Computer Science — Python — HW #6

Assigned on Mon, 2017-02-13. Due on Tue, 2017-02-21.

1. Read chapter 4 of Think Python, 2nd ed.
2. See if you can determine the values of the following Python expressions before evaluating them.
3. [2\*\*p for p in range(0, 5)]
4. [(p, 2\*\*p) for p in range(0, 5)]
5. ['Hello'[k] for k in range(0, 5)]
6. ['KMGTE'[k] + '=10\*\*' + str(3\*k+3) for k in range(0, 5)]
7. **[Turn in]** Write a function called **rps\_winner** that causes all the assert statements in following script to be evaluated without crashing. Try to write it using as few lines as you can.

**Script:**

NONE = 0

ROCK = 1

PAPER = 2

SCISSORS = 3

def **rps\_winner**(a, b):

pass # Replace this line with the body of the function.

assert(rps\_winner(PAPER, PAPER) == NONE)

assert(rps\_winner(PAPER, ROCK) == PAPER)

assert(rps\_winner(PAPER, SCISSORS) == SCISSORS)

assert(rps\_winner(ROCK, PAPER) == PAPER)

assert(rps\_winner(ROCK, ROCK) == NONE)

assert(rps\_winner(ROCK, SCISSORS) == ROCK)

assert(rps\_winner(SCISSORS, PAPER) == SCISSORS)

assert(rps\_winner(SCISSORS, ROCK) == ROCK)

assert(rps\_winner(SCISSORS, SCISSORS) == NONE)

1. **[Turn in]** In books, tables of contents usually consist of list of section names aligned against the left-hand side of the page, with the corresponding page numbers aligned against the right-hand side of the page, often with periods in-between, like so:

Alligators.......................................1

Bears...........................................12

Yaks...........................................437

Zebras.........................................451

Define a function called print\_toc\_line that takes three arguments:

**width:** the number of columns the table of contents is supposed to fill

**name:** the name of the given section of the book

**page\_num:** the first page number of the given section of the book

Define it so that the following lines give rise to the table of contents shown above.

print\_toc\_line(50, 'Alligators', 1)

print\_toc\_line(50, 'Bears', 12)

print\_toc\_line(50, 'Yaks', 437)

print\_toc\_line(50, 'Zebras', 451)

**Note:**

* The function **str** converts integers to strings. For example, str(437) returns the string '437'.
* I'll leave it to your imagination whether some sections were left out of the table of contents above, or whether the author just had a lot to say about bears.