



# **(Sr.) Business Intelligence Analyst - Interview tasks**

.Q4\_2020

# Background

The Category and Insights team at Dr. Oetker UK wants to gain insights into their indirect eCommerce performance. The team has team members that focus on specific categories whilst also being interested in the total sales for the online market. Not only do they want to gain insights into sales, but also into the online dynamics that drive sales, as for instance promotions, availability and visibility of products online. The team at Dr. Oetker can be categorised as non technical domain experts and have the requirement that any solution should be user-friendly.

The team together with Oetker Digital has defined the important data sources and data points, which have been ingested into a data warehouse. Below you will find the schemas for the resulting data tables.

# Available data

## Sales

date	DATE	2020-11-01; 2020-11-08; 2020-11-15...
manufacturer	STRING	Dr. Oetker; Goodfellas; Tesco...
brand	STRING	Ristorante; Big American; Chicago town; Tesco...
retailer	STRING	Tesco; Asda; Ocado; Morrisons...
country	STRING	Great Britain; United Kingdom
currency	STRING	GBP
ean	STRING	234420039285; 9340098983453; 9340098983477...
product_name	STRING	Dr. Oetker Ristorante Pizza Pepperoni Salame 320G; Dr. Oetker Ristorante Pizza Mozzarella 335G; Chicago Town Large Takeaway Cheese Pizza 630G; Dr. Oetker Vanilla Extract 95ML...
category	STRING	Pizza; Baking; Decoration...
sub_category	STRING	Takeaway; Thin & crispy; In the Bake; Decorate the bake; Mixes..
sales_value	FLOAT	Measure
sales_volume	INTEGER	Measure
avg_unit_price	FLOAT	Measure

## Keyword ranking

date	DATE	2020-11-01; 2020-11-02; 2020-11-03;...
country	STRING	UK
retailer	STRING	Tesco; Asda; Ocado; Morrisons;...
retailer_category	STRING	Food Cupboard *** Home Baking *** Home Baking *** Cases, Candles & Accessories; Frozen Food *** Pizza; Garlic Bread & Party *** Frozen Pizza *** Takeaway Pizza;...
ean	STRING	234420039285; 9340098983453; 9340098983477;...
product_title	STRING	Dr. Oetker Ristorante Pizza Pepperoni Salame 320G; Dr. Oetker Ristorante Pizza Mozzarella 335G; Chicago Town Large Takeaway Cheese Pizza 630G; Dr. Oetker Vanilla Extract 95Ml...
page_placement	INTEGER	Measure
actual_rank	INTEGER	Measure
organic_rank	INTEGER	Measure
sponsored_rank	INTEGER	Measure
manufacturer	STRING	Dr. Oetker; Goodfellas; Tesco...
brand	STRING	Ristorante; Big American; Chicago Town; Tesco...
account_category_level_1	STRING	Frozen Pizza;...
account_category_level_2	STRING	Thin & Crispy;...
account_category_level_3	STRING	Null
url		<a href="https://www.tesco.com/groceries/en-GB/products/251334802">https://www.tesco.com/groceries/en-GB/products/251334802</a> ;...

## Availability

date	DATE	2020-11-01; 2020-11-02;2020-11-03...
country	STRING	UK
retailer	STRING	Tesco; Asda; Ocado; Morrisons...
ean	STRING	234420039285; 9340098983453; 9340098983477...
product_title	STRING	Dr. Oetker Ristorante Pizza Pepperoni Salame 320G; Dr. Oetker Ristorante Pizza Mozzarella 335G; Chicago Town Large Takeaway Cheese Pizza 630G; Dr. Oetker Vanilla Extract 95ML...
availability	STRING	In stock; Out of stock; In stock...
manufacturer	STRING	Dr. Oetker; Goodfellas; Tesco...
brand	STRING	Ristorante; Big American; Chicago town; Tesco...
account_category_level_1	STRING	Home Baking;...
account_category_level_2	STRING	Cake Decorations & Ingredients;...
account_category_level_3	STRING	Baking Aids;...
url	STRING	<a href="https://www.tesco.com/groceries/en-GB/products/297393528;">https://www.tesco.com/groceries/en-GB/products/297393528;</a> ...

## Promotion

date	DATE	2020-11-01; 2020-11-02;2020-11-03...
country	STRING	UK
retailer	STRING	Tesco; Asda; Ocado; Morrisons...
ean	STRING	234420039285; 9340098983453; 9340098983477...
product_title	STRING	Dr. Oetker Ristorante Pizza Pepperoni Salame 320G; Dr. Oetker Ristorante Pizza Mozzarella 335G; Chicago Town Large Takeaway Cheese Pizza 630G; Dr. Oetker Vanilla Extract 95ML...
regular_price	FLOAT	Measure
promoted_price	FLOAT	Measure
promotion_text	STRING	You Save: £1.00 (50%); 2 for £3.00; Save £1.00 Was £3.50 Now £2.50...
promotion_type	STRING	Discount; Multi-buy; Other...
manufacturer	STRING	Dr. Oetker; Goodfellas; Tesco...
brand	STRING	Ristorante; Big American; Chicago town; Tesco...
account_category_level_1	STRING	Home Baking;...
account_category_level_2	STRING	Cake Decorations & Ingredients;...
account_category_level_3	STRING	Baking Aids;...
url	STRING	<a href="https://www.tesco.com/groceries/en-GB/products/297393528;...">https://www.tesco.com/groceries/en-GB/products/297393528;...</a>

# Task

In case you do not have sufficient information feel free to make assumptions, however, please make sure to mention your assumptions during the presentation.

- 1) Present an overall concept for the dashboard designs and what considerations you should take into account when developing for the team.
- 2) Create dashboard design drafts for the dashboards you would create for the Category and Insights team, as a minimum consider two main subject areas to present.
- 3) Describe how you would model the data to create the dashboards envisioned, feel free to use visual aids like an Entity Relationship diagram.
- 4) Define important KPIs that you would create and highlight on the dashboards, and argue for their relevance.
- 5) Create a high-level draft of the BI architecture demonstrating the data flow from source to dashboard.

**Thank you.**

The background features a series of overlapping semi-circular shapes in various shades of blue, ranging from light to dark. A vertical bar of dark blue is positioned on the right side, partially overlapping the semi-circles. The overall composition is clean and modern.