Assignment #4

The 'range' Function

Write definitions for each of the following Python functions, and for each function, include a clear and concise comment to describe its purpose. Use *only* the Python topics covered so far in class.

1. `Power( x, n )`

   The number 'x' raised to the power of the non-negative integer 'n'

   (do *not* use the Python operator '**' here)

```
Power(  2,  4 ) ⇒ 16
Power( -2,  3 ) ⇒ -8
Power(  7,  0 ) ⇒ 1
Power(  0,  0 ) ⇒ 1     (differs from mathematical definition)
Power(  0,  3 ) ⇒ 0
Power( 1.5, 2 ) ⇒ 2.25
```

2. `SmallestFactor( n )`

   The smallest positive factor (apart from 1) of the integer 'n', where $n \geq 2$

```
SmallestFactor( 15 ) ⇒ 3
SmallestFactor( 17 ) ⇒ 17
```

3. `PrintPrimesBelow( limit )`

   Print all prime numbers below the integer 'limit'

   (a positive integer is a *prime number* if it has no positive factors, apart from 1 and itself)

```
PrintPrimesBelow( 20 ) ⇒ 2
                         3
                         5
                         7
                         11
                         13
                         17
                         19

PrintPrimesBelow(  2 ) ⇒ (no output)
```

Program Submission:

Store the function definitions in a file named 'a04.py', and turn it in for grading by typing:

```
submit-cs1117 a04.py
```

Due Date: Fri Oct 9, 11:00am