Bottom-Up Algo for closest weight to a max capacity of a bunch of objects

W (max capacity) = 5
Objects:  A  B  C
Weights:  2  3  4
n=3

Input:  n, W, w₁,…,wₙ

for  c = 0 to W
  M[0, c] = 0

for  i = 1 to n
  for  c = 0 to W
    if  (wᵢ > c)
      M[i, c] = M[i-1, c]
    else
      M[i, c] = max {M[i-1, c], wᵢ + M[i-1, c-wᵢ ]}

M[n+1,W+1] is the table we’re building and in it, row i=1 corresponds to only {A}, row i=2 to {A,B}, and row i=3 to {A,B,C}
w₁ is weight of A, w₂ is weight of B, w₃ is weight of C

<table>
<thead>
<tr>
<th>n=3, W=5</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>i ↓</td>
<td>c→</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>{}</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>{A}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>{A,B}</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>{A,B,C}</td>
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</tr>
</tbody>
</table>

Objects:
- A
- B
- C
Weights:
- 2
- 3
- 4

n=3, W=5