

SubsetSum Problem $S = \{4, 2, 5, 6\}$, $k = 7$

$s_0 = 4, s_1 = 2, s_2 = 5, s_3 = 6$

	0	1	2	3	4	5	6	7
0								
1								
2								
3								

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	0	1	2	3	4	5	6	7
0	{}	NULL	NULL	NULL	{4}	NULL	NULL	NULL
1								
2								
3								

Calculate first row

$$A[0, 0] = \emptyset \text{ and } A[0, s_0] = \{s_0\}$$

$$A[0, e] = \text{NULL whenever } e \neq 0 \text{ and } e \neq s_0$$

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	0	1	2	3	4	5	6	7
0	{}	NULL	NULL	NULL	{4}	NULL	NULL	NULL
1	{}	NULL	{2}	NULL	{4}	NULL	{2,4}	
2								
3								

Calculate value for cell $A[1,6]$:

$$A[i, j] = \begin{cases} T = A[i - 1, j] \\ T = A[i - 1, j - s_i] \cup \{s_i\} \end{cases}$$

$$\times A[i - 1, j] = A[0, 6] = \text{NULL}$$

$$\begin{aligned} \checkmark A[i - 1, j - s_i] \cup \{s_i\} &= A[0, 6 - 2] \cup \{2\} \\ &= A[0, 4] \cup \{2\} \\ &= \{4\} \cup \{2\} \\ &= \{2, 4\} \end{aligned}$$

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	0	1	2	3	4	5	6	7
0	{}	NULL	NULL	NULL	{4}	NULL	NULL	NULL
1	{}	NULL	{2}	NULL	{4}	NULL	{2, 4}	NULL
2	{}	NULL	{2}	NULL	{4}	{5}	{2, 4}	{2, 5}
3								

Calculate value for cell $A[2,7]$:

$$A[i, j] = \begin{cases} T = A[i - 1, j] \\ T = A[i - 1, j - s_i] \cup \{s_i\} \end{cases}$$

$$\times A[i - 1, j] = A[1, 7] = \text{NULL}$$

$$\begin{aligned} \checkmark A[i - 1, j - s_i] \cup \{s_i\} &= A[1, 7 - 5] \cup \{5\} \\ &= A[1, 2] \cup \{5\} \\ &= \{2\} \cup \{5\} \\ &= \{2, 5\} \end{aligned}$$

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$$s_0 = 4, s_1 = 2, s_2 = 5, s_3 = 6$$

	0	1	2	3	4	5	6	7
0	{}	NULL	NULL	NULL	{4}	NULL	NULL	NULL
1	{}	NULL	{2}	NULL	{4}	NULL	{2, 4}	NULL
2	{}	NULL	{2}	NULL	{4}	{5}	{2, 4}	{2, 5}
3	{}	NULL	{2}	NULL	{4}	{5}	{2, 4}	{2, 5}

Calculate value for cell $A[3,7]$:

$$A[i, j] = \begin{cases} T = A[i - 1, j] \\ T = A[i - 1, j - s_i] \cup \{s_i\} \end{cases}$$

$$\checkmark A[i - 1, j] = A[2, 7] = \{2, 5\}$$