

# Class-Components-Exercise

*Due by 01-25-2017 11:00AM*  
*E1,E2,E3,E4必做， E5， E6选做*

Class components include field, property, method, constructor. In this exercise, you will practice how to use each component.

## E1: write a Person class.

Each Person object can have different nationality, different gender, different race. You need to write constructor and use “this” keyword.

本题训练constructor 和 “this” 关键字

## E2:

write a Person class. In Person class, you should have `_name` field, `_age` field, and `_gender` field and respective properties. You need to write property to make the `_name` of Person can only be “John”. As for the `_age` field, you keep to keep `_age` of Person is between [0,120]. `_gender` can only be female or male.

本题训练如何用property 保护字段

## E3:

在E1 和E2 的基础上， 在Person class 加入method: `GetAllInfor()`; 在这个method 里面打印出所有property 的信息。

## E4:

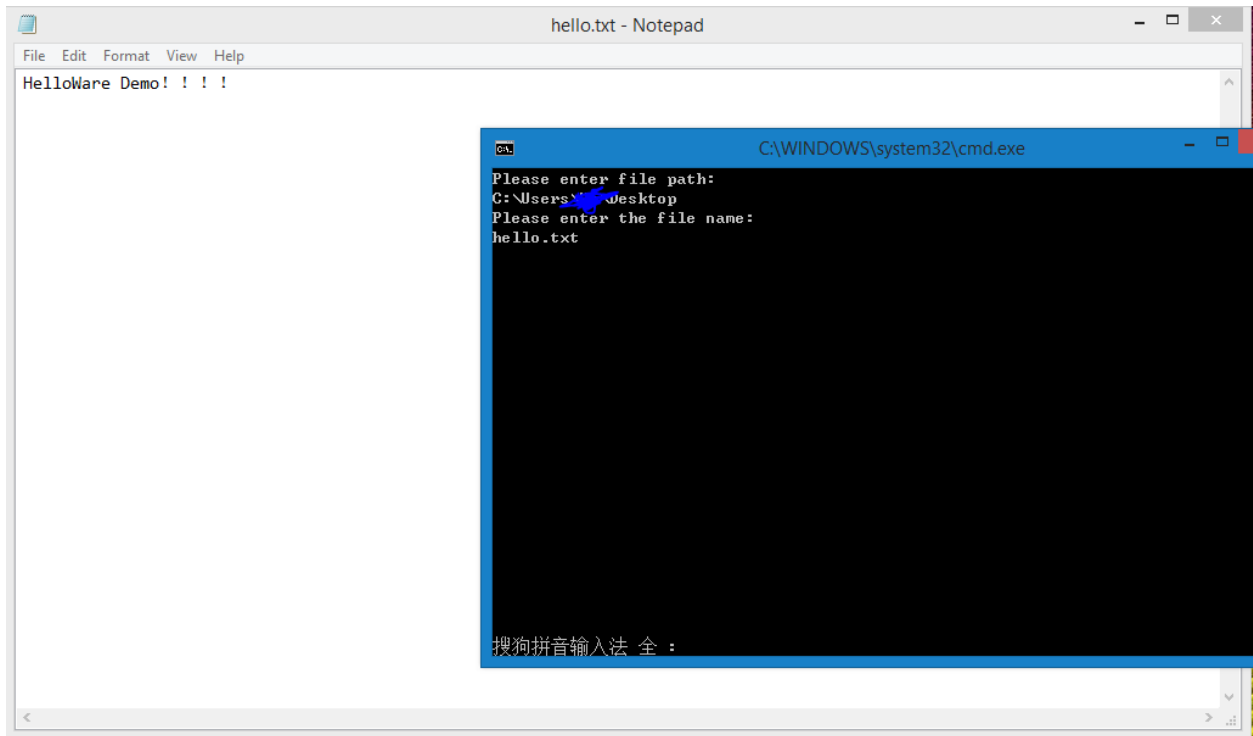
训练Inheritance Write an abstract class Animal and at least 3 child classes inherited from Animal: Dog, Cat, Bird, ... Each child class should override `Bark()` method in abstract class Animal.

本题训练如何继承父类, 并且override 父类里面的abstract or virtual methods.

## (Optional) \*\*\*E5:

打开文件练习。write a class FilerOpener. In this class, you need to write the filePath and fileName from console. Your code needs to at least open 3 types of files (".txt", ".avi", ".mp4")

Demo:



这一题练习如何打开文件。需要自己搜索。因为进程还没讲到，给大家写好了OpenFile() method.

```
//使用这个函数 用来打开指定的文件
public void OpenFile()
{
    ProcessStartInfo psi = new ProcessStartInfo(this.FilePath + "\\" + this.FileName);
    Process pro = new Process();
    pro.StartInfo = psi;
    pro.Start();
}
```

## (Optional) \*\*\*E6:

自己写一个石头，剪刀，布游戏。玩家 vs 电脑

Demo（只是example, 帮助大家理解题意。大家自己设计自己界面）：

初始界面：



The image shows a Windows-style window titled "Form1" with a blue title bar and standard minimize, maximize, and close buttons. The main content area is light gray and contains the following elements:

- Top left: The text "玩家出:" followed by a label "label2".
- Top right: The text "电脑出:" followed by a label "label4".
- Center: The text "结果:" followed by a label "label6".
- Bottom: Three buttons arranged horizontally, labeled "石头" (Rock), "剪刀" (Scissors), and "布" (Paper).

玩家选择后界面：

Form1

玩家出: 石头 电脑出: 石头

结果: 平手

石头 剪刀 布