# Program Design

Lecture 6

# Exponentiation Algorithm

Design an algorithm that reads in two positive integers, a and b, and returns the value $a^b$ (a to the power of b).

# Factorial

The factorial (!) of a positive integer is that number multiplied by all the numbers smaller than it, e.g. 5! is 1*2*3*4*5 = 120, or in general - x! = 1*2*3….*(x-1)*x

# Guessing game

Lets design a game algorithm with the following specification:

- The player has to guess a number between 1 and 10
- The player has a maximum of 3 guesses
- The player wins when they guess the right number
- If the player does not guess the number they lose