



12. Juli 2019, 8-20 Uhr

## HACK-ADA-THON

Inspired by BHS Corrugated

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# Title: Pick&Pay warehouse forecast and optimization

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### SETTING

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The data sets contain fictitious BHS Corrugated warehouse data from fictitious BHS Corrugated customers from more than 3 years. In table "Customer\_X", the column "Pick&Pay" provides information if the according item in the row is taken from a so called BHS "Pick&Pay" warehouse: these are warehouses located directly at the customer's plant to provide immediate and uncomplicated spare part supply to keep the production of our customers running. Table "Customer\_X\_warehouse" provides the according withdrawal information.

Since only those parts have to be paid that are really needed (and therefore "picked" from the warehouse), BHS is highly interested in keeping these warehouses efficient concerning an optimal amount and price of the parts stored there.

The other entries are regular orders in the BHS online-shop or by contacting the BHS supply services directly.

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### HINT

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The columns „Amount“ and „Revenue“ contain the number of „picked“ single items and the according total revenue. A negative entry indicates not needed and returned parts.

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## YOUR TASK

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Can you provide a forecast of the future consumption (at least one month ahead) for each customer concerning "Pick&Pay" warehouses as well as regular orders? Choose a suitable train, test and evaluation subset and a criterion to proof the merit of your forecast.

Can you also conclude a comprehensive forecast for BHS concerning all customers? Present your idea and the resulting merit of your comprehensive forecast.

Is there an optimal placement of selected spare parts from the view of BHS, e.g. concerning the revenue?

Can you identify any striking correlations between the ordered items beside obvious patterns?

Present all you results in one pitch. Consider that the quality of the presentation is also taken into account in the evaluation.

### Table column description:

Order_Form_ID:	Unique order form identifier (each order form may contain more than one article)
Customer_ID	Unique customer identifier
Article_Number	Unique article number
Article_Name	Article name
Invoice_Date	Date of invoice
PickAndPay:	Information if the article was taken from "Pick&pay" warehouse (1 = yes, 0 = no)
Revenue:	Total revenue for all picked articles
Calender_Week:	Calendar week
Amount:	Number of picked articles
Stock:	Number of articles stored in the "Pick&Pay" warehouse
Base_Unit:	Article base unit (Pieces = ST, Meter = M)
Withdrawals:	Total number of withdrawals for the complete time period