CIT 130        Beginning Java
**Assignment #3** – Total Points = 100

Assigned Date: 9/3                    Date Due: 9/13

**DO NOT share your answers with anyone. DO NOT collaborate on completing work with anyone. DO NOT use the Internet to search for solution to assignments. DO NOT pay anyone to write your code. Failure to meet this requirement leads to a violation of the academic integrity principles.**

**Helper File**: See the helper files located under the assignment link where you picked up this assignment file for a sample question and answer.

**Grading Criteria File**: See the grading criteria file under the assignment link where you picked up this assignment file for a sample question and answer.

**Objective**: Demonstrate your understanding of basic Java constructs for input, process and output. Demonstrate your understanding of writing pseudocode to solve problems. This assignment is based on the material covered in **chapter 2** of your textbook and the material covered on algorithms.

**Assignment**: Write the **pseudocode** and the **Java program** to calculate future value of investment using compound interest. The pseudocode will be placed in the comments section of the Java program at the beginning of the program file.

**Process**: If you deposit money in an account and let the account earn compound interest for a certain number of years, the balance of the account can be calculated using a simple formula:

$$balance = principal\ (1 + rate\ /\ times)^{times\ *\ years}$$

balance is the amount of money after a certain number of years
principal is the original amount of deposit
rate is the annual interest rate as a whole value; rate of 5% is entered as 5 and not .05. In your code, you must convert the rate to a decimal value by dividing the input rate by 100
times is the number of timers per year that the interest is compounded
years is the specified number of years

The program should prompt for the data on the right side of the equation and calculate and display the balance.

Submit your Java file. Use the file format: **firstNameLastNamecit130_hw3.java** for your file name. NOTE: Java class names must being with a capital letter (i.e., FooBarcit130_hw3.java). Submit your file to the assignment dropbox in Canvas. The following is a sample run of the code. **Your processing must be VERY similar to the sample run**.

Don't worry about controlling the number of digits after the decimal point.

**SAMPLE RUN:**

Enter the original balance: 1000
Enter the annual interest rate: 5
Enter the number of times per year that the interest is compounded: 4
Enter the number of years for the account to earn interest: 20

************ ACME BANK
Original Balance = $1000
Annual interest rate = 5%
Interested compounded 4 times per year
Number of years = 20
Final balance after 20 years at an annual rate of 5% compounded 4 times per year is: $2701.48

Note that if we run the same code, but compound the interest 12 times per year, the new balance will be $2712.64.