

HW 10: Elemental Encyclopedia

This week you are going to create an elemental encyclopedia. You will type in the element's name (in a *case-insensitive* way), and it will output information on the element, such as this:

```
Please enter an element: hydrogen
Hydrogren (H)
Atomic Number: 1
Group: 1
Period: 1
Atomic weight: 1.008 g/mol
Density: 0.00008988 g/cm^3
Melting point: 14.01 K
Boiling point: 20.28 K
Specific heat capacity: 14.304 J/gK
Electronegativity: 2.2
Abundance: 1400 mg/kg
Name origin: composed of the Greek elements hydro- and -gen meaning
'water-forming'
Please enter an element:
```

All the data that you need is to be found in the file `elements.tsv`. The notebook will be called `elements.ipynb`.

It is expected that you will make an `Element` class that contains thirteen different fields (including an element's name, its symbol, etc.). You will ultimately have 118 instances of this object, contained in a dictionary that maps each element's name to the `Element` object that contains it. The `Element` class will need two methods: a constructor, and a `print()` method that prints all the data as shown above.

The program should continue to loop, until the user hits enter. When this happens, it will say goodbye and exit. If the user enters a non-existent element, it should print a friendly error message and continue the loop.

A small amount of extra credit will be offered if your program can accept either an element's name or its symbol as input. This should happen automatically; if the user enters `H`, the program should automatically know that it means hydrogen, without having to ask.

