Recall Pascal's triangle

We create the table below where the entry in the nth row and kth column is

$$C(n,k) = C(n-1,k) + C(n-1,k-1).$$

Let S be a set with n elements.

$C(n,0) = 1 = \#$ of 0-element subsets of S.

$C(n,n) = 1 = \#$ of n-element subsets of S

Table for $C(n,k)$

$n \backslash k$	0	1	2	3	4	5	6	7
0	1							
1	1	1						
2	1		1					
3	1			1				
4	1				1			
5	1					1		
6	1						1	
7	1							1

We can similarly create a table for upper bounds of ramsey numbers using the inequality $r(s,t) \leq r(s-1,t) + r(s,t-1)$.

Note, $r(s,t) = r(t,s)$, so we only need to fill out part of the matrix to know all values (i.e. the matrix is symmetric).

Recall $r(s,2) = s$

Table of Ramsey number upper bounds.

$s \backslash t$	2	3	4	5	6	7
2	2	3	4	5	6	7
3	3					
4	4					
5	5					
6	6					
7	7					