
    return 0;
}

int sum(int start, int end, int step)
{
    int s = 0;
    for (int i = start; i <= end; i += step)
    {
        s += i;
    }
    return s;
}
```

Q2. The function `play_audio()` plays music file an audio file. The parameters are:

- **filename**: a C-string that is the name of the audio file to be load
- **track\_number**: an integer. 0 is the first track, 1 is the second track, etc. -1 is “play all tracks”.
- **repeat**: a boolean.

The function returns a 0 if there are no errors, a -1 if the file cannot be found using the **filename**, -2 if the **track\_number** is not -1 and the track number is not found in the audio file. Write down the prototype of this function.

ANSWER:

Q3. The following function call

```
push_back(x, x_len, 42);
```

sets `x[x_len]` to 42 and increments `x_len` by 1. `x` is an array of integer values. Write

down the function prototype of `push_back`.

ANSWER:

## 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<sup>A</sup>T<sub>E</sub>X 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.