

SW13

Encoding the optimization problem - knapsack Problem.

kg 2 1 4 1 12

\$ 2 1 10 2 4

1	0	0	1	1
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G₁ G₂ G₃ G₄ G₅

0 := Refuse item

1 := Pick the item

} Representation of one chromosome.

$$\text{fitness (individual)} = \begin{cases} \sum_{i=1}^5 G_i \cdot V_i, & \text{if } \sum_{i=1}^5 G_i \cdot V_i \leq 15 \\ 0, & \text{if } \sum_{i=1}^5 G_i \cdot V_i > 15 \end{cases}$$

The most important step is to find a suitable encoding of the problem -> the Genotypes.

→ This will be a MEP exercise.