Required details

Warehouse

- Shelve height of each level and number of levels.
- Usable shelves width/depth
- Width of openings between shelves
- Time to move one/multiple shelves
- Forklift speed

Scenario

Packages come in batches or continuous?

- Rate of retrieval; continuous or discrete ?
- Rate of droping; continuous or discrete ?
- Usual warehouse filling ratio :

Settled :

```
Usual warehouse filling ratio: 70%-80%
Drop packages every 7 steps, retrieve packages every step. Simulates
dropping every week, retieval every day
```

Packages

As discussed with your mentor, packages should be gathered by spot.

- What is the actual size of a spot. (~How many per shelve/level). : palette
- How many packages should it contain ? (~Hence, what is the package size)
- Corresponding weight of each pacakges ?
- Corresponding frequency ?

Setlled

```
Shelves organized with palettes, on which packages are stored.
Need to define the differents packages types. Especially, their size,
frequency and weight.
```

Costs

- Energy cost of moving shelves refined?
- Transport cost (forklift), marginal?

Input/Ouput to use with physical model

Input : 2 csv

- Warehouse state :

Spot	Package
id1	classA
id2	-
id3	classC
id4	-
id5	-

- Package to drop

Package
classX

Output : 2 csv

- New warehouse state

Spot	Package
id1	classA
id2	-
id3	classC
id4	classX
id4	-

- Drop spot id

Spot
id

- On a separate file, the format of the different product classes are defined as a dictionnary with attributes 'size', 'frequency' and 'weight'

```
  {classA: {"frequency":.7, "weight":1, "size":1}, classB:
{"frequency":.3, "weight":2, "size":3}}
```

To be done

Video simulation

After retraining on defined scenario, select sequence of dropping/retrieving packages (~15).

Comparison with static shelves

Compare access time/ energy cost of current solution with static shelves

Update space optimisation problem and time/cost to real life data

Build API to run with physical model