04.4 - Prime Numbers

A prime number is a number (not including 1) that is only evenly divisible by two numbers: itself and 1. For example, the number 5 is prime because it can only be evenly divided by 1 and 5. The number 6, however, is not prime because it can be divided evenly by 1, 2, 3, and 6. Write a Boolean function named `is_prime` which takes an integer as an argument and returns `True` if the argument is a prime number, or `False` otherwise. Then, in the `main` function, prompt the user to enter a number. If the user enters `-1`, end the program. Otherwise, display a message indicating whether or not the number is prime, using your `is_prime` function to decide which message to display.

Input	Output
Number	Status
1	not prime
2	prime
10	not prime
4001	prime
-1	quit

Table 1: Test data for Exercise 04.4.

Test your program with the data in Table 1. Finally, format your program to match the sample output, character for character, including all white space and punctuation. User input in the sample has been highlighted in Pappy's Purple to distinguish it from the program's output, but your user input does not need to be colored. Save your finished Python program as `prime_numbers_login.py`, where `login` is your Purdue login. Then submit it along with a screenshot showing a run of **all 5** test cases.

```
Terminal

$ python prime_numbers_login.py
Enter a positive integer (-1 to quit): 1
  1 is not prime.
Enter a positive integer (-1 to quit): 2
  2 is prime!
Enter a positive integer (-1 to quit): 10
  10 is not prime.
Enter a positive integer (-1 to quit): 4001
  4001 is prime!
Enter a positive integer (-1 to quit): -1
$
```