Intro to Python – Lesson 11

We will review the remaining exercises from the IF Statements we were working on yesterday. Complete these problems and make note of any issues for discussion.

Here are a couple of exercises that you can play with. Keep good programming techniques in mind – Comments, constants, and spacing.

1. A local company called **The Snuggly Company** sells a unique product called The Snuggly and would like a program to help process customer orders.

    The program requires the user to enter the customer's name, street address, city, province and postal code, phone number and credit card number, along with the number of Snugglys they wish to purchase.

    The total cost of the Snuggles are $29.99 for the first, $24.99 each for orders between 2 and 10, and 21.99 each for orders exceeding 10. Shipping costs are $3.99 per Snuggly for orders of 6 or more, and 5.99 per Snuggly otherwise. The Subtotal is the cost of Snugglys plus the shipping.

    Sales tax is 15% for all orders based on the subtotal. The total order is the subtotal plus the taxes. The credit card company charges The Snuggly Company 3% on the total order as a service charge. This amount is not charged to the customer and appears on the screen display only.

    Display all input and calculated values to the screen with appropriate headings. Note I have not defined a full screen but just print the results with headings and formats.

2. The **NL Power Company** needs a program to process customer statements for electricity used in a month. The meter reader is given a sheet with all the names and street addresses, the last month meter reading, and a blank area to put the current meter reading from each house. They then bring that completed sheet to the data entry clerk for processing.

    The program will require that the user enter all the values from the sheet. The program will then calculate the number of kilowatt hours used using the two meter readings. The charge to the customer is calculated using 7.3 cents for each kilowatt hour for hours less than 100, and 6.9 cents otherwise. To promote early payment, the company offers early payment terms - calculate the discount based on an 3% reduction on bills that exceed $500.00, and a 1% discount on any other bill. Calculate the Subtotal as the charge less the discount. The HST is calculated on the subtotal using a rate of 15%, and the Total Discounted Charge is determined by adding the charge less the discount plus the HST.

Finally calculate the Total charge after the discount period – this is based on the total charge before the discount with 15% HST.

The program will display the input values along with the kilowatt hours used, the charge, the discount, the HST, the total charge, and the Total charge after the discount date on the screen. Use appropriate headings and formats to make the results look good. At the end of the printout print a message that reads:

"Payment before the 25th of the month are the discounted amount. Payments after the 25th will be the Total Charge.

3. Design a program to be used by the local gym to bill their members. Set up a constant for the membership cost and the sales tax rate. The user will input from the keyboard the membership number, member name, street address, phone number, the total number of family members on the account, the current day (1-31), and the current month (1-12).

   Calculate the membership cost using $125 for the first member and $75.00 for each additional member. Calculate the HST using 15% and the total Membership cost – This is the cost paid each month starting on the 1st of the following month.

   Tricky. The Registration fee is paid up front when the membership is started. There is an initial fee of $49.99 plus the pro-rated membership cost for the current month. For this calculation determine the total number of days in the month – remember Feb could be a leap year. Now determine the number of days left in the current month. Divide the number of days left by the total number days in the month for the current percentage. Finally, multiply the membership cost by the percentage. This is the pro-rated membership cost. HST on the Registration fee is calculated at 15% and the total due is the registration fee plus the HST.

   If the member cancels their membership at any time, the cancellation fee is 60% of the membership cost for 3 months.

   Display all input values and calculated values to the screen.

See you at 1.