

Problem J: Cutting the Cords

CORA makes it through the room with the conveyor belts to the elevator, which she now takes to the top floor of the factory which contains the central network hub. Here she finds that Umbr4 has taken control of the factory's internal communications network. The rogue robot has rewired the network cables to route all critical data through itself, allowing it to control the other robots and security systems.

The only way to disable Umbr4 is to cut some of the network connections, isolating it from other parts of the system. CORA can use her miniature buzz saw attachment to cut through the connections, but doing so will take time. Some of these connections, due to their length and amount of shielding, will take more time for her to cut than others. The network connections also have varying importance – cutting some will do more damage to Umbr4 than others. CORA only has a fixed amount of time to cut as many cables as she can before Umbr4 will take notice of her.

You need to help CORA by writing a program which will decide which cables to cut that will take less than or equal to the time limit, while having the maximum total impact.

Input

The first line of input contains two integers, T , the time limit CORA has to cut cables and N , the number of network cables in the system.

Following that are N lines of input, each corresponding to one network cable. Each of these lines contains two integers. The first of these is the time it will take to cut the cable, and the second is the impact it will have on Umbr4.

Output

Output should consist of a single integer which gives the maximum total impact CORA can have when cutting cables. That is, the sum of the impacts for the wires CORA can cut within the time limit that is the highest.

Sample Input

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10 5
4 5
3 4
2 3
5 8
1 2
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Sample Output

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15
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