

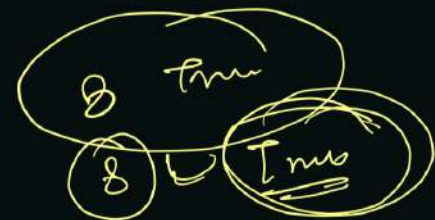
target sum subset tabulation \rightarrow

is it possible to achieve the target

Meaning \rightarrow it is possible to make target 'T' using Array till nth index

arr \rightarrow {4, 2, 7, 1, 3}

target = 10



Coin can combine

\downarrow
infinite

Potential of Players to make sum

	0	1	2	3	4	5	6	7	8	9	10
3	T	F	F	F	F	F	F	F	F	F	F
1	T	F	F	F	T	F	F	F	F	F	F
7	T	F	T	F	T	F	T	F	F	F	F
9	T	F	T	F	T	F	T	F	F	T	F
4	T	T	T	T	T	T	T	T	T	T	T

Recursion values:

- 0: 1-4 \rightarrow T
- 1: 2-2 \rightarrow F
- 2: 3-7 \rightarrow T
- 3: 4-1 \rightarrow T
- 4: 5-3 \rightarrow T

Arrows in table indicate dependencies: from (3,4) to (4,5), (4,6), (4,7); from (4,5) to (5,6), (5,7); from (5,6) to (6,7); from (6,7) to (7,8); from (7,8) to (8,9); from (8,9) to (9,10).

no. of ways = $c_1 + c_2$

4 2 \rightarrow 2 } \rightarrow 7

0-1 Knapsack

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Product { Include
Exclude

values - 15 14 10 45 30

weights \rightarrow 2 5 1 3 4

Include } generate all subset
Exclude

Capacity - 7 kg.

max. profit??

Meaning of cell \rightarrow using wts till 'i', maximum profit generation under capacity 'c'

[Max Value Generate]

Recursion further Explains

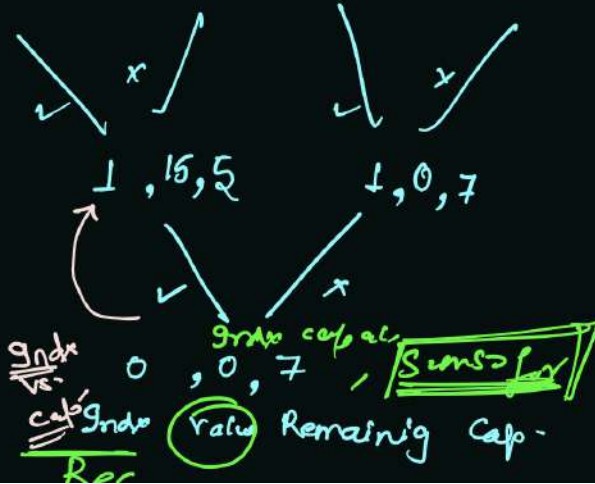
Tabulation \rightarrow

Index

\rightarrow 0
2-15 1
5-14 2
1-10 3
3-45 4
4-30 5

	0	1	2	3	4	5	6	7
0	0	0	0	0	0	0	0	0
1	0	0	15	15	15	15	15	15
2	0	0	15	15	15	15	15	29
3	0	10	15	25	25	25	25	29
4	0	10	15	45	55	60	70	70
5	0	10	15	45	55	60	70	75

7 \rightarrow cap - 75 profit



Unbounded Knapsack

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Coin change - permutation \swarrow ~~cap~~ $\rightarrow 7$ wts - 2 5 1 3 4
combination \swarrow Val - 15 14 10 45 30
 helpful in this problem,
 because Repetition will give same result so avoid repetition i.e. permutation

max - Infinity
 - ∞

min - 0 \rightarrow Identity = 0

Repetition of object is allowed

Cap \rightarrow 0 1 2 3 4 5 6 7

0	10	20	45	55	65	90	100
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wt - val
 2 - 15
 5 - 14
 1 - 10
 3 - 45
 4 - 30