Practice 07 - Classes and Inheritance

## WWPD

### Q1: Using the Car class

Here is the full definition of the Car class:

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| **class** **Car**(**object**):  num\_wheels = 4  gas = 30  headlights = 2  size = 'Tiny'  **def** **\_\_init\_\_**(**self**, make, model):  **self**.make = make  **self**.model = model  **self**.color = 'No color yet. You need to paint me.'  **self**.wheels = Car.num\_wheels  **self**.gas = Car.gas  **def** **paint**(**self**, color):  **self**.color = color  **return** **self**.make + ' ' + **self**.model + ' is now ' + color  **def** **drive**(**self**):  **if** **self**.wheels < Car.num\_wheels **or** **self**.gas <= 0:  **return** 'Cannot drive!'  **self**.gas -= 10  **return** **self**.make + ' ' + **self**.model + ' goes vroom!'  **def** **pop\_tire**(**self**):  **if** **self**.wheels > 0:  **self**.wheels -= 1  **def** **fill\_gas**(**self**):  **self**.gas += 20  **return** 'Gas level: ' + str(**self**.gas) |

What would Python print?

If an error occurs, type Error. If nothing is displayed, type Nothing.

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| >>> deneros\_car = Car('Tesla', 'Model S')  >>> deneros\_car.model  ‘Model S’  >>> deneros\_car.gas = 10  >>> deneros\_car.drive()  ‘Tesla Model S goes vroom!’  >>> deneros\_car.drive()  ‘Cannot Drive’  >>> deneros\_car.fill\_gas()  ‘Gas level: 20’  >>> deneros\_car.gas  20  >>> Car.gas  30  >>> deneros\_car = Car('Tesla', 'Model S')  >>> deneros\_car.wheels = 2  >>> deneros\_car.wheels  2  >>> Car.num\_wheels  4  >>> deneros\_car.drive()  ‘Cannot drive!’  >>> Car.drive()  Error  >>> Car.drive(deneros\_car)  ‘Cannot drive’ |

For the following, we reference the MonsterTruck class, also in car.py:

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| **class** **MonsterTruck**(**Car**):  size = 'Monster'  **def** **rev**(**self**):  print('Vroom! This Monster Truck is huge!')  **def** **drive**(**self**):  **self**.rev()  **return** Car.drive(**self**) |

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| >>> deneros\_car = MonsterTruck('Monster', 'Batmobile')  >>> deneros\_car.drive()  ‘Vroom! This Monster Truck is huge!’  ‘Monster Batmobile goes vroom!’  >>> Car.drive(deneros\_car)  ‘Monster Batmobile goes vroom!’  >>> MonsterTruck.drive(deneros\_car)  ‘Monster Batmobile goes vroom!’  >>> Car.rev(deneros\_car)  Error |