UFCFR5-15-3 Advanced Topics In Web Development II

Workshop (OO Vehicle Classes & Objects)

TASK 1a – Implementation of class "LandVehicle"

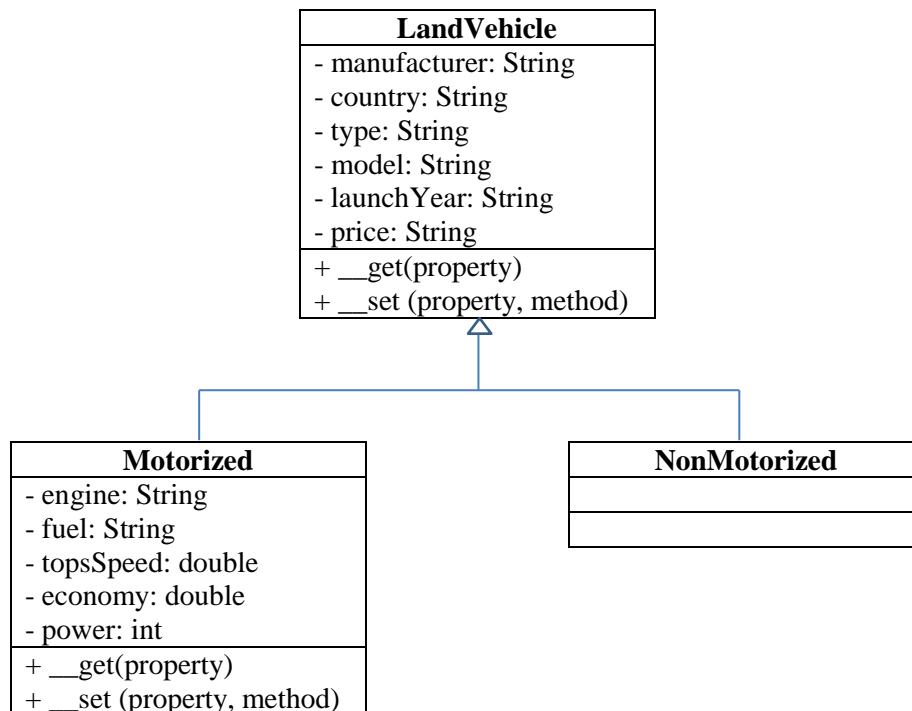| LandVehicle |
| --- |
| - manufacturer: String |
| - country: String |
| - type: String |
| - model: String |
| - launchYear: String |
| - price: String |
| + __get(property) |
| + __set (property, method) |

(vehicle_class.php)

1. Write the code to create the class above.
2. Code a constructor method (__construct) into the LandVehicle class that requires and sets the six (private) properties: (manufacturer, country, type, model, launchYear, price).
3. Build in an interceptor (magic) method __get into the LandVehicle class that return these properties (attributes).
4. Build in a interceptor (magic) method __set that re-sets these properties. The __set method usually has the following form

```
public function __set($var, $val){
    $this->$var = $val;
}
```

and expects two parameters: the property name & new value to set.

5. Code and instantiate a test object of the LandVehicle type. This should test both the __get and __set magic methods.

TASK 1b – Implementation of the two sub-classes, "Motorized" and "NonMotorized"

LandVehicle
- manufacturer: String
- country: String
- type: String
- model: String
- launchYear: String
- price: String
+ __get(property)
+ __set (property, method)

Motorized
- engine: String
- fuel: String
- topsSpeed: double
- economy: double
- power: int
+ __get(property)
+ __set (property, method)

NonMotorized

6. Implement step 1 – 4 above for the Motorized* and NonMotorized classes remembering to call `parent::__construct(manufacturer, country, type, model, launchYear, price`) in each child class `__construct`.

7. Code and instantiate test objects for the Motorized & NonMotorized types.

Task 2 (FURHER TASKS and TASKS FOR HOME)

1. Re-factor the Motorized class to include a new properties `fuelCapacity` and a new method called "`range`" to return the range of a vehicle which is calculated as:

   `fuelCapacity * mpg`[1]

2. Add a new property `image` to the LandVehicle class that points to an image on disk and write a php script (vehicle.php) that uses `http get` as in

   `http://localhost/W2/vehicle.php?model='model of vehicle'`

   to generate web pages for the following two vehicles.

Sample Output

manufacturer: Toyota
country: Japan
type: bus
model: LPG Coaster
launchYear: 2007

image:
price: HK$501,000
fuelCapacity: 122 gallons
engine: Toyota L4 OHV
fuel: gas
topSpeed: 110 mph
economy: 2.6 mpg

---

[1] Mpg is the unit of economy. For example, range of LPG Coaster = 122 gallons x 2.6 mpg = 317 miles

power: 113 bhp

torque: 226 lb ft

manufacturer: Lotus

country: Great Britain

type: car

model: Evora S

launchYear: 2010

image:

price: £48550 to £57550

fuelCapacity: 12 gallons

engine: Toyata V6

fuel: petrol

topSpeed: 172 mph

economy: 27.1 mpg

power: 350 bhp

torque: 295 lb ft

manufacturer: Mountain Goat

country: United States

model: Route 29

launchYear: 2009

image:

price: $700