Problem Set 1


Problem 1.1

(a) What do curly braces denote in C? Why does it make sense to use curly braces to surround the body of a function?

(b) Describe the difference between the literal values 7, "7", and ’7’.

(c) Consider the statement

\[ \text{double ans} = 10.0 + 2.0 / 3.0 - 2.0 * 2.0; \]

Rewrite this statement, inserting parentheses to ensure that \( \text{ans} = 11.0 \) upon evaluation of this statement.

Problem 1.2

Consider the statement

\[ \text{double ans} = 18.0 / \text{squared}(2+1); \]

For each of the four versions of the function macro \text{squared}() below, write the corresponding value of \( \text{ans} \).

1. \#define squared(x) x*x
2. \#define squared(x) (x*x)
3. \#define squared(x) (x)*(x)
4. \#define squared(x) ((x)*(x))

Problem 1.3

Write the “Hello, 6.087 students” program described in lecture in your favorite text editor and compile and execute it. Turn in a printout or screen shot showing

• the command used to compile your program
• the command used to execute your program (using \text{gdb})
• the output of your program
Problem 1.4

The following lines of code, when arranged in the proper sequence, output the simple message “All your base are belong to us.”

1. `return 0;`
2. `const char msg[] = MSG1;`
3. `}`
4. `#define MSG1 "All your base are belong to us!"`
5. `int main(void) {`
6. `#include <stdio.h>`
7. `puts(msg);`

Write out the proper arrangement (line numbers are sufficient) of this code.

Problem 1.5

For each of the following statements, explain why it is not correct, and fix it.

(a) `#include <stdio.h>;`

(b) `int function(void arg1) {
    return arg1-1;
}

(c) `#define MESSAGE = "Happy new year!"
    puts(MESSAGE);`
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