

# CS 1313 010 Spring 2025 Homework #8

## Quiz to be held in class 9:00-9:15am Mon March 10 2025

Please feel free to discuss these questions with your classmates, but **NOT** to copy each other.

**NOTE:** Except where and as explicitly permitted in writing (for example, in a Homework), you are **ABSOLUTELY FORBIDDEN** to **COPY EVEN A SINGLE CHARACTER** from,

or to have **ANY** shared code with, **ANY** other entity,  
whether a human being (regardless of whether in CS1313 or not),  
a text resource, a computing resource or anything else,  
whether in person, on a local computer, online or anywhere else.

It's **INCREDIBLY EASY** for us to detect such copying, so **DON'T EVEN THINK ABOUT IT!**

1. **DESCRIBE THE CONDITION** of an `if` block. (“The condition is a ...”)
2. For each of these kinds of statements, mark **CAN** if it can appear inside a clause of an `if` block, and mark **CANNOT** if it cannot appear inside a clause of an `if` block. **EXPLAIN** each.
  - (a) A named constant declaration
  - (b) A variable declaration
  - (c) A `printf` statement
  - (d) A `scanf` statement
  - (e) An assignment statement
  - (f) An `if` block

3. For each of the following programs, **WHAT IS THE OUTPUT** for each of the given sets of input? Your answer does not need to include the message that prompts the user to input the data, nor the user's input. If you aren't confident of your answer, type in, compile and run the C program to test it.

```
(a) #include <stdio.h>
int main ()
{ /* main */
    int input_value1, input_value2;
    int aggregate = 0;

    printf("Input two integers:\n");
    scanf("%d %d", &input_value1, &input_value2);
    printf("Before\n");
    if (input_value1 < input_value2) {
        printf("First\n");
        aggregate = input_value1 + input_value2;
    } /* if (input_value1 < input_value2) */
    printf("After\n");
    printf("aggregate = %d\n", aggregate);
} /* main */
```

i. **10 10**

ii. **10 20**

iii. **20 10**

iv. **Draw** the flowchart (on a separate page if necessary).

```
(b) #include <stdio.h>
int main ()
{ /* main */
    int input_value1, input_value2;
    int aggregate = 0;

    printf("Input two integers:\n");
    scanf("%d %d", &input_value1, &input_value2);
    printf("Before\n");
    if (input_value1 < input_value2) {
        printf("First\n");
        aggregate = input_value1 + input_value2;
    } /* if (input_value1 < input_value2) */
    else {
        printf("Second\n");
        aggregate = input_value1 - input_value2;
    } /* if (input_value1 < input_value2)...else */
    printf("After\n");
    printf("aggregate = %d\n", aggregate);
} /* main */
```

i. **10 10**

ii. **10 20**

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iv. **Draw** the flowchart (on a separate page if necessary).

4. **Write a C program** that inputs a real value (not necessarily an integer), calculates its absolute value using an `if` block, and outputs the absolute value. You **DON'T** need to have comments; otherwise, all programming project rules apply, through PP#4.

Also, **draw the flowchart.**

If you use **ANY** resources other than Dr. Neeman, the TAs/graders (Basiri, Bilal), the course textbook or the materials posted on the course webpage, you **MUST** reference them on the quiz. **THIS INCLUDES CLASSMATES, FRIENDS, PROFESSORS, ONLINE RESOURCES, ETC.**