CS 1400 Fundamentals of Programming

Programming Project 6: Shipping Rates

Objective:

At the completion of this project, you will have created an application that

- Uses an application class of your design for the business logic required in this program
- gets input from the user
- uses decision logic and numeric expressions
- formats output in proper dollars and cents format and displays it for the user.

The problem

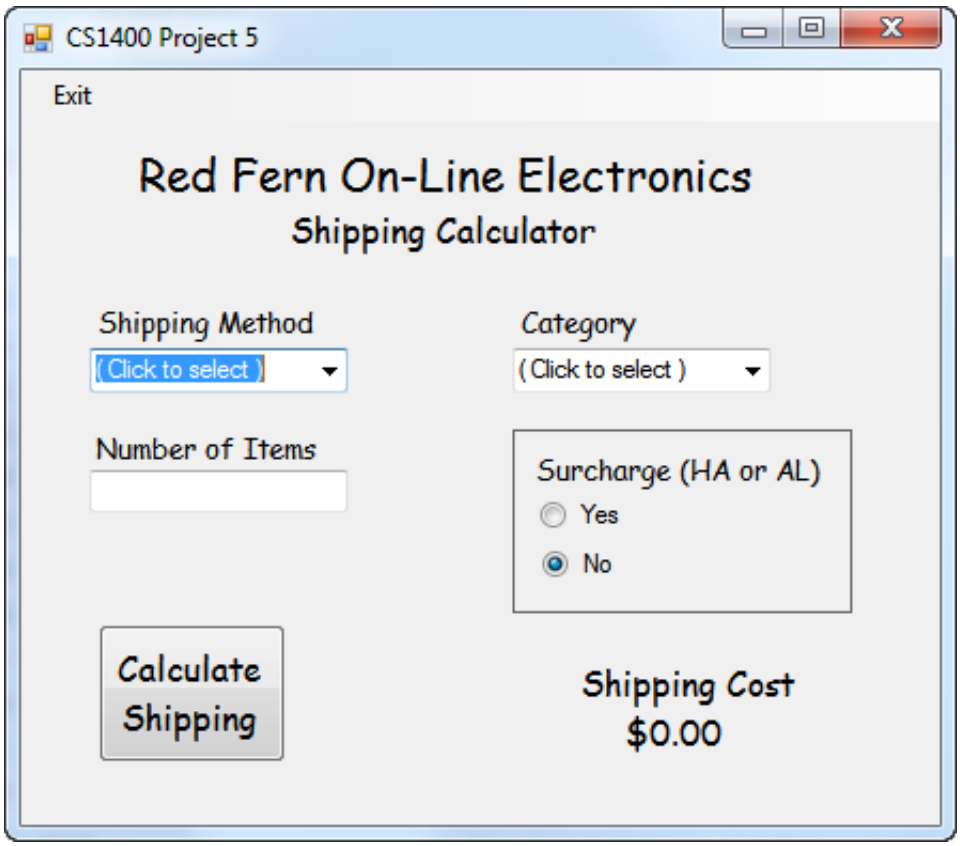
Red Fern On-Line Electronics has asked you to create a program for them that calculates the shipping rates for on-line purchases. The shipping rates are shown in the following table.

Red Fern On-Line Electronics
Shipping Rates

Standard Shipping (3-5 days)	
Category A: $3.00 / item Category B: $1.45 / lb	Hawaii and Alasksa $2.50 surcharge
Express Shipping (2 days)	
Category A: $4.00 / item Category B: $2.50 / lb	Hawaii and Alasksa $5.00 surcharge
Same Day Shipping	
Category A: $5.50 / item Category B: $3.00 / lb	Hawaii and Alasksa $8.00 surcharge

The User Interface

Design a user interface that lets the user choose the shipping method, the category, the number of items to be shipped or the weight of the shipment, and whether or not the shipment is going to Alaska or Hawaii. Here is an example of what your interface could look like. Your interface does not have to match this one, but it should provide all of the required function.



The Business Logic

All of the application data and the business logic for this program must be included in a class of your design. This program requires lots of decision logic, but don't get overwhelmed. Just take things a step at a time.

Magic Numbers

Be sure that your program does not contain any magic numbers!

Diagrams and Pseudo-code

You may find it helpful to draw an Activity Diagram that illustrates the logic involved in this program. You do not need to turn your diagram in, but you can earn extra credit if you do so. Using your diagram, create the pseudo-code for this program. Paste this pseudo-code into your project and mark each line of pseudo-code as a comment.

Format and document your code in accordance with the course style guidelines. Include a file prologue identifying you as the author. Submit your

project using the instructions outlined in the Course Syllabus, Programming Projects section.

File(s) to Submit:

Place your complete project folder into a zip file and name the zip file proj_06_your-initials_V1.0.zip. For example, I would name my file proj_06_RKD_V1.0.zip. Submit this assignment as Project #6 on Canvas.

Grading Criteria

Description	Points possible	Your points
Project meets grading guidelines: o Source code files contain a declaration that you did not copy any code o Project has been submitted to Canvas o Code meets style guidelines o Code is properly documented	5	
Your program contains the pseudo-code that you developed for this program. The pseudo-code accurately describes the decisions required to solve the problem, and your program follows the logic contained in your pseudo-code.	5	
You have submitted an electronic version of an activity diagram that illustrates the decision logic of your program. Your diagram accurately and correctly shows the program logic (as an example, see figure 8.3 in the course notes).	5 (extra credit)	
Your program correctly uses GUI components to gather the user's input. Your program contains an application class of your design to represent a shipment. Your Shipment class contains all of the business logic for this application.	5	
Your program correctly calculates and displays the shipping cost for the inputs given.	15	
Your program properly formats the total shipping cost on output.	5	
Early bonus (+5 pts) or late penalty (20%/day)		
Total	35	

You can get an executable for a GUI program that runs correctly here!