RIT | Golisano College of Computing and Information Sciences
School of Information

ISTE-120 - Computational Problem Solving for the Information Domain I
Homework Assignment 6 (HW06)

DELIVERABLE

Zip your files together and submit the zipfile to the appropriate MyCourses Assignment folder. Homework MUST be submitted on time to receive full credit. Homework submitted to the "late" folder will receive a maximum grade of 80%. Homework not submitted to either folder will receive no credit.

ASSIGNMENT

This assignment is to write a program to calculate car purchase information. The program will require the use of Strings (including the `substring` method which you must learn about via the Java API), escape characters, the formatting of numbers using the `printf` (or `String.format`) methods, calculating values and the `Scanner` class.

`NewCar`

Create a class called `NewCar` whose constructor accomplishes the following:

1. Takes in three String arguments for a car's year, make and model
2. Creates a String that has the full car description in it
   e.g. `2019 Ford Escape`
3. Creates an abbreviation for the car that has the last two digits of year and the first letters of the make and model
   e.g. `19FE`
4. Initializes all other attributes to an initial value (0 or null)

Create a method called `calcFinalPrice` that does the following:

1. Takes three double arguments for the sticker price, discount and sales tax rate
2. Returns final price calculated as: `sticker_price - discount + sales_tax`
3. The sales tax is applied to (`sticker_price - discount`).

Often, car dealers offer zero interest loans for the purchase of a new car. Create a method called `calcZeroPctMonPmt` that takes in an `int` argument for the number of months and returns the calculated monthly payment based on the final price.

Create a `toString` method that takes in no arguments and returns the following string:

`You want to purchase a <description> Abbreviation: <abbreviation>`

Full car `<description>` and `<abbreviation>` were calculated in the constructor.

e.g `You want to purchase a "2019 Ford Escape" Abbreviation: "19FE"`

Note that all classes already have an inherited `toString()` method. This method provides some identifying information about the class. In this case, the inherited method is being **overridden** to produce a String that has some meaningful information.

DETAILS

1. Submit all files to the MyCourses assignment folder
2. All calculations must be done in the `NewCar` class
3. `Scanner` should be used for input
4. Proper data types should be used
5. A sample run is shown below:

```
Enter the car's Year, Make and Model: 2019 Ford Escape
Enter the Sticker Price: 35560
Enter the Discount: 1629
Enter the Sales Tax Rate: 8
Enter the Number of Months at Zero Percent Interest: 60

You want to purchase a "2019 Ford Escape" Abbreviation: "19FE"
Final Price: 36645.48
Monthly Payment at zero percent:   610.76
```

Name: _____

Homework 6 Grade Sheet

New Car	Point Value	Points Earned
NewCar Class	60	

• Appropriate attributes used
• Constructor
  ○ Correct arguments are used
  ○ Full car name calculated correctly
  ○ Abbreviation calculated correctly
  ○ Other attribute(s) initialized
• calcFinalPrice method
  ○ Correct arguments used
  ○ Calculation correct
  ○ Appropriate return type
• calcZeroPctMonPmt
  ○ Correct arguments used
  ○ Correct calculation
  ○ Correct return type
• toString method
  ○ No argument
  ○ Appropriate String is calculated including “”
  ○ Correct return type
	
	2
	5
	5
	3
	
	5
	5
	5
	
	5
	5
	5
	
	5
	5
	5	

NewCarTester class	40	
• Year/make/model obtained correctly using Scanner class • NewCar object created correctly • Sticker price obtained correctly using Scanner class • Discount obtained correctly using Scanner class • Sales tax rate obtained correctly using Scanner class • Number of months obtained correctly using Scanner class • Calculated values obtained from NewCar object • Numeric values formatted correctly using printf • Output appears as specified	5 5 3 3 3 3 3 5 5	
Total Points	100	

Note: If the program fails to compile, a grade of zero will be given for the assignment. A clean compilation means that the compiler generates no warning messages.

Additional Comments: