Pittsburg State University
Programming Assignments
EET 247 – Programming for Electronic Devices

PROBLEM SET 2: INTRODUCTION TO COMPUTER PROGRAMMING

LAB ASSIGNMENT – 2B: *Loan Amortization Calculator*

Overview:

Banks are happy to give a person a loan for a car, house, business, or for other reasons. They are happy to do it because they make money off of your loan. They charge you interest which is amortized over a period of time. On a typical home mortgage, the homeowner pays more in interest to the bank than he/she pays for the house.

Objective:

Using your textbook, notes and personal research material, write a program using the C Programming language that will display the desired output on the command screen per the specifications provided.

NOTE: Your source code/program should be well documented as outlined in Handout #2 <u>and</u> contain at least **1** function call to a **function that you created**.

Specifications:

Input: From keyboard: Purchase Price, Down payment, Annual interest rate and Number of payments

Process: Perform the required math processes on the inputs per the following information:

$$Payment = \frac{iP}{1 - (1 + i)^{-n}}$$

Where,

P = Principal (the amount you borrow)

i = monthly interest rate ($\frac{1}{12}$ of the annual rate)

n = total number of payments

Output: Clear the screen and then display **your name**, Purchase Price, Down Payment, Principal Borrowed, Number of Payments, Annual interest rate, Monthly payment and Total Amount repaid. Relevant Dollar and Percent signs are to be included and displayed values should reflect two decimal points. Your output must look the depiction on page 3 to receive full consideration.

REPORTING: Submit your executable file, **documented** source code and screen shot of your output in a ZIP file for proper consideration. Provide screen shots of **at least 3** different loan amounts, interest rates and number of payments. As part of your source code documentation, identify any limits to the expected input, output and/or processing.

OUTPUT EXAMPLE:

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         THE FRANKLIN BANK & TRUST COMPANY of LITTLETON, NY

                  Loan Information Disclosure Statement

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Borrower Name:      Your Name

Purchase Price:     $900.00

Down Payment:       $100.00

Principal Borrowed: $800.00

Number of Payments: 24

Annual Interest Rate: 6.25%

Monthly Payment:    $35.55

Total Repayment:    $853.12

Total Interest:     $53.12

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