



C# BASICS

Training Assignments


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RECORD OF CHANGES

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1.	01/Oct/2018	Create new	Draft		
2.	01/Jun/2019	Update template	Fsoft template	DieuNT1	

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Assignment 6: Basic Project Practice

Objectives:

- » Understand and practice with Classes, Objects.
- » Understand and practice with Inheritance, Encapsulation, Polymorphism, Abstraction.
- » Understanding the main difference between method overloading and overriding, between abstract class and interface.

Business needs:

Create a Window Console application bases on OOP, Exception Handling, Collection to manage Human Resource (HR Management System).

Working requirements:

- » Working environment: Visual Studio 2013 or higher.
- » Delivery: Source code packaged in a compress archive.

Technologies:

The product implements one or more technology:

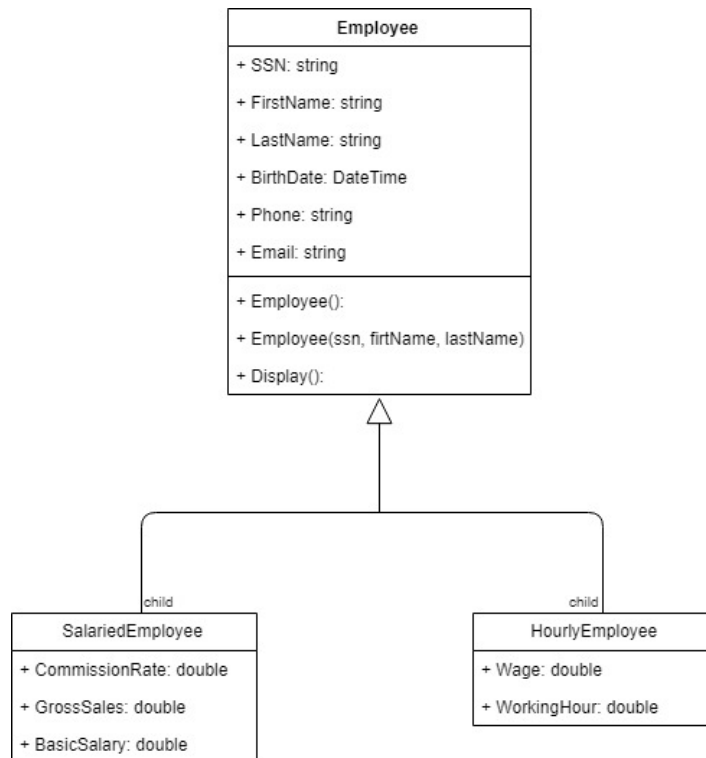
- » OOP
- » Exception Handling
- » Collection
- » Control of Flows

Store Data:

- » Data stored in collection classes.

Problem Descriptions:

For the class hierarchy is as follows, let's create classes install this class diagram to be able to relationship between it.



- Employee is an abstract parent class and has six fields: *SSN*, *FirstName*, *LastName*, *BirthDate*, *Phone*, *Email*;
- A Salaried Employee is paid annually. Salaried employees are usually supervisors, managers, or professional employees who work on an annual basis and are not paid an hourly rate. SalariedEmployee is a derived class of Employee that has more 3 fields: *CommissionRate*, *GrossSales*, *BasicSalary*;
- HourlyEmployee: Unlike a salaried employee who is paid a flat salary regardless of how many hours worked during a work month, an hourly employee is paid an hourly wage for each hour worked. This is a concrete class that is a subclass of Employee and adds two fields: *Wage*, *WorkingHour*;

Noting that: each parent class and derived class has a constructor, getter and setter method for each properties if that need and a **ToString()** method.

Business rules:

- BirthDate : correct date format (dd/MM/yyyy);
- Phone: minimum 7 positive integers;
- Email: correct email format.

Software Requirements:

The system allows users to select a menu-based feature in the console application according to the following requirements:

```
C:\Users\cong\source\repos\ConsoleApp1\ConsoleA...
===== Assignment 06 - EmployeeManagement =====
Please select the admin area you require:
1. Import Employee.
2. Display Employees Information.
3. Search Employee.
4. Exit.
Enter Menu Option Number: 1
===== Import Employee =====
1. Salaried Employee.
2. Hourly Employee.
3. Main Menu.
Enter Menu Option Number: 1
```

- » **Input data from the keyboard:** Allow users to create a list of employees. Users can be select employee type when entering information.
- » **Display employees:** Displays information about each object polymorphically. The objects are stored in an Employee array.
- » **Employee Search:**
 - Search for employees by enter the employee type(Salaried, Hourly).
 - Enter the employee's name, display detailed information about the employee

```
C:\Users\cong\source\repos\ConsoleApp1\ConsoleApp1\bin\Debug\ConsoleApp1.exe
===== Assignment 06 - EmployeeManagement =====
Please select the admin area you require:
1. Import Employee.
2. Display Employees Information.
3. Search Employee.
4. Exit.
Enter Menu Option Number: 1
===== Search Employee =====
1. By Employee Type.
2. By Employee Name.
3. Main Menu.
Enter Menu Option Number: 1
Enter Employee Type: Hourly
SSN      FirstName  LastName  BirtDate  Phone      Email      Wage      WorkingHour
001      Cong       Dinh      07/17/2019 0123456789 congdx@fsoft.com.vn 3.4      207.8
```

Technical Requirements:

- » Write on console application, comply with Fsoft coding conventions
- » Solution name must be **NPL.M.A006**.
- » Must create a project called **NPL.M.A006.Exercise**.

Estimated time: 180 mins