

ALG - 17/10/23

$$V_n = \{x_1, x_2, \dots, x_n\} \quad C \in \mathbb{N} \quad \exists S_n \subseteq V_n \text{ t.c. } \sum_{\substack{i=1 \\ x_i \in S_n}}^n x_i = C ?$$

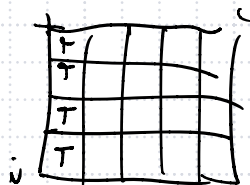
C.D.

$$\begin{array}{lll} n \leq 1 & c \neq x_n & F \\ & c = x_n & T \\ c = 0 & \forall n & T \end{array}$$

P.R.

$$\begin{array}{ll} n > 1 & c < x_n \quad f(n-1, c) \\ & c \geq x_n \quad f(n-1, c-x_n) \end{array}$$

SSE V ORDINATO (ASC.)



FOR  $n = 1$  TO  $n$

$$M[n, 0] = T$$

FOR  $c = 1$  TO  $C$

$$M[1, c] = (c = v[1])$$

FOR  $n = 2$  TO  $n$

FOR  $c = 1$  TO  $C$

$$\text{IF } c < v[n]$$

$$M[n, c] = M[n-1, c]$$

ELSE

$$M[n, c] = M[n-1, c-v[n]]$$

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int main() {
    int n = 6;
    int v[6] = {1, 3, 5, 8, 9, 10};
    int C = 10;
    bool M[n][C+1]; c ∈ {0, 1, ..., C}

    for (int i = 0; i < n; i++) c = 0, ∀ n
        M[i][0] = true;

    for (int c = 1; c < C+1; c++) n = 1, ∀ c
        M[0][c] = (v[0] == c);

    for (int i = 1; i < n; i++) n > 1
        for (int c = 1; c < C+1; c++) c > 0
        {
            if (c < v[i])
                M[i][c] = M[i-1][c];
            else
                M[i][c] = M[i-1][c-v[i]];
        }

    cout << M[n-1][C]; n ∈ {1, ..., N}
    return 0; // opt n, c } 0, ..., n-1
}
```