

Pittsburg State University
Programming Assignments
EET 247 – Programming for Electronic Devices

PROBLEM SET 2: INTRODUCTION TO COMPUTER PROGRAMMING

LAB ASSIGNMENT – 2C: *Modification of Existing Programs and Input Error Detection*

Overview:

Input or user errors cause a high percentage of program faults. As your programming experience continues to evolve, you must now be more aware and sensitive to common input errors that either induces faulty program execution, such as a divide by zero error, or invalid results. Also, it is very likely that as a program is used in a business environment, it will need to be modified to reflect changes in either operation or business rules.

Objective:

Using your textbook, notes and personal research material, modify an existing program using the C Programming language that will display the desired output on the command screen per the specifications provided. **NOTE:** Your source code/program should be well documented as outlined in Handout #2.

Specifications:

1. Modify the code WidgetShippingCosts.c to do the following:
 - a. Display a message stating: **“ERROR – Number of widget parts MUST be greater than 0”** when the variable quantity has the value less than 1
 - b. Display a message stating: **“WARNING – Widget Part strength is compromised: hole diameter is (actual percentage) of widget part size”** when the variable holediameter is greater than or equal to 90% of the value assigned to variable widgetsize
 - c. Reduce the cost of shipping by 15% when either of these 2 conditions exist:
 - i. The quantity exceeds 100
 - ii. The weight of the shipment exceeds 450 pounds

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- d. Include in the program display, the original shipping costs, the revised shipping costs and amount saved when the conditions in item 1c are met.

Instructions

1. Download the source code file from CANVAS titled WidgetShippingCosts.c, in the FILES -> LABS -> LAB SET 2 folder.
2. Document your modifications and reflect changes in the source code header. Document the body of the source code to show your modifications.
3. Modify the source code as necessary and recompile. The output display should retain the current form with modifications specified in items 1a thru 1d.

REPORTING: Submit your executable file, **documented** source code and screen shots of your output in a ZIP file for proper consideration. Provide enough screen shots to show all of the input error messages of the conditions identified and the various ways shipping cost discounts can be determined.