

Assignment #3

Introduction to C Programming – COP 3223

Objectives

1. To reinforce the use of If-Else statements
2. To learn how to use while loops

Introduction: Mission to Mars

Your friend has been playing a new Mars Colony simulator nonstop! They are always talking about how cool it would be if they could be a on the first real-life mission to Mars! To amuse your friend, you have decided to create a series of programs about the possible first colony on Mars.

Problem: Where Can We Get the Best Deal? (marssupplier.c)

Now that we know how much fuel we need and how much equipment we can take, we need to determine which supplier will give us the best deal on what we need to purchase. We will poll a number of suppliers to see what kind of pricing they can give us and select the supplier who has the best deal.

In this program, we want to ask the user for information about suppliers. We can assume that there will be at least one supplier, but we will not know ahead of time how many suppliers there might be. After each supplier's information, ask the user if there is another supplier to consider.

For each supplier, ask the user for the deal that the supplier is willing to offer. Keep track of the best possible deal and which supplier (identified as a number: 1, 2, 3, etc.) is offering it. After all the suppliers have been considered, tell the user which supplier offered the best deal.

Input Specification

1. The user will use 'Y' to indicate there is at least one more supplier to consider.
2. The user will use 'N' to indicate that there are no more suppliers to consider.
3. Each suppliers' price will be a positive real number.

Output Specification

For each supplier, prompt the user with:

What is the price for supplier #X?

To ask about additional suppliers, prompt the user with:

Is there another supplier to consider?

For the final print out, tell the user which supplier they should select, including the best price rounded to two decimal places:

Supplier #X had the best price at \$Y.YY.

Output Samples

Below are some sample outputs of running the program. **Note that these samples are NOT a comprehensive test.** You should test your program with different data than is shown here based on the specifications given above. In the sample run below, for clarity and ease of reading, the user input is given in *italics* while the program output is in **bold**. (Note: When you actually run your program no bold or italics should appear at all. These are simply used in this description for clarity's sake.)

Sample Run 1

What is the price for supplier #1?

500.49

Is there another supplier to consider?

N

Supplier #1 had the best price at \$500.49.

Sample Run 2

What is the price for supplier #1?

250.39

Is there another supplier to consider?

Y

What is the price for supplier #2?

500.49

Is there another supplier to consider?

Y

What is the price for supplier #3?

178.72

Is there another supplier to consider?

Y

What is the price for supplier #4?

300.00

Is there another supplier to consider?

N

Supplier #3 had the best price at \$178.72.

Acceptable Resources

Remember, the use of online help sites is strictly prohibited. The only acceptable resources for these assignments are below:

- Course Webcourse
 - In particular: Week 4 – Conditional Statements and Week 5 – Loops
- Course Textbook
 - Programming Knights: An Introduction to Programming in Python and C by Arup Guha
 - In particular: Chapter 7 and Chapter 8

- Professor Guha's Course Archive
 - <http://www.cs.ucf.edu/~dmarino/ucf/transparency/cop3223/>
- Course TAs and Instructor Office Hours
 - Getting Help: <https://webcourses.ucf.edu/courses/1336411/pages/getting-help>

Style Notes

Please review the course Style Guide on the webcourse, with special attention to the following notes:

- comment major sections of code addressing: "What does this block do?" and "Why did I implement this block in this way?"
- place comments above the line(s) to which it applies
- use inline comments (//) and leave one space between // and the comment's first character
- All variables should be declared at the top of your functions (in this program, only main is needed) and should have meaningful names
- Be sure to declare `main` with: `int main(void) {`
- Indent the contents of main four spaces or one tab
- leave a space on both sides of any binary operators you use in your code (i.e., operators that take two operands). For example, use `(a + b) - c` instead of `(a+b)-c`.
- keywords `if` and `while` should have a single space after them
- contents of `if` statements and loops should be indented four spaces or one tab
- conditions should not have any space immediately after each `(` or immediately before each `)`.

Deliverables

One source file – *marssupplier.c* – is to be submitted over WebCourses.

Restrictions

Although you may use other compilers, your program must compile and run using a standard C Development Environment. Your program should include a header comment with the following information: your name, assignment number or title, and date. Also, make sure you include comments throughout your code describing the major steps in solving the problem.

Grading Details

Your programs will be graded upon the following criteria:

- 1) Your correctness
- 2) Your programming style and use of white space. Even if you have a plan and your program works perfectly, if your programming style is poor or your use of white space is poor, you could get 10% or 15% deducted from your grade.
- 3) Compatibility – You must submit C source files that can be compiled and executed in a standard C Development Environment. If your program does not compile, you will get a sizable deduction from your grade.