

***C# BASICS***

**Training Assignments**

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|  | **CODE: Net.M.A011**  **TYPE: MEDIUM**  **LOC: 190**  **DURATION: 90 MINUTES** |
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# Day 4: Assignment 11: C# Basic Project Practice

**Objectives:**

* Understand and practice with Classes, Object, Access Modifier, Constructors, supper class, this keyword.
* Practice code in Visual Studio.
* Follow coding convention.

**Business needs:**

* TBD

**Prerequisites:**

* Working environment: Visual Studio 2013 or higher.Practice code in Visual Studio
* Each exercise is one project inside 1 solution.

**Technologies:**

The product implements one or more technology:

* C# Basic
* Control of Flows
* OOP

1. **Exercise 1:**

Create a class called **Book** to represent a book. A Book should include four pieces of information as:

* instance variables‐a book name.
* an ISBN number.
* an author name and a publisher.

Your class should have a constructor that initializes the four instance variables.

In addition, provide a method named **GetBookInformation** that returns the description of the book as a String (the description should include all the information about the book). You should use *this* keyword in member methods and constructor.

**Estimated time**: 30 mins

1. **Exercise 2**

Create a class called **Employee** that includes three pieces of information as instance variables:

* a first name (type String),
* a last name (type String) and.
* a monthly salary (double)

Your class should have a constructor that initializes the three instance variables. Provide a set and a get method for each instance variable. If the monthly salary is not positive, set it to 0.0.

**Estimated time**: 30 mins

1. **Exercise 3**

Create a class called **Employee** that includes three pieces of information as instance variables

* Decimal speed;
* Double regularPrice;
* String color;
* Double GetSalePrice();

Create a sub-class of Car class and name it as **Truck**. The Truck class has the following fields and methods:

* Int weight;
* double GetSalePrice(); //If weight>2000,10% discount. Otherwise, 20% discount

Create a sub-class of Car class and name it as **Ford**. The Ford class has the following fields and methods.

* Int year;
* Int manufacturerDiscount;
* double GetSalePrice(); //From the sale price computed from Car class, subtract the manufacturer discount

Create a sub-class of Car class and name it as Sedan. The Sedan class has the following fields and methods.

* Int length;
* double GetSalePrice(); // If length > 20 feet, 5% discount. Otherwise, 10% discount.

Create MyOwnAutoShop class which contains the main() method. Perform the following within the main() method.

* Create an instance of Sedan class and initialize all the fields with appropriate values. Use base(...) method in the constructor for initializing the fields of the super class;
* Create two instances of the Ford class and initialize all the fields with appropriate values. Use base(...) method in the constructor for initializing the fields of the super class;
* Create two instances of Truck class and initialize all the fields with appropriate values. Use base(...) method in the constructor for initializing the fields of the super class.

**Display the sale prices of all instance.**

**Estimated time**: 30 mins