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CSE 4309 – Assignment 1

***Task – 1:***

def factorial(n):

result = 1

for i in range(2, (n+1)):

result = result \* i;

return result

*Consider the factorial function above, implemented in Python. What is the time complexity of this function, in Θ notation, with respect to n?*

**Answer:**

The time complexity of this function is ***Θ(n).***

***Task – 2:***

*Re-implement, in Python, the factorial function of Task 1 so that it uses a recursive function call instead of using any loops (like while loops and for loops). Do not call any built-in or library functions for computing the factorial. You do NOT need to do any error-checking (like checking if the input argument is negative). For this task, please include your code in the answers.pdf file, do NOT submit a separate code file.*

Answer: