

# CSC148 Worksheet 6 Solution

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April 18, 2020

## Question 1

- The two classes already defined are: Vehicle and SuperDuperManager

The additional classes required to create for this exercise are: Car, Helicopter and MagicCarpet

Car, Helicopter and MagicCarpet are child classes of Vehicle.

## Question 2

- a. The following are attributes possessed by all vehicles

- type
- initial\_position
- moves\_to
- move\_diagonally
- fuel\_usage

### Correct Solution:

The following are attributes possessed by all vehicles

- position
- fuel

- b. No. Referencing the following code in *worksheet\_6\_starter\_code.py*,

```

1  class Vehicle:
2      ...
3
4      def __init__(self, initial_fuel: int,
5                    initial_position: Tuple[int, int]) -> None:
6          ...
7
8          self.fuel = initial_fuel
9          self.position = initial_position
10

```

we can come up with the following examples.

- Vehicle(100, (10,20))
- Vehicle(50, (5, 10))

Here, we can see the two vehicles have different value of fuel and initial position.

- c. *fuel\_needed* not implemented because each child classes have different fuel consumption rate, and the method is to be defined by the child classes by overriding it.
- d. The following methods must be defined in each of its subclasses

- Car
  - fuel\_needed
  - move
- Helicopter
  - fuel\_needed
  - move
- MagicCarpet
  - \_\_init\_\_
  - move

Question 3

Question 4

Question 5

Question 6

Question 7

Question 8