CEGEP VANIER COLLEGE
CENTRE FOR CONTINUING EDUCATION
Introduction to Linux
420-995-VA

Teacher: S.Chebbine **Lab Review 9** **Mar 01, 2015**

Lab Review 9: Shell Programming: The use of Float variables and bc (***bench calculator***).

Create and Submit a Word file ***Lab9LinuxYourName.doc*** which contains a good sample of output screenshots for every Shell Program. You need to submit the Shell Programs too.

1. Develop a Shell Program to be named ***Billing*** that allows the end user to issue a billing for a given product (Prd_Price) and a given quantity (Prd_Qty). You have to display the total taking into account the federal and provincial taxes (Fed_Tax=7.5%, Prv_Tax=6% respectively) according to the following formula:

   Result = (Prd_Price* Prd_Qty) + (Prd_Price* Prd_Qty)* 7.5% + (Prd_Price* Prd_Qty)* 6%

a) Write down the corresponding ***algorithm***

b) Using your algorithm, write down the corresponding Java Program and display the outcome as shown in Figure 1.

```
student@linux-6c76:~/Review9> sh  Billing
The Billing System
Enter your Product's Price: 49.99
Enter your Product's Quantity: 2
The Total of Billing is 113.468
Thank you for Doing Business With Us
student@linux-6c76:~/Review9>
```

Figure 1

c) (Looping Structure) Add appropriate statements to allow end user to re-enter new value for Billing until she chooses to quit as shown in Figure 2.

```
student@linux-6c76:~/Review9> sh Billing1
The Billing System
Enter your Product's Price: 49.99
Enter your Product's Quantity: 2
The Total of Billing is 113.468
Thank you for Doing Business With Us
Do you want to enter new value yes/no? yes
Enter your Product's Price: 66.99
Enter your Product's Quantity: 4
The Total of Billing is 304.127
Thank you for Doing Business With Us
Do you want to enter new value yes/no? no
student@linux-6c76:~/Review9>
```

Figure 2

2. Develop a Shell Program to be named ***Conversion*** that allows the end user to convert a Canadian currency amount (Can_Cur) into US currency amount (Amr_Cur). The end user has to enter the amount in $CAN, and display the corresponding amount in US $ according to the following formula:

$$Amr\_Cur = Can\_Cur * 1.10$$

a) Write down the corresponding algorithm

b) Using your algorithm, write down the corresponding Java Program and display the outcome as shown in Figure 3.

c) (Looping Structure) Add appropriate statements to allow end user to re-enter new value for conversion until she chooses to quit as shown in Figure 3.

```
student@linux-6c76:~/Review9> vi Conversion
student@linux-6c76:~/Review9> sh Conversion
The Conversion System
Enter your Amount in Canadian Currency : 250
The corresponding Amount in US Currency (By default) is:275.00$
Thank you for Doing Business With Us
Do you want to enter new value yes/no? yes
Enter your Amount in Canadian Currency : 300
The corresponding Amount in US Currency (By default) is:330.00$
Thank you for Doing Business With Us
Do you want to enter new value yes/no? yes
Enter your Amount in Canadian Currency : 699.99
The corresponding Amount in US Currency (By default) is:769.98$
Thank you for Doing Business With Us
Do you want to enter new value yes/no? no
student@linux-6c76:~/Review9>
```

Figure 3

3. Write a Shell program to be named ***Story*** that plays a word game with the user. The program should ask the user to enter the following:

- His or her name
- His or her age
- The name of the city
- The name of the college
- A profession
- A type of animal
- A pet's name

After the user has entered these items, the program should display the following story, inserting the user's input into the appropriate locations:

There once was a person named **NAME** who lived in **CITY**. At the age of **AGE**, **NAME** went to college at **COLLEGE**. **NAME** graduated and went to work as a **PROFESSION**. Then, **NAME** adopted a (n) **ANIMAL** named **PETNAME**. They both lived happily ever after!

```
student@linux-6c76:~/Review9> sh Story
The Great Story Ever
Enter your Name: Leonardo
Enter your Age: 34
Enter the Name of your City: Montreal
Enter the name of your College: Vanier
Enter your Profession: Programmer
Enter the type of animal you Like: Dog
Enter the pet's name: Fox
 There once was a person named Leonardo who lived in Montreal. At the age of 34, Leona
rdo went to college at Vanier. Leonardo graduated and went to work as a Programmer. Th
en, Leonardo adopted a Dog named Fox. They both lived happily ever after!Thank you for
 Doing Business With Us
Do you want to hear that nice story again  yes/no? no
student@linux-6c76:~/Review9>
```

Figure 4

4. **TELL A STORY**: Create Java Program that plays a word game with the user similar to 3. The program should ask the user to enter *at least* eight variables, and display your *meaningful STORY*, inserting the user's input into appropriate locations.

5. Write a Shell program to named ***PayRoll*** that allows payroll department to issue a pay stub for a given employee. The user in payroll department should enter the name of employee, his Security Social number (SSN), number of worked hours (*number_whr*), hour rate (*h_rate*). The program will display the total Net Amount (*Net_Amount*) as shown in Figure 5, taking into account the different deduction amounts described below.

   Total_Income = number_whr * h_rate

   Deductions:

   Provincial tax (Prv_Tax): 9% of *Total_income*.
   Federal tax (Fed_Tax): 7% of *Total_income*.
   Que. parental insurance. plan (QP_Ins): 0.55% of *Total_income*.
   Employment insurance (E_ins): 1.4% of *Total_income*.
   (Quebec pension plan) Qpp : 4.5% of *Total_income*.
   Union dues (Union_d): 1.65% of *Total_income*.
   The total Net Amount (*Net_Amount*) is calculated according to the following formula:

   Net_Amount = Total_Income **- Deductions**

```
student@linux-6c76:~/Review9> sh PayRoll
The PayRoll System
Enter Employee's Name: Leonardo

Enter Employee's SSN: 123456789

Enter Number of Worked Hour: 80

Enter the Rate Hour $: 22

##########################################################
The Total Earning is (Display By default) is 1760$
          The Fed_Tax Deduction is 123.20$
          The Prv_Tax Deduction is 158.40$
          The QP_Ins Deduction is 9.6800$
          The E_ins Deduction is 24.640$
          The Qpp Deduction is 79.200$
          The Union_d Deduction is 29.0400$

          The Total Deduction is 424.1600$



          The Total Net Amount is 1335.8400$
##########################################################
Do you want to enter new value yes/no? no
student@linux-6c76:~/Review9>
```

Figure 5

Objectives

- Shell Programming

1. Complete the exercises of:
    - Hands-On Projects 6-8 page 319-321.
    - Hands-On Projects 6-10, page 322.

What to hand in

1. Create and Submit the Word file OracleCh6YourName.doc for storing the following :

   A good sample of output screenshots. For this purpose, students should capture the screen display and use Paint to cut/past and submit the appropriate windows (and not the entire screen display) displaying the output for each question, if any. You have to paste the Script shell commands used for this purpose, if any.