Challenges Week 7

GARBAGE - 70 points

Gregethor the Garbage Guru is trying to dump all the garbage from his failed experiments into some intergalactic landfills. He wants to be eco-friendly and transport some of this garbage through some magical portals he made from a relatively successful experiment. However, these portals are very weak and will collapse after a certain cumulative amount of weight has passed through them. Gregethor's garbage has piled up in several places. Can you help him figure out how much garbage he can dump into the landfills using his portals?

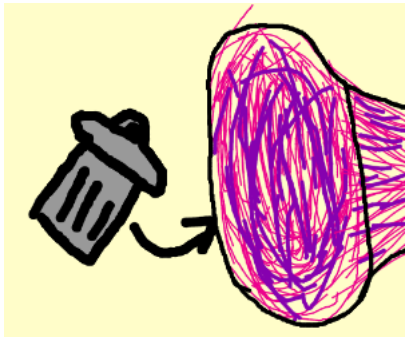

Figure 1: One of Gregethor's magic portals.

Input: The input is a graph, where the edge weights represent the weight that a portal from one place to another can take. The portals are one-directional. The first line contains the number of vertices n in the portal graph, the number of vertices s where trash is found, and the number of vertices t where trash should be dumped. The second line contains the vertices s where the trash is located. Assume Gregethor is quite wasteful and there is an infinite amount of trash at these vertices. The third line contains the vertices t where the trash should be dumped. The remaining n lines contain n values each, representing the adjacency matrix of this trash portal graph.

Output: The total amount of trash that can be dumped into the landfills.

Constraints:
$2 \leq n < 200$
$1 \leq s \leq n - t$
$1 \leq s \leq n - s$
$0 \leq w_{i,j} < 100000$, where $w_{i,j}$ is the weight of any edge in the graph.

Example

Input	Output
4 2 2 0 1 2 3 0 0 1 3 0 0 4 0 0 0 0 0 0 0 0 0	8