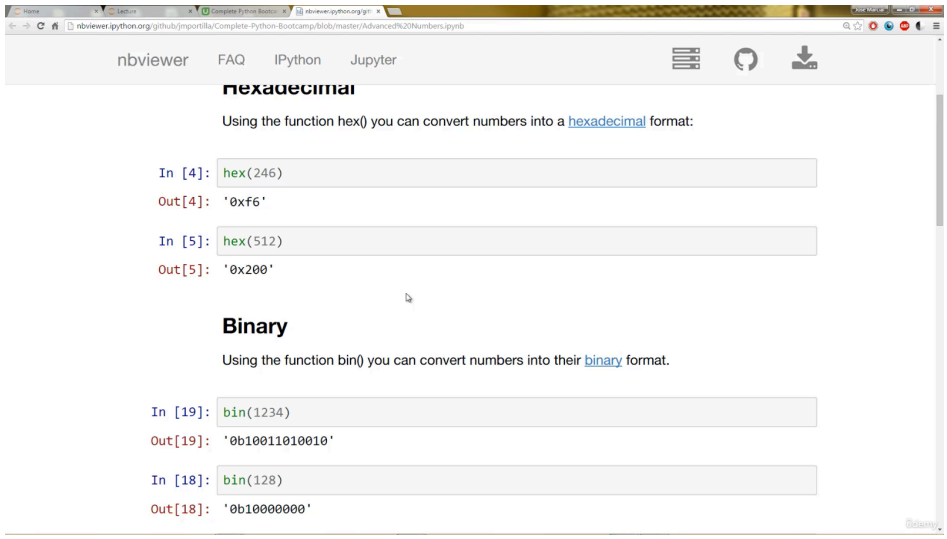
SECTION 20: ADVANCED PYTHON PROJECTS AND DATA STRUCTURES - 41 minutes, 7 parts

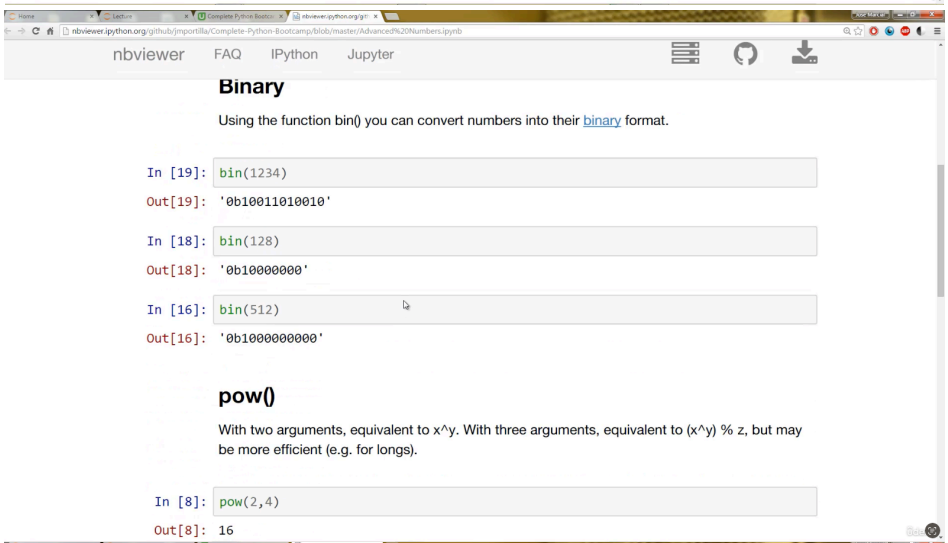
1/7 Advanced Numbers

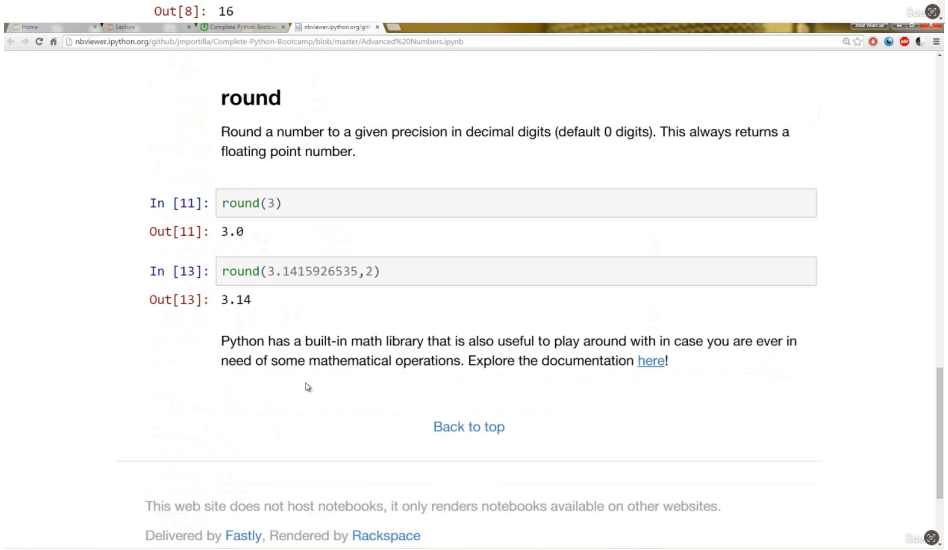
- **outline**
  - -> more representations of numbers in Python
  - -> bultin methods to do with numbers in Python
  - -> hexidecimal numbers / binary numbers
  - -> then the pow() function
  - -> binary numbers
  - -> there are links to the Wikipedia pages for these in the project ipynb file

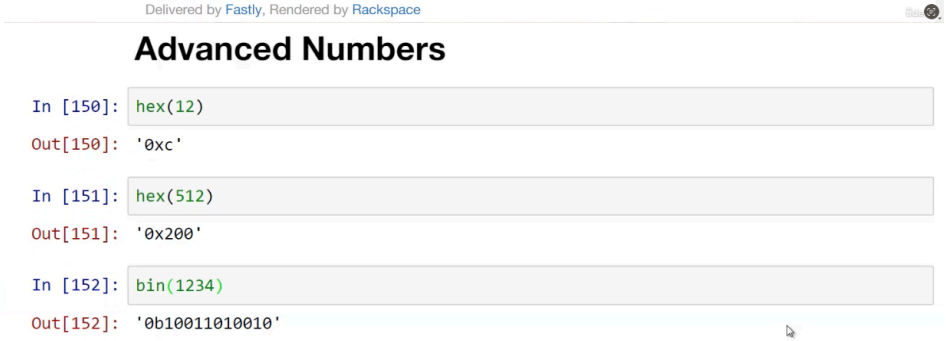
- **advanced numbers**
  - -> hex(12) <- to return a hexadecimal representation of the number 12
  - -> bin(1234) <- to return a binary representation of the number

- **builtin functions**
  - -> ** <- to the power
  - -> pow(2,4) <- 2 to the 4 (this is the same as 2**4)
    - -> for power
  - **-> pow(2,4,3) <- 2 to the 3 mod 3**
  - -> the absolute value function -> abs(2)
  - **-> round(3.1) <- to round a number off to zero decimal points**
    - -> round(3.1223423,2) <- to round the number off to two decimal points
  - -> there is also a math module for more of these functions









```
In [155]: 2**4
Out[155]: 16

In [157]: pow(2,4,3)
Out[157]: 1

In [158]: abs(-3)
Out[158]: 3

In [159]: abs(2)
Out[159]: 2
```


```
In [158]: abs(-3)
Out[158]: 3

In [159]: abs(2)
Out[159]: 2
```


```
In [162]: round(3.9)
Out[162]: 4.0

In [163]: round(3.141592,2)
Out[163]: 3.14
```