Assignment 4 (CS141, 2021-2022)

In this assignment, given an integer number n, we will figure out its prime factorization. For example, when $n = 100$, it is $100 = 2^2 * 5^2$. In general, if the number has t prime divisors $p_1, p_2, \ldots, p_t$ with respective powers $q_1, q_2, \ldots, q_t$, then we want to write $n = p_1^{q_1} * p_2^{q_2} * \ldots * p_t^{q_t}$. For each such q_i, the following should be satisfied: $p_i^{q_i}$ divides n, but $p_i^{q_i+1}$ does not divide n, and $q_i \geq 1$ for all i.

You should write separate functions to check whether a given number is prime or not, and also to figure out q_i where you are given n and p_i. Name your submission as `Assgn4-YourRollNo.py` and upload the `.py` file in the google classroom.