Programming 1

Assignment 1

Due Date: Sep-12 23:59:59. **Late submission will directly be marked as 0**.

Submission: Please submit one .java file for each task (4 .java files in total). Do not zip your files but submit one single file each time (Omnivox accepts multi-submission).

Full Score: 100

Requirement:

1. Make sure you write documentation for each task, (don't forget the @author).
2. **Keep your code clean** (indent, right spacing, appropriate identifier, camel case). Each part that is not clean will get -1 paneity.
3. Add appropriate comments if it is necessary.
4. Make sure you understand your own code and can explain it in front of another person. Student may be randomly selected to ask to explain her/his code. **Failing to explain your own code will be heavily panelized**.

Task 1:

Create a project **PersonalInfo** to: ask the user to input your personal information, and use printf() to displayed as follow: (You are not allow to hard-code spaces before the column to make the heading aligned. Instead, create place holders for the headings, and turn their widths.)

```
run:
Please enter your name: Yi Wang
Please enter your age: 34
Please enter your gender: Male
Please enter your department: Computer Science and Technology
Please enter the value of PI (3.1415926):

First Name     : Yi
Last Name      : Wang
Age            : 34
Gender         : Male
Department     : Computer Science and Technology
PI             : 3.14
BUILD SUCCESSFUL (total time: 0 seconds)
```

Task 2:

Create a project **PriceCalculator** to: ask the user to input an original price of an item, and then ask the user to input a discount ratio (e.g.: 5 for 5% off). Then calculate the final price of the item. The customer must pay 5% federal tax and 9.975% provincial tax. All results must contain two decimal digits.

```
run:
Please enter the item price: 19.99
Please enter the discount ratio (5 for 5%): 5

Original Price   : 19.99
Discount ratio   : 5.00%
Price Before Tax : 18.99
------------------------------
Federal Tax      : 0.95
Provincial Tax   : 1.85
Final Price      : 21.79
BUILD SUCCESSFUL (total time: 0 seconds)
```

Task 3

Create a project **NumberConverter** to ask the user to input a 4-digits Octal number, then convert it to a decimal number. (Hint: (1) each digit should multiply with its weight. (2) Math.pow(3, 2) returns 9.)

```
run:
Please enter a 4-digits Octal number: 7421

Octal Number   : 7421
Decimal Number : 3857
BUILD SUCCESSFUL (total time: 0 seconds)
```

Task 4

Create a project **BalanceCalculator** to ask the user to input an initial balance, the annual interest rate, and how many years (integer) the money will be saved in the bank. Then calculate after that many years, what would be the new balance for that account. (Hint: (1) use Math.pow() (2) use printf() to right-aligned the values)

```
run:
Please enter the initial balance: $15000
Please enter the annual interest rate (2 for 2%): 2.3
Please enter the number of years the client wants to save the money in the bank: 5

Initial Balance       : 15000.00
Annual Interest Rate  :    2.30%
Saving Years          :        5
--------------------------------
Balance After 5 Years : 16806.20
BUILD SUCCESSFUL (total time: 0 seconds)
```