Liberating workers from heavy labor work is Mujin's main goal in the 21st century. One of the heaviest jobs in logistics is re-arranging heavy boxes for storage, inspection, shipment, etc. Such a job requires a lot of effort for picking up and placing a box, as well requiring a plan on how to place those boxes. The job is difficult and repetitive, making it a perfect application for Mujin's industrial robots. Unfortunately, each logistics center has its own criteria on how the robot should place boxes to make them look good, satisfy business requirements, comply with load distribution regulations, etc. Therefore, the robot needs to evaluate the provided placement positions and accept or reject them. The robot must also reject non-efficient packs and request new placement positions.

We designed the following criteria for the robot to validate placement positions.

Criteria:
1. None of the boxes intersect each other.
2. The robot can approach each box from the top without touching already placed boxes.
3. The sum of the volume of all placed boxes > 50% of the volume of the minimum axis aligned bounding box in which all placements can fit.
4. (optional) Each placed item has at least 60% of its area supported by other boxes placed below it in such a way that the top surface of the bottom box is within 14 mm from the bottom face of box on top. Items placed at height <= 5 mm are assumed to be 100% supported.

Input:
The input is a csv file in utf_8 format with comma fields separation. The input will have the following columns:
- No. – unique index of item
- sizeX – size of the item in X
- sizeY – size of the item in Y
- sizeZ – size of the item in Z
- weight – weight of the item
- maxLayers – maximum number of layers per item
- rotation – rotation of placement
  - 0 – no rotation
  - 1 – 90 degrees rotation about the Z axis
- posX – placement position of the center of the box by X
- posY – placement position of the center of the box by Y
- posZ – placement position of the center of the box by Z

For example:

No.	sizeX	sizeY	sizeZ	weight	maxLayers	rotation	posX	poxY	posZ
1	405	275	205	13800	8	1	295	-345	102
2	405	275	205	13800	8	1	15	-345	102
3	405	275	205	13800	8	1	-265	-345	102
4	405	275	205	13800	8	0	-200	0	102
5	405	275	205	13800	8	0	220	0	102
6	405	275	205	13800	8	1	-265	345	102
7	405	275	205	13800	8	1	15	345	102
8	405	275	205	13800	8	1	295	345	102
9	435	283	154	2000	10	1	290	320	282
10	435	283	154	2000	10	1	290	-120	282
11	435	283	154	2000	10	1	0	320	282
12	435	283	154	2000	10	0	-75	-45	282
13	435	283	154	2000	10	1	-290	320	282
14	435	283	154	2000	10	0	-75	-335	282

3D visualization:
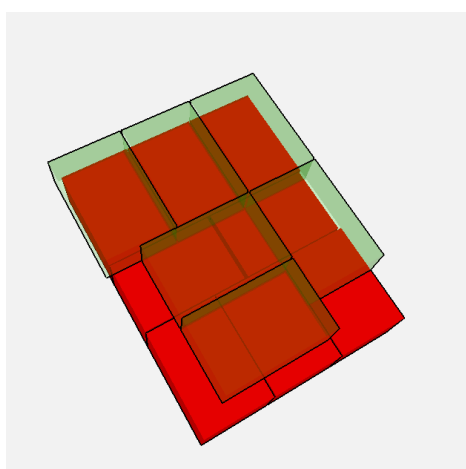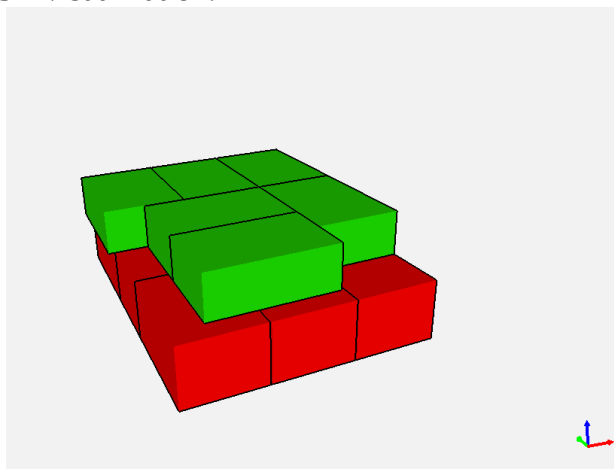
Task:

Please write a program which will accept a csv filename as an argument and print validation results for each of the validation criteria. If any criteria is not satisfied, please print the reason.