Download from the Canvas the Python script

- The Python script ***celestial.py***. It contains a dictionary and functions to calculate the weight on different planets
- The data set temp.dat

Activity - Edit the module celestial.py and write docstrings

celestial.py contains a dictionary and functions to calculate the weight on different planets

- The dictionary key is a planet name, and the value the **surface acceleration due to gravity (m/s^2)**

- Function ***planet_weight*** takes two parameters: a planet name (a string), and a weight on the earth (real number)) and calculates and returns the planet name and the weight on that planet.

- Function ***planet_weight1*** takes no parameters and uses two input functions to ask the user to enter a weight on Earth, and to ask the user to enter a planet name. The function calculates calculates and prints the weight on that planet.

Edit celestial.py and in it:

- Include a **module doc string** that describes what this module does
- Include a **doc string in each of the functions** that briefly describes what a function does

- At the IPython console (or at python3 shell in the terminal) write the following to see the documentation page of the module.

```
import celestial
help(celestial)
```

Activity - Edit the module celestial.py to test its functions

Edit again celestial.py and in it:

Test the two functions by using the if __name__ == "__main__": statement.

Test the two functions ***planet_weight*** and ***planet_weight1*** by calculating the weight on venus for a weight on the earth of 100.0 Kg. These results should be displayed to screen.

```
Weight on venus is 90.52 Kg
Enter a weight on the earth 100
Enter a planet name: venus
Weight on venus is 90.52 Kg
```

Activity - using argv to test functions in your module

Edit your module **celestial.py** again and test the two functions by calculating the weight on venus for a weight on the earth of 100.0

The arguments, venus and 100, for the *planet_weight* are now provided from the command line like this `venus 100`

Do NOT add any input() function, and DO NOT modify the existing functions.

Submit this version of celestial.py to A15

Activity - Use module celestial.py

Make a script called **A15-use-celestial.py** and in it do the following:

a. Import the **celestial** module. You can use function or generic import

b. Access values in dictionary Dg of the celestial module and print to screen the surface acceleration due to gravity of the planet jupiter. Print this formatted output

```
The surface acceleration due to gravity of jupiter is 24.79 m/s2
```

c. Call function *planet_weight* of the celestial module to calculate the weight on jupiter for a weight on earth of 100 Kg. This result should be displayed to screen:

```
Weight on jupiter is 252.70 Kg
```

d. Use list comprehension to calculate the weights on each planet for a weight of 100 Kg on Earth. You should use function planet_weight within the list comprehension. Here part of the code you should complete.

```
T=[ planet_weight( __ ,100)  for ______ ]
```

Print results to screen

```
[('mercury', 37.71661569826707), ('venus', 90.51987767584099),
('earth', 100.0), ('mars', 37.920489296636084), ('jupiter',
252.70132517838 94), ('saturn', 106.42201834862385), ('uranus',
88.58307849133537), ('neptune', 113.65953109072375)]
```

Submit to A15:

- **celestial.py (the one with argv)**
- **A15-use-celestial.py**