Day 5: Dictionaries

Problem 1. Without using a loop, print what element is represented by *C,H, B, N, F, Ne*. Add Sodium (Na) and Magnesium (Mg) to the dictionary.

```
chemicalElements = {'H':'Hydrogen','He':'Helium','Li':'
    Lithium','Be':'Beryllium','B':'Boron','C':'Carbon','N':'
    Nitrogen','O':'Oxygen','F':'Fluorine','Ne':'Neon'}
```

Problem 2. Don't use for loops in this question! Print the current recorded temperature for Nigeria, South Africa and Egypt. Add two countries of your choice. Change the recorded temperature for Morocco to 38 degrees, Kenya goes to 29 degrees, and South Africa increses to 31 degrees.

```
temperatureCountries = {'Rwanda': 29, 'Nigeria':28 , 'Kenya':
     23, 'Egypt':37 ,'Morocco': 41 ,'South Africa': 25, 'Mali
    ': 33, 'Ghana':28,}
```

Problem 3. Which countries have temperature over 30 degrees. For those countries print, *it's too hot*. If the temperature is below 25, print *it's too cold*.

Problem 4. Currently we can only store the temperature for a single month. How would you store the temperature average for each month of the year. Ask a tutor if you are unsure.

Problem 5. Given the course name and number of students, what's the total number of students doing computing.

```
courseStudents = {'Java Programming':120, 'Django': 60, '
    Algorithms and Data structures': 58, 'Software
    Engineering': 70}
```

Problem 6. Given students and their exam marks, what's the average for Sofiat? Tom?

```
students = {'Sofiat': [56,89,70,92,67,100], 'Fionnuala'
    :[60,70,100,45,70,76],'Alex':[60,95,90,85,93,45],
'Ify': [55,80,56,45,51,76],'John Paul':[78,100,65,77,91,87],
'Ben': [45,78,65,50,45,87],'Tom':[32,50,45,67,40,80]}
```

Calculate the average for everyone and store it in a new dictionary.

Problem 7. Count the word frequencies in this sentence and store it in a dictionary.

```
sonnet1 = ['from', 'fairest', 'creatures', 'we', 'desire', '
    increase','that', 'thereby', 'beauty','rose', 'might','
    never', 'die','but','as', 'the', 'riper', 'should', 'by',
     'time', 'decease','his', 'tender', 'heir', 'might', '
    bear', 'his', 'memory','but','thou', 'contracted', 'to',
    'thine', 'own', 'bright','eyes','feed','thy','light', '
    flame', 'with','self-substantial','fuel','making','a','
    famine','where', 'abundance','lies','thyself','thy','foe'
    , 'to', 'thy', 'sweet', 'self', 'too', 'cruel']
```

Problem 8. Print the GDP of Rwanda. What's the capital of Zimbabwe? What's the population of Kenya? Print out Uganda's neighbours? Update Rwanda's population to be more accurate. Look up the information forn Tanzania and add it to the dictionary.

```
countriesDict = {'Zimbabwe': {'capital': 'Harare', '
    population': 16, 'neighbours': ['South_Africa', 'Botswana
    ', 'Zambia', 'Mozambique'], 'GDP': 41}, 'Rwanda':{'
    capital':'Kigali','population': 11, 'neighbours':['DRC',
    'Uganda', 'Tanzania', 'Burundi'],'GDP': 30}, 'Nigeria': {
    'capital':'Abuja', 'population': 200, 'neighbours': ['
    Cameroon','Benin', 'Chad', 'Niger'], 'GDP':1221},'Uganda'
    : {'capital': 'Kampala', 'population':41, 'neighbours':['
    Rwanda', 'Kenya','Tanzania','Sudan','DRC'],'GDP': 102}, '
    Kenya':{'capital': 'Nairobi', 'population': 49, '
    neighbours': ['Tanzania', 'Uganda', 'Sudan', 'Somalia', '
    Ethiopia'], 'GDP':190 } }
```

Print out the capitals of Uganda's neighbours if they are in the dictionary.