

Computer Programming (EE1005)

Homework #5

(Due: Apr. 22)

- 5.38: (*Visualizing Recursion*) It is interesting to watch recursion “in action”. Modify the factorial function of Fig. 5.14 to print its local variable and recursive call parameter. For each recursive call, display the outputs on a separate line and add a level of indentation. Do your utmost to make the outputs clear, interesting, and meaningful. Your goal here is to design and implement an output format that helps a person understand recursion better.
- 5.39: The greatest common divisor of integers x and y is the largest integer that evenly divides both x and y . Write a recursive function `gcd` that returns the greatest common divisor of x and y . The `gcd` of x and y is defined recursively as follows: If y is equal to 0, then `gcd(x, y)` is x ; otherwise `gcd(x, y)` is `gcd(y, x % y)` where `%` is the remainder operator.