Software Test Program

The purpose of this program is to see how you design and implement a real world problem.

We are interested in your design, techniques used and how you implemented it in the program. Attempt to use a design appropriate for the problem at hand.

Pack Planner

The pack planner is simply a program that takes a list of items and sorts them into several packs (groups).

An Item contains

- 1. Item id
- 2. Length (mm)
- 3. Quantity
- 4. Item Weight (kg, the weight of one item)

A Pack has:

- 1. Pack id
- 2. List of Items

The Packs are created with one of the following criteria

- 1. Packing items from shortest to longest.
- 2. Packing items from longest to shortest.
- 3. Packing items in the order they were given.

Program limitations

- 1. Max weight allowed in any pack
- 2. Max items in any pack
- 3. Pack Sort Order

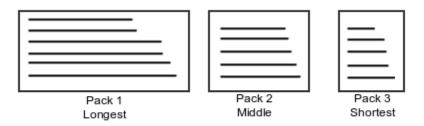
Sort orders are: NATURAL, SHORT_TO_LONG, LONG_TO_SHORT Natural refers to the order they were given as input.

Special Note

- 1. Items can be split across packs. (5 x 1000 pieces can be split so that 2 x 1000 are in pack A and 3 x 1000 are in pack B)
- 2. Items are stacked one on top of the other forming a stack which is referred to as a Pack.

Visual Example

A Pack is a stack of Items, one on top of the other.



Sorted longest to shortest

The Task

Create a program that takes as standard input the max pack weight, max items per pack and a list of items. As output it returns a list of packs

```
#Input format:
[Sort order], [max pieces per pack], [max weight per pack]
[item id],[item length],[item quantity],[piece weight]
[item id],[item length],[item quantity],[piece weight]
[item id],[item length],[item quantity],[piece weight]
#Output format:
Pack number: [pack number]
[item id],[item length],[item quantity],[piece weight]
[item id],[item length],[item quantity],[piece weight]
Pack Length: [pack length], Pack Weight: [pack weight]
#STD input example: (input ends when an empty line is received or you
reach the end of the input stream)
NATURAL, 40,500.0
1001,6200,30,9.653
2001,7200,50,11.21
#Example output for the above input:
Pack Number: 1
1001,6200,30,9.653
2001,7200,10,11.21
Pack Length: 7200, Pack Weight: 401.69
Pack Number: 2
2001,7200,40,11.21
Pack Length: 7200, Pack Weight: 448.4
```