Homework solutions 4

Homework

- Search the Python standard functions to find out how to convert an integer to its hexadecimal representation. Confirm that 255 (base 10) is FF (base 16).

- Find the module in the Python standard library that is used to handle times and dates
  - Write Python code that prints the current date and time. (Hint, since this is potentially a bit confusing, you will need to use a function named now() in class that is defined within this module.)
  - Print the date/time [value you get from now()] using str() and repr() to format it.

Homework

- Search the Python standard functions to find out how to convert an integer to its hexadecimal representation. Confirm that 255 (base 10) is FF (base 16).

Since Python standard functions are specified, a quick look on http://docs.python.org/library/functions.html leads one to hex()

```
In [102]: hex(255)
Out[102]: '0xff'
```

Homework

- Find the module in the Python standard library that is used to handle times and dates
  - Write Python code that prints the current date and time. (Hint, since this is potentially a bit confusing, you will need to use a function named now() in class that is defined within this module.)
  - Print the date/time [value you get from now()] using str() and repr() to format it.

Looking at the Standard Library web page (http://docs.python.org/library/) brings one to datetime. The module datetime contains a number of types and several submodules. The function now() in submodule datetime.datetime

```
In [103]: import datetime

In [104]: d = datetime.datetime.now()

In [105]: d
Out[105]: datetime.datetime(2011, 5, 23, 23, 1, 53, 215473)

In [106]: str(d)
Out[106]: '2011-05-23 23:01:53.215473'

In [107]: repr(d)
Out[107]: 'datetime.datetime(2011, 5, 23, 23, 1, 53, 215473)'
```

Homework

- Write a function called `product` that accepts 2, 3 or 4 arguments and returns the product of those arguments.

- Write a function that accepts 2, 3 or 4 arguments and returns a tuple of length two where the first item is the product and the second is the sum.
  - Hint: set the default values for the optional parameters to something invalid that you can test for. (None is a great choice for that.)

Homework

- Write a function called `product` that accepts 2, 3 or 4 arguments and returns the product of those arguments.

```
def product(a1, a2, a3=1, a4=1):
    return a1*a2*a3*a4
```

```
In [81]: product(1,2)
Out[81]: 2

In [82]: product(1,2,3)
Out[82]: 6

In [83]: product(1,2,3,4)
Out[83]: 24
```

Homework

- Write a function that accepts 2, 3 or 4 arguments and returns a tuple of length two where the first item is the product and the second is the sum.
  - Hint: set the default values for the optional parameters to something invalid that you can test for. (None is a great choice for that.)

```
def prodsum(a1, a2, a3=None, a4=None):
    sum = a1+a2
    prod = a1*a2
    if a3 is not None:
       sum += a3
       prod *= a3
    if a4 is not None:
       sum += a4
       prod *= a4
    return (prod, sum)
```

```
In [96]: prodsum(1,2)
Out[96]: (2, 3)

In [97]: prodsum(1,2,3)
Out[97]: (6, 6)

In [98]: prodsum(1,2,3,4)
Out[98]: (24, 10)
```