N houses (R, G, B), q cost to painting each house

N :	1	2	3	4	5	6
R :	2	8	3	10	2	15
G :	7	4	1	3	6	2
B :	12	5	2	8	7	5

3) We can pick only one for each house. (Greedy thinking)

Note: 2 Adjacent houses cannot have same colour. (No longer Greedy)

Sol:

3) Generate all combinations, Check if they are adjacent, or not. If two adjacent, get rid

TC: $O(3^N)$

Sol: using dp state

dp[i] = Min cost to paint first i houses such that no 2 adjacent houses have same colour

$dp[i] = \min\begin{cases} R[i] + dp[i-1] \\ G[i] + dp[i-1] \\ B[i] + dp[i-1] \end{cases}$ } To see brute colour we should for $i=1$ to

1) Dp states:

dp[R][i] = Min cost to paint all the first i houses such that the last house colour = Red

dp[G][i] = " " "