

## PHP Exercises – Classes and Objects

Hints about PHP syntax are on the back of this document.

### One

In your web publishing area, create a folder/directory called *lab9*. You will need to place all the files and folders used in this lab inside this folder so as to not conflict with previous lab work.

Using an appropriate text editor, create a file called *class.Person.php*

Inside the file, write a class called *Person* with the seven properties shown in the Person class picture (right). All fields are strings, with the date of birth being stored in a string in “YY-MM-DD” format.

Add appropriate methods for the class (a constructor and get/set pairs for each property).

### Two

Create a new file called *usesPerson.php*. Your file should have the following structure:

```
require_once your class.Person.php file
create a Person object called $myPerson
Give the Person object values for name, date of birth and address using the constructor
<html>
<head>
<title>Person example</title>
</head>
<body>
Print the object out using appropriate print / get methods
</body>
</html>
```

Upload the files and test them out.

### Three

A student is a descendant of person, but has extra properties

- kulD – student identifier
- courseName – full name of course (i.e. BSc Business Information Technology)
- currentYear -1,2,3 or 4

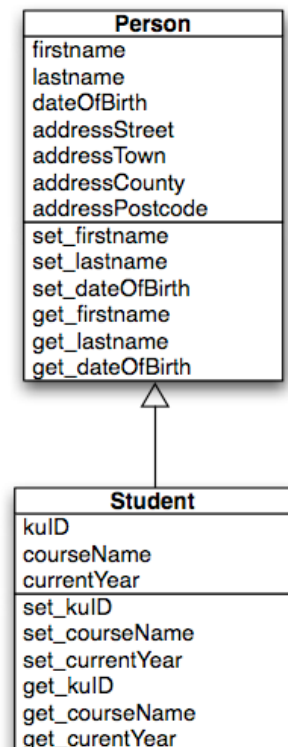
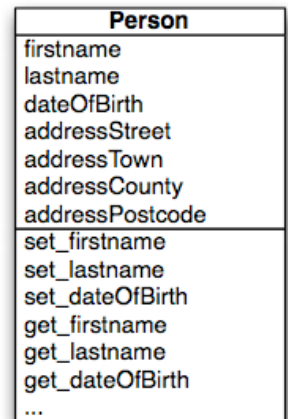
In a new file called *class.Student.php* create a descendant of *Person* that extends the parent class adding the extra methods along with appropriate get/set properties.

Your student constructor function should reuse the Person constructor where appropriate.

### Four

Save the file *usesPerson.php* as a new file *usesStudent.php*.

In this file, change the code so that a student object is declared, appropriate (made up) values are passed into the object through the constructor, then print the object out.



**Five**

Both the emp class and the empDB class are available from the website.

If you haven't already done so – edit the empDB class so that it has your mysql details (username password etc).

Write a simple program that demonstrates that an empDB object gets the appropriate person from the database by printing an employees details to the screen

**Six (Harder)**

Look up the syntax for the destructor method of a class- this function will be called just before the object is deleted, typically when the PHP page has finished processing.

Write a destructor function for the emp class which updates the SQL emp table with changed values – you will need to construct a SQL Update statement and send it off to the database using the appropriate mysql routines.

**Seven**

Write a dept class that matches the attributes of the DEPT table in the emp database, along with a small test program to show it works.

**Eight (Harder)**

Write a empDeptDB class that inherits from both the emp and dept class. This will need to get information from both the emp and dept tables using a single SQL statement that uses a join

Demonstrate that this class works by writing a small test program

To create an object of a given class, use the `new` keyword:

```
$object = new Class;
```

Once you have an object, you can use the `->` notation to access methods and properties of the object:

```
$object->propertyname  
$object->methodname([arg, ... ])
```

The syntax for a class definition:

```
class classname [ extends baseclass ]  
{  
  [ var $property [ = value ]; ... ]  
  
  [ function functionname (args) {  
    // code  
  }  
  ...  
]  
}
```

To inherit the properties and methods from another class, use the `extends` keyword in the class definition, followed by the name of the base class

```
class $a {  
  var ...  
}  
  
class $b extends $a {  
  var ...  
}
```

If a derived class has a property or method with the same name as one in its parent class, the property or method in the derived class takes precedence over, or *overrides*, the property or method in the parent class.

To access an overridden method, use the `parent::method( )` notation.

You may also provide a list of arguments following the class name when instantiating an object:

```
$newA = new A(values...);
```

These arguments are passed to the class's *constructor* which is a function with the same name as the class in which it is defined. Here's a constructor for the `a` class:

```
class a {  
  function a (values) {  
    ...  
  }  
}
```