

Dynamic Modelling Course - TEP4290: Warm-up 3

The point of this exercise is for you to practice what you have learned in the recommended videos.

- PY4E: <https://www.py4e.com/lessons/memory>
- Whirlwind tour of python: <https://jakevdp.github.io/WhirlwindTourOfPython/02-basic-python-syntax.html>
- Whirlwind tour of python: <https://jakevdp.github.io/WhirlwindTourOfPython/04-semantics-operators.html>

You will perform some basic operations that are designed to help you get comfortable with Python. The exercise is not graded and will be discussed in the next exercises session in detail to clarify any doubts you may still have.

Good luck!

Tasks

Answer the questions or complete the tasks outlined in bold below, use the specific method described if applicable.

Variables, expressions, and statements

What is 7 to the power of 4?

```
In [1]: print(7 ** 4)
```

2401

**** Given the variables:****

```
planet = "Earth"  
diameter = 12742
```

Print the following string: **

```
We live on planet Earth  
Its diameter is 12742
```

```
In [3]: planet = 'Earth'
```

```
diameter = '12742'
```

```
In [7]: print('We live on planet',planet)
        print('which has a diameter of', diameter, 'kilometers')
```

We live on planet Earth
which has a diameter of 12742 kilometers

What type is the variable "planet"

```
In [8]: type(planet)
```

Out[8]: str

Calculate the speed of a car that can travel 200 km in 1,4h. Assign the value to a variable with a mnemonic name and print your result.

```
In [9]: distance = 200
        time = 1.4
        speed = distance/time
        print('The speed is', speed, 'km/h')
```

The speed is 142.85714285714286 km/h

What type does this object have? Transform it an integer and assign it to a new variable. Print the new value and type of the variable.

```
In [10]: speedint = int(speed)
         print('The speed is', speedint, 'and the type is', type(speedint))
```

The speed is 142 and the type is <class 'int'>

Now that you changed the type, are the two variables equal? Discuss why or why not by using a comment after the calculation with the symbol #

```
In [14]: print(speed == speedint)
         # when converting a float to an int, the decimal part is removed, making the two va
```

False

Check whether the rounded speed is smaller than the original value

```
In [12]: print(speedint < speed)
```

True

Asume that the speed is now 1.2 times faster. Re-assign the value of the variable "speed" to the new value and print your results

```
In [13]: speed = speed * 1.2
         print(speed)
```

171.42857142857142

Well done!