DAY-1
Recursion & Memoization

What is Recursion?
→ Function call itself is called Recursion.

Why concept of Recursion?
→ For solution that can be broken down to smaller & simpler problem.
→ For problem that are too complex for iterative approach.

- **Factorial:-**

$$Fact(n) = n * fac(n-1); \text{ return when } (n=1)$$

- **Fibonacci**

$$Fib(n) = fib(n-2) + fib(n-1); \text{ return when } n=0 \text{ with } 0$$
- $n=1$ or $n=2$
  , with 1

Assignment:-
- Pascal Triangle   } LinkedIn
  → with Iteration   +
  → with Recursion   YT Explaination
  → with Memoization }   +
                          Github Repository

Top grid (columns 0–10, rows 0–⑤):
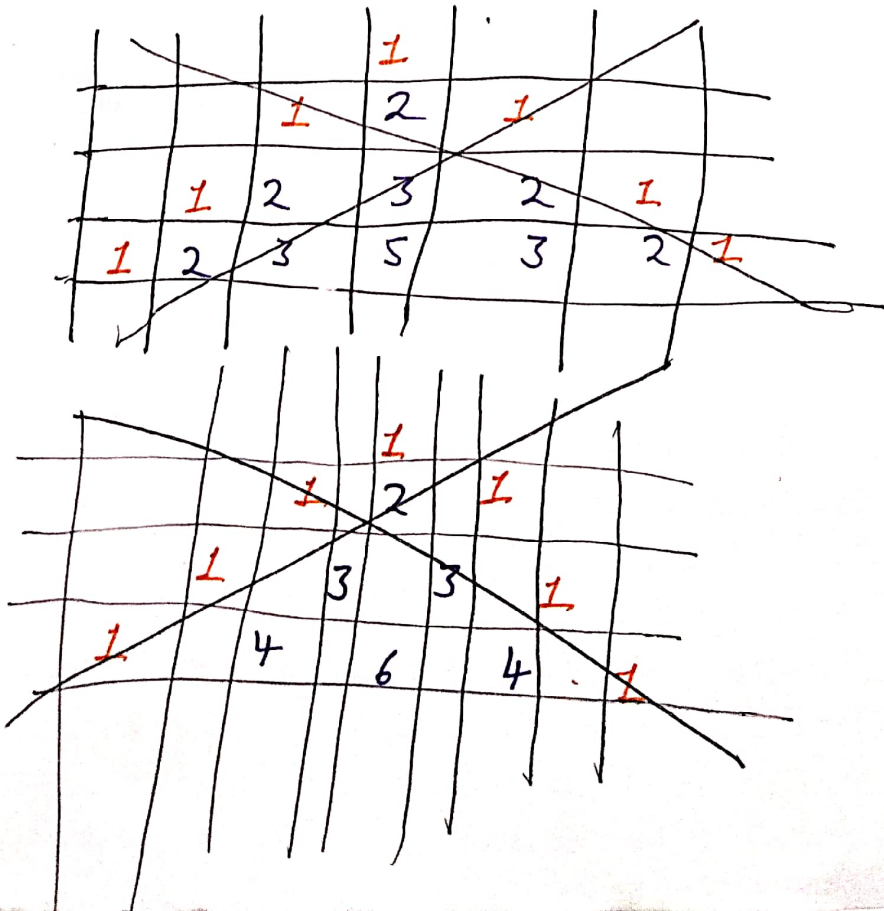
	0	1	2	3	4	⑤	6	7	8	9	10
0						1					
1					1		1				
2				1		2		1			
3			1		3			3	1		
4		1		4		6		4		1	
⑤	1		5		10		10		5		1

Bottom-left grid (columns 0–5, rows 0–5):

	0	1	2	3	4	5
0		1				
1		1	1			
2		1	2	1		
3		1	3	3	1	
4		1	4	6	4	1
5		1	5	10	10	5	1

Bottom-right grid (i \ j, columns 0–5, rows 0–5):

i \ j	0	1	2	3	4	5
0	1					
1	1	1				
2	1	2	1			
3	1	3	3	1		
4	1	4	6	4	1	
5	1	5	10	10	5	1

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
0								1							
1							1		1						
2						1		2		1					
3					1		3		3		1				
4				1		4		6		4		1			
5			1		5		10		10		5		1		
6		1		6		15		20		15		6		1	
7	1		7		21		35		35		21		7		1