*/\*\*  
 \* Created by t00025164 on 09/02/2018.  
 \*/***public class** Loan {  
  
 *//----------------------------------  
// Data Members  
//----------------------------------  
 // Constant for the number of months in a year* **private final int MONTHS\_IN\_YEAR** = 12;  
 *// The amount of the loan* **private double loanAmount**;  
 *// Yearly interest rate* **private double annualRate**;  
 *//The monthly interest rate* **private double monthlyInterestRate**;  
 *// The number of monthly payments* **private int numberOfPayments**;  
  
 *//----------------------------------  
// Constructor  
//----------------------------------* **public** Loan() {  
 }  
  
 *//Creates a new Loan object with passed values.* **public** Loan(**double** amount, **int** period) {  
 setAmount(amount);  
 setPeriod(period);  
 setRate(period);  
 }  
*//-------------------------------------------------  
// Public Methods:  
// double getAmount ( )  
// double getPeriod ( )  
// int getRate ( )  
//  
// double getMontlyPayment( )  
// double getTotalPayment ( )  
//  
// Private methods  
// void setAmount ( double )  
// void setPeriod ( int )  
// void setRate ()  
//------------------------------------------------  
  
 //Returns the loan amount.* **public double** getAmount() {  
 **return loanAmount**;  
 }  
  
 *//Returns the loan period in the number of years.* **public int** getPeriod()  
 {  
 **return numberOfPayments** / **MONTHS\_IN\_YEAR**;  
 }  
 *//Returns the annual interest rate.* **public double** getRate() {  
  
 **return annualRate**;  
 }  
 *//Returns the monthly payment* **public double** getMonthlyPayment() {  
 **double** monthlyPayment;  
 monthlyPayment = (**loanAmount** \* **monthlyInterestRate**)  
 / (1 - Math.*pow*(1 / (1 + **monthlyInterestRate**),  
 **numberOfPayments**));  
 **return** monthlyPayment;  
 }  
  
 *//Returns the total payment* **public double** getTotalPayment() {  
 **double** totalPayment;  
 totalPayment = getMonthlyPayment() \* **numberOfPayments**;  
 **return** totalPayment;  
 }  
  
 *//Sets the loan amount of this loan.* **private void** setAmount(**double** amount) **throws** IllegalArgumentException {  
  
 **if** (amount <= 0.0) {  
 **throw new** IllegalArgumentException();  
 }  
 **loanAmount** = amount;  
  
  
 }  
  
 *//Sets the interest rate of this loan.* **private void** setRate(**int** period) {  
  
 **if**((**loanAmount** >=500) && (**loanAmount** <=5000))  
 {  
 **if**(period >=1 && period <= 3 ){  
 **annualRate** = 10;  
  
 }  
 else {

**annualRate** = 6;  
 }  
 **else if** ((**loanAmount** >=5001) && (**loanAmount** <=10000))  
  
 {  
 **if**(period >=1 && period <= 3 ){  
 **annualRate** = 8;  
  
 }

else

{

**annualRate** = 5;

}  
 }  
 **else** {  
 **throw new** IllegalArgumentException();  
 }  
  
  
  
 **monthlyInterestRate** = **annualRate** / 100.0 / **MONTHS\_IN\_YEAR**;  
 }  
  
 *//Sets the loan period of this loan.* **private void** setPeriod(**int** periodInYears)  
 {  
 **numberOfPayments** = periodInYears \* **MONTHS\_IN\_YEAR**;  
 }  
  
  
  
  
}