

**Assignment 2**  
**THE BACKPACK COMPANY**  
***Due Monday, March 8, 2009***  
***at the beginning of class***

We are going to make user interface forms for an on-line store that allows customers to pick out a backpack. The form will have two parts. The first part will ask the user to pick a backpack model and to select the size and additional options for the backpack. The second part of the form will be a check-out form where the user types their name, selects shipping and sees the final cost.

In the first part of the form, the user can specify their backpack order:

- Select between models: Regular and Cargo (extra pockets).
- Select a size: Small, Medium, Large and X-Large.

Each combination of model and size has a price and shipping weight in pounds:

Regular	Small	\$12.00	2
	Medium	\$15.00	3
	Large	\$18.00	4
	X-Large	\$21.00	5
Cargo	Small	\$14.00	3
	Medium	\$17.00	4
	Large	\$20.00	5
	X-Large	\$23.00	6

Additional Options can be selected that add to the cost and to the weight:

Hip Strap	add \$5	add 1 pound
Laptop Sleeve	add \$15	add 2 pounds
Water Bottle	add \$4	add 1 pound

The user may also type in a discount coupon code, if they have one. The allowable coupon code is "CG50FF". If the user types in this string, then they will get \$5 off the (total) price of a cargo backpack, if that is the model selected.

After specifying all these options, the user can give the number of backpacks that they want to order of this specification and have a button where they can add this to their shopping cart. Note that the user can then go on to order more backpacks, adding to the information in the shopping cart.

The second part of the form is the checkout for all the items that have been added to the shopping cart in the first part of the form.

- This part should ask the user to type their name.
- Then the user can choose between two types of shipping, Regular and Expedited.
- There is a button where the user can view their order. This should include:
  - Their name.
  - The number of items ordered and the total weight.
  - The subtotal, which is the total cost of items in the cart – discount, if any.
  - The cost of the shipping.
  - Estimated amount of sales tax (at 8.25%)

- The total amount of the order.
- Finally, there should be another button where the user can clear the shopping cart and start over.

### Computation for the form:

This application will require global variables to keep information in the shopping cart. In these variables, you should keep all the information that is needed in more than one button. In particular, note that you must save all the information that must be displayed on the checkout form.

There are also two programming requirements for this assignment. The first is that you are required to write and use a procedure to compute the price of backpacks, including the discount coupon code.

The second requirement is that the shipping costs are stored in arrays according to the following design. There are two arrays, with one for regular shipping and one for expedited shipping. Here are the two arrays:

```
double [ ] regularship = {0.0, 0.0, 1.20, 1.50, 1.70, 1.80, 2.00, 2.20, 2.30, 2.50,
                          2.70, 2.80, 3.00, 3.20, 3.30, 3.50, 3.70, 3.80, 4.00, 4.20};
double [ ] expeditedship = {0.0, 0.0, 3.00, 3.50, 3.80, 4.10, 4.40, 4.60, 4.80, 5.00,
                            5.20, 5.30, 5.50, 5.70, 5.80, 6.00, 6.20, 6.30, 6.50, 6.60};
```

Each array gives the cost of shipping for pounds ranging from 0 to 19. If the weight of an order is over 19 pounds, then the regular shipping is \$4.50 and the expedited shipping is 6.80. Note that in each element of the array is the cost of the shipping for the number of pounds of the index number of that array. For example, if the total weight of the order is 7 pounds and regular shipping is chosen, then the cost of shipping is `regularship[7]`.

Other requirements:

In the checkout, all monetary amounts should be formatted as currency.

To finish this assignment

- Design the layout the form and make it. Give meaningful names to the components.
- Write the programs
  - Write comments on the top of each program, including **your name** and what the program is for
  - Write (simple) comments before each button `ActionPerformed` method with the description of what it does
  - Write the code, including the procedure, design variables as appropriate and add any additional comments that will make the code clear to read

Program design for this assignment will be discussed in class on Monday, March 1.

For this assignment, you will be graded on:

- Whether the programs runs and computes correctly
- Error checking for user input from textboxes
- Use of radiobuttons and checkboxes
- Format, clarity and appearance of user interface
- Currency Formatting
- Design of variables and variable names
- Design and use of procedures
- Documentation
- Clarity and overall design of programs

**How to Submit your Homework:**

In your project directory, create a **zip file** of the sub-directory that has your homework project in it and submit it to the assignment 2 dropbox on the iLMS system.