

## Assignment\_15

**1. How many seconds are in an hour? Use the interactive interpreter as a calculator and multiply the number of seconds in a minute (60) by the number of minutes in an hour (also 60).**

In [1]:

```
60 * 60
```

Out[1]:

```
3600
```

**2. Assign the result from the previous task (seconds in an hour) to a variable called seconds\_per\_hour.**

In [2]:

```
seconds_per_hour = 60 * 60
```

In [3]:

```
seconds_per_hour
```

Out[3]:

```
3600
```

**3. How many seconds do you think there are in a day? Make use of the variables seconds per hour and minutes per hour.**

In [6]:

```
seconds_per_hour * 24
```

Out[6]:

```
86400
```

**4. Calculate seconds per day again, but this time save the result in a variable called seconds\_per\_day**

In [7]:

```
seconds_per_day = seconds_per_hour * 24
```

In [8]:

```
seconds_per_day
```

Out[8]:

```
86400
```

**5. Divide seconds\_per\_day by seconds\_per\_hour. Use floating-point (/) division.**

In [9]:

```
seconds_per_day / seconds_per_hour
```

Out[9]:

```
24.0
```

**6. Divide seconds\_per\_day by seconds\_per\_hour, using integer (//) division. Did this number agree with the floating-point value from the previous question, aside from the final .0?**

In [10]:

```
seconds_per_day // seconds_per_hour
```

Out[10]:

```
24
```

```
Yes
```

**7. Write a generator, genPrimes, that returns the sequence of prime numbers on successive calls to its next() method: 2, 3, 5, 7, 11, ...**

In [11]:

```
def genPrimes():
    primes = []
    n = 2
    last = n

    while True:
        for i in primes:
            if n % i == 0:
                n += 1
```

**break**

**else:**

primes.append(n)

last = n

n += 1

**yield** last

In [12]:

genPrimes()

Out[12]:

<generator object genPrimes at 0x0000025AFFEBB0B0>

In [14]:

**None**

**def** genPrimes():

primes = [2]

**yield** primes[0]

guess = 3

**while** True:

if all(guess%x != 0 for x in primes):

primes.append(guess)

if guess == primes[-1]:

**yield** primes[-1]

guess += 2

In [15]:

genPrimes()

Out[15]:

<generator object genPrimes at 0x0000025AFFEBB4A0>