Project Assignment

Module: Math

Title: A Mortgage Calculator

Description:

Many people have to borrow money at some point. The formulas to calculate periodic loan payments (such as a mortgage) have been known for centuries:

$$\boldsymbol{payment} \;=\; P \;\times\; \left(\frac{r}{n}\right) \;\times\; \frac{\left(1+\dfrac{r}{n}\right)^{t\times n}}{\left(1+\dfrac{r}{n}\right)^{t\times n} - 1}$$

Where:

P = principal amount

r = interest rate per unit of time

n = payments per unit of time

t = term of the loan, in units of time

Instructions:

Create a class named `MortgageCalculator`. In it, write a function named `calcPayment` that takes the four parameters listed above. Calculate and return the monthly mortgage payment for the following loan:

        P = 579000

        r = .0825

        n = 12 (payments per year)

        t = 30 (years)

Write a separate class named `MortgageMain` to hold a main() method that calls the mcalculator. Asking the user for input is optional.

That is a very scary function; no wonder people are terrified by loans! When turning this into code, look for the parts of the formula that are repeated; calculate these parts and store the results in variables that you can use later to assemble the final answer.