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/*
    Java 1          Basic Mortgage calculator
    Programmer:     Mike Brown
    Date:           March 31, 2009
    Program Name:    Mortgage.java
    Purpose:        Calculate Monthly payments
*/

//import statements import basic input capability
import java.io.*;

public class Mortgage
{
    public static void main(String[] args) throws IOException
    {
        //declare variables
        String totalLoan, percentInterest, numYears;
        double loanAmount, interestRate, monthlyPayments, totalAmountOfLoan;
        int term;

        BufferedReader dataIn = new BufferedReader(new InputStreamReader(
            System.in));
        //call introduction method
        introduction();

        // print prompts and get input
        System.out.print("\t\tPlease enter the total loan amount: ");
        totalLoan = dataIn.readLine();
        loanAmount = Double.parseDouble(totalLoan);
        System.out.print("\t\tPlease enter the interest rate: ");
        percentInterest = dataIn.readLine();
        interestRate = Double.parseDouble(percentInterest);
        System.out.print("\t\tPlease enter the term of the loan in months: ");
        numYears = dataIn.readLine();
        term = Integer.parseInt(numYears);

        //call getTotalInterest method
        totalAmountOfLoan = getTotalInterest(loanAmount, interestRate);

        //call payEachMonth method to get monthly payment amount
        monthlyPayments = payEachMonth(totalAmountOfLoan, term);

        //print results
        System.out.printf("\t\tYour total monthly payments are:$ %.2f\n" ,
            monthlyPayments);
    } //end main

    /**
     * introduction method
     * This method takes no parameters
     * This method returns nothing
     * This method is used to create an introduction screen (splash)
     * It is it's own method so that it can be easy to change in later
     weeks when
     * it is no longer a "basic mortgage calculator, and so I can easily
     keep track of the
     * version number
     */
    public static void introduction()
    {
        System.out.println("\t\t Basic Mortgage Calculator v1.0");
        System.out.println();
    }

    /**
     * payEachMonth method
     * This method will take 3 parameters (totalLoan, rateOfInterest, and
     lengthOfLoan) and use them to calculate the

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    *      total monthly payments. The parameters get passed by the caller in
    *      the form of payEachMonth(laonAmount,interestRate,term)
    *      The caller uses those variables to get the total monthly charges.
    *      The payEachMonth method returns the double, payPerMonth.
    *
    * @param totalLoan
    * @param rateOfInterest
    * @param lengthOfLoan
    * @return payPerMonth
    */

    public static double getTotalInterest(double totalLoan, double
    rateOfInterest)
    {
        double interestPaid = (rateOfInterest/100)*totalLoan;
        double totalAmountOfLoan =  interestPaid + totalLoan;
        return totalAmountOfLoan;
    } //end payEachMonth

    /**
    * This method takes the total loan amount (amount of the loan + the total
    * interest)
    * and divides that by the length of the loan. This gives us the monthly
    * payments
    * of that loan.
    * @param totalLoanAmount
    * @param lengthOfLoan
    * @return payPerMonth
    */
    public static double payEachMonth(double totalLoanAmount,int lengthOfLoan)
    {
        double payPerMonth = totalLoanAmount / lengthOfLoan;
        return payPerMonth;
    }

} //end class
```