

Problem Statement of Pascal's Triangle

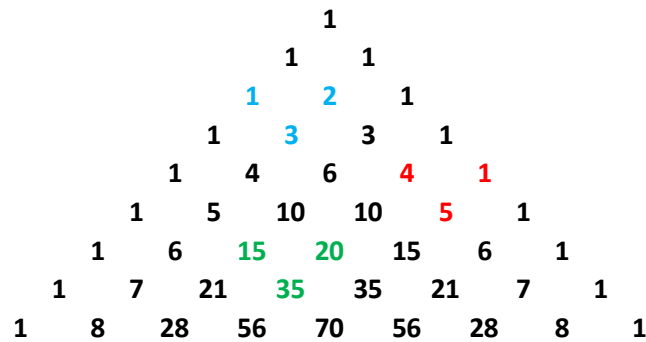


Figure 1: Pascal's Triangle to the 6th coefficient

Figure 1 is what I'm trying to generate with MATLAB and/or VBA. I created the problem myself since I found Pascal's Triangle interesting. Pascal's Triangle is used to find the coefficients of any binomial expression, such as $(x + y)^n$.

So, if you have the exponent $n = 1$, then the expression is $(x + y)^1$, and you get an expansion of $x + y$ (*also written as $1x + 1y$*), which has the coefficients 1 & 1 (*or 1 1*).

$n = 0: (x + y)^0 = 1$
coefficient = 1

$n = 1: (x + y)^1 = x + y$
coefficients = 1 1

$n = 2: (x + y)^2 = x^2 + 2xy + y^2$
coefficients = 1 2 1

$n = 3: (x + y)^3 = x^3 + 3x^2y + 3xy^2 + y^3$
coefficients = 1 3 3 1

\therefore the triangle becomes:

$$\begin{array}{cccc} & & 1 & \\ & 1 & 1 & \\ 1 & 2 & 1 & \\ 1 & 3 & 3 & 1 \end{array}$$

I want the user to input any integer, n , to calculate the coefficients of the expressions. Maybe later when I solved this stage of the problem, I will just find the whole expansion of the n th expression.