

Write a program which takes as input n pairs $(c_1, w_1), (c_2, w_2), \dots, (c_n, w_n)$, where each pair (c_i, w_i) denotes the cost and weight of item i . The program should output numbers $x_{i_1}, x_{i_2}, \dots, x_{i_k}$ such that the following conditions hold simultaneously:

1. $\{i_1, i_2, \dots, i_k\} \subseteq \{1, 2, \dots, n\}$
2. $(x_{i_1} \leq w_{i_1}) \wedge (x_{i_2} \leq w_{i_2}) \wedge \dots \wedge (x_{i_k} \leq w_{i_k})$
3. $x_{i_1} + x_{i_2} + \dots + x_{i_k} \leq 100$
4. $\frac{(c_{i_1} \cdot x_{i_1})}{w_{i_1}} + \frac{c_{i_2} \cdot x_{i_2}}{w_{i_2}} + \dots + \frac{(c_{i_k} \cdot x_{i_k})}{w_{i_k}}$ is maximum.

Hint: Please refer to page 5 of file Greedy.pdf in my home folder.