Repetition Practice Problems with for loop

BridgeLabz
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1. Write a program that takes a command-line argument n and prints a table of the powers of 2 that are less than or equal to 2^n.
2. Write a program that takes a command-line argument n and prints the nth harmonic number. Harmonic Number is of the form

$$H_n = \frac{1}{1} + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \ \ldots \ + \frac{1}{n}$$

3. Write a program that takes a input and determines if the number is a prime.
4. Extend the program to take a range of number as input and output the Prime Numbers in that range.
5. Write a program that computes a factorial of a number taken as input.
   5 Factorial – 5! = 1 * 2 * 3 * 4 * 5
6. Write a program to compute Factors of a number N using prime factorization method.
   Logic -> Traverse till i*i <= N instead of i <= N for efficiency.
   O/P -> Print the prime factors of number N.