Insurance Calculation - Work with Polymorphism

Town's famous insurance company has an application for maintaining insurance details of their customers.

Requirement:

Calculate the premium for the "Life Insurance" and "Motor Insurance" policies of their customers.

Implement the following classes :

a) class Insurance

Field Name	Datatype	Access Specifier
insuranceNo	string	private
insuranceName	string	private
amountCovered	double	private

Property Name	Datatype	Access Specifier
InsuranceNo	string	public
InsuranceName	string	public
AmountCovered	double	public

b) **class MotorInsurance** which is a child of class Insurance

Field Name	Datatype	Access Specifier
idv	double	private
depPercent	float	private

Property Name	Datatype	Access Specifier
Idv	double	public
DepPercent	float	public

Method Name	Argument	Return Type	Access Specifier	Responsibilities
calculatePremium	N/A	double	public	Calculates premium based on formula given below, **Idv = AmountCovered - ((AmountCovered * DepPercent) / 100);** **then, the premium is,** **3% of the Idv value, return the calculated premium.**

c) **class LifeInsurance** which is a child of class Insurance

Field Name	Datatype	Access Specifier
policyTerm	int	private
benefitPercent	float	private

Property Name	Datatype	Access Specifier
PolicyTerm	int	public
BenefitPercent	float	public

Method Name	Argument	Return Type	Access Specifier	Responsibilities
calculatePremium	N/A	double	public	Calculate the premium based on formula given below, Subtract the BenefitPercent from the AmountCovered and divide the result by PolicyTerm That is, AmountCovered - ((AmountCovered* BenefitPercent)/100)) / PolicyTerm;

Methods in Program.cs

Method Name	Argument	Return type	Access Specifier	Responsibilities
Main	string[] args	void	public static	From the user get the following inputs, insuranceNo, insuranceName, amountCovered and insurance option '1' or '2' If '1' then, it is a **Life Insurance**, then additionally ask the following inputs, **policyTerm, benefitPercentage** If '2' then, it is a **Motor Insurance**, then additionally ask the following inputs, **depPercentage (depreciation percentage)**

				Get the values from user as shown in sample input and invoke the method 'addPolicy' accordingly. After getting the values from user, assign it to Life Insurance or Motor Insurance object based on the user option. Pass this object to 'addPolicy' method. So that 'addPolicy' will have access to insuranceNo, insuranceName, amountCovered attributes. If option is 1, create an object for LifeInsurance and call 'addPolicy' Method If option is 2, create an object for MotorInsurance and call 'addPolicy' Method
addPolicy	**Insurance** ins, **int** opt	double	public	Based on opt, 1 ==> call the **'calculatePremium'** method using **LifeInsurance** reference. 2 ==> call the **'calculatePremium'** method using **MotorInsurance** reference. **Return the calculated premium**.

Sample Input/Output:

S.No	Sample Input & Output
1	**Insurance Number :** LI23456 **Insurance Name :** KisanVikas **Amount Covered :** 1000000 **Select** **1.Life Insurance** **2.Motor Insurance** 1 **Policy Term :** 10 **Benefit Percent :** 12 **Calculated Premium :** 88000
2	**Insurance Number :** MO87657 **Insurance Name :** MotorPolicy **Amount Covered :** 800000 **Select** **1.Life Insurance** **2.Motor Insurance** 2 **Depreciation Percent :** 8 **Calculated Premium :** 22080