Herbalife

Possible assignment 1

Project slotting optimalization within picking area.

The organization

Herbalife is a world leader in meal replacements, nutritional supplements and skin care products. In the distribution center Venray, the EMEA market is supplied with these products. For 13 surrounding countries, customer orders are handled on a daily basis by means of a pick line where the products are picked and packed.

The question

The pickline serves 13 different countries. The products for these countries all have a unique location on this pick line, based on a number of characteristics that determine their location. The assignment of these locations is a manual action. A workable but inefficient method that we think could be easier and better with the help of software.

Current situation

Now slotting is partly done by hand. With help of some data analytics, the historical data is consolidated and used in a re-profile program, developed with the help of Fontys (previous SOFA project) to determine the best picking area for each product. The position within the area is still done by hand.

To be achieved

Proper stock placement, or slotting, has a major impact on the output and productivity of the picking line. This project should lead to an optimization of the slotting.

The reprofile program generates a list of all products to be placed in a certain picking area. This new program must determine the actual location of the product in the picking area, based on a large number of characteristics and constraints. Such as amount to be picked, weight and size of the product, standing position of the picker, but also not two similar products next to each other and more.

The input of the program will be the repofile list, product masterdata, location masterdata and constraints specific for the picking area. Also demand data is provided.

The output will be a list of the new locations per product.

The output should also be made visual for quick inspection and manual corrections before finalizing the new location setup.

Requirement

Programing language has to be python.

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Possible assignment 2

Project cubing.

The organization

Herbalife is a world leader in meal replacements, nutritional supplements and skin care products. In the distribution center Venray, the EMEA market is supplied with these products. For 13 surrounding countries, customer orders are handled on a daily basis by means of a pick line where the products are picked and packed.

The question

The pickline serves 13 different countries. The products for these countries are gathered during the picking process in one of the 5 different box types.

Current situation

At the moment there is a cubing algorithm in place which takes the products of a specific order and assigns these products to one or more boxes with respect to the size of the boxes trying to fit it in the smallest possible box. This cubing is volume based and generates once in a while boxes with products fitting volume wise but physical not possible due to the size of the products.

It considers the dimensions of the products thereby never placing a to large product in a to small box.

To be achieved

First of all, the program should be able to perform cubing based on volume and product dimensions. Second step would be to find the minimal bounding box (or smallest enclosing box) of all products in the order.

Based on the two previous steps the program should always give the correct box type for an order including a visual representation of the positions of the products (playing 3D tetris)

Input to the program will be product master data (dimensions), box master data and a list of orders with the products in the order.

Output will be: box type, minimal enclosing dimensions, visual chart how to position the products.

Requirement

Programing language has to be python.