Euler's project problem 1

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Problem statement

The prime factors of 13195 are 5, 7, 13 and 29.
What is the largest prime factor of the number 600851475143 ?

Answer

The largest prime factor of 600851475143 = 6857

Idea

Iterating up from factors starting at 2. If a number is divisible by the factor then we can divide the number by that factor before checking the next factor because the range [number/2 + 1, number] will not be divisible by anything.

Python code

```
def lrgstPrimeFac(num):
    list = []
    fac = 2
    while num > 1:
        while num % fac == 0:
            list.append(fac)
            num = num // fac
        fac = fac + 1
    return list
print(lrgstPrimeFac(600851475143))
```