



# Project Plan

## Galleria Holdings UK

## **Main Objective:**

A Fast-food chain Galleria Holdings, would need to develop a data warehouse for business intelligence purposes which means they need a reporting system of 'items sold' or 'recipes sold' to get an accurate drilldown of most popular items vs least popular. Not currently aware of how their menu are being received in the market and believe that they are too large and inconsistent.

This will allow them to streamline their menu across the brand to suit the needs and requirements of the customers.

## Setting the Scene

Criticism of fast food is well known and claims of negative health effects, high calories, trans fats and high in fat, sugar, and salt.

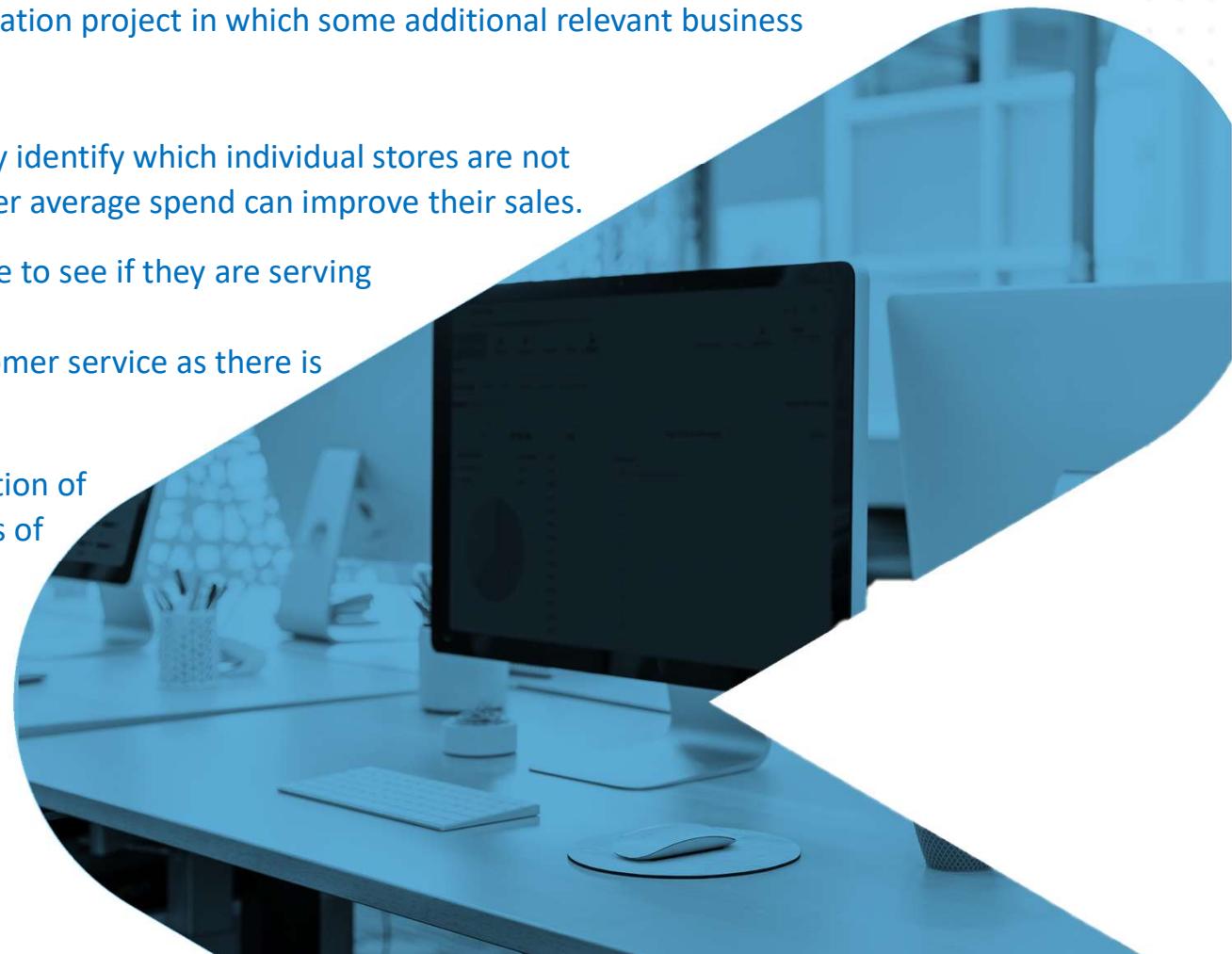
According to the UK Government, obesity is one of the biggest health crises the country faces as almost two-thirds (63%) of adults in England are overweight or living with obesity and 1 in 3 children leave primary school overweight or obese. Obesity-related illnesses cost the NHS £6 billion a year.

A good control of products and services can help to create a menu that offers the customer healthy food and good income for the company. It is necessary to have a balance on the control of costs and revenues, the excess or lack of stock can end up harming the growth of any company. And this is only possible with the analysis of information and good monitoring.

Regarding the difficulties imposed after covid-19, some sectors had to adapt, take innovative actions, and optimize solutions to face this new challenge that impacted the entire world and succeed.

With that in mind, I prepared an implementation project in which some additional relevant business questions for reporting purposes were raised:

- Average customers spend – this will help a company identify which individual stores are not upselling. This can be used so the stores with a lower average spend can improve their sales.
- Delivery Sales % vs Net Sales – This will allow a store to see if they are serving a lot of customer or more deliveries. The higher % of deliveries could indicate poor customer service as there is less customers going into a store.
- Location and date of orders, along with the description of products, categories and subcategory and segments of clients (or payment).
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## **Understanding the Problem Domain**

This project also aims to create a dashboard that presents the identification of a group of items that should be removed or replaced, analysis of customer segments, conducting studies of the aspects necessary for its development. This analysis will be used by the company Dreams LTD, specialized into sales of fast-food; and will analyse sales made in the period 2016 to 2019 in the database provides by the QA team, it will also assist in decision making, control of unnecessary purchases of food which is not chosen by customers, and categories of top selling products and projection for the next years. The analysis of items and how the dashboard will be developed, its structure, design, and the definitive version of the project.

On-premises, cloud-based, or hybrid  
data engineering?

Main Services



# Evaluating Solutions

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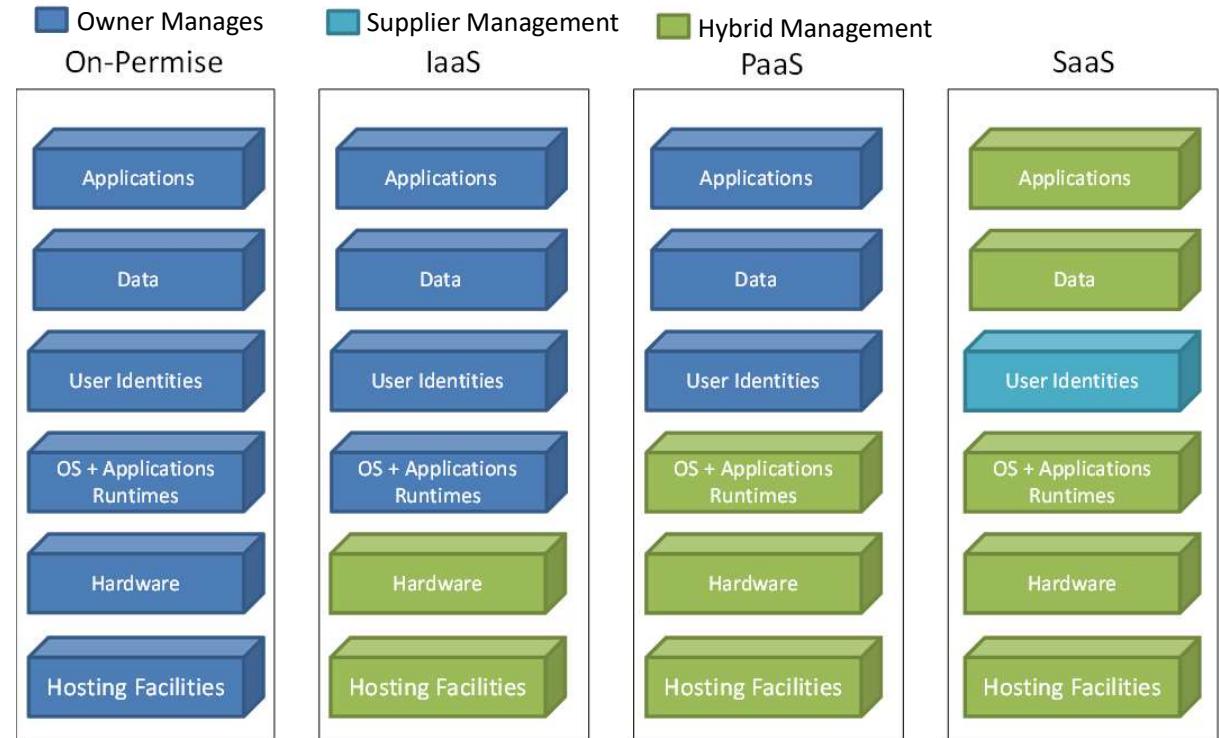
Talysson Oliveira



# **Cloud computing**

- It's no longer a myth for organizations, on the contrary. Large enterprises have moved their systems to the cloud in search of its benefits. The cloud computing business model ranges from hosting and using public internet infrastructures to creating one's own cloud infrastructure within the organisation's premises in a so-called private cloud model.

- The on-premise system is a data storage system, also called server, which integrates all the information of the activities of a company. The structure is totally implemented in the company's physical space.
  - The IaaS service model is one of the pillars of cloud computing. It consists of the availability of servers and data centers within the context of the cloud, ensuring the much-desired scalability to reduce costs.
  - PaaS simplifies application development while eliminating the cost and complexity of procurement, hardware and software management, and storage capacity provisioning.
  - With SaaS, all the functionality of the application is delivered in one package over the network. The user needs do no more than use the application; the SaaS provider takes care of what is associated with the creation and operation of the software, segregating user data, with user security and the SaaS environment, and with various other details.



From an infrastructure standpoint, Fidelity Investments is combining a private cloud hosted in the company's data centres with multiple public cloud platforms, raising the question of how to manage this hybrid infrastructure?

Fidelity doesn't standardise on any one technology but uses a variety of tools to achieve this.

In systems engineering, quality attributes are realized non-functional requirements used to evaluate the performance of a system. They are sometimes called architecture characteristics, or "diseases" after the suffix that many of the words share. They are usually Significant Architectural Requirements that require the attention of architects.

Some of the capabilities are already supported in one form or another by many of the leading vendors, though manual intervention is still required to take full advantage of them. We expect that in the future, most, if not all, will converge on elastic serverless, cloud-based, fully automated systems that remain optimised for provisioning, performance, security, reliability, and cost minimisation with minimal or no human intervention.

Mastering and managing

# Data Understanding

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# A Review of the Original Model:

**Source provided:**

SaleDate	TicketNo	Outlet	Total	OrderQty	Stock_Code	Name	Description	Price	Product_Group	Group_name	CardType
01/07/2016	82196	Birmingham	£ 20.00		4PZ0001	SCHIACCIATINA	Rosemary, Olive Oil and Sea salt	£ 5.00	P	Pizza	Visa
01/07/2016	82213	Cardiff	£ 15.00		5DAB001	Black Coffee	NULL	£ 3.00	G	Drinks & Beverages	Money
01/07/2016	82193	Edinburgh	£ 13.50		1CP0113	Coq au vin	Chicken stewed with red wine, onions, tomatoes, mushrooms & carrots	£ 13.50	C	Crepes and Galettes	Debit Card
06/07/2016	82258	Ipswich	£ 8.00		1CP0119	La Pomme	Apples sauteed in butter & cinnamon	£ 8.00	D	Desserts	Maestercard
01/08/2016	82434	London	£ 25.00		2APP001	Assiette de pate	3 pates with cornichons & moutarde	£ 12.50	A	Starters/Appetisers	Visa
01/07/2016	82212	Middlesborough	£ 8.50		1BK0161	Scrambled eggs	Scrambled eggs, spinach & cheddar	£ 8.50	B	Breakfast	Debit Card
20/04/2017	84770	Peterborough	£ 4.00		1SD0001	French fries	Crisp outside, fluffy inside = the best!	£ 4.00	K	Side Dishes	Debit Card
08/07/2019	114041	Poole	£ 7.50		1CP0170	Crepe Japonnais	Teriyaky Salmon & Shitake Mushrooms, with salad	£ 7.50	C	Crepes and Galettes	Debit Card
19/07/2019	114394	Weymouth	£ 7.50		1CP0170	Crepe Japonnais	Teriyaky Salmon & Shitake Mushrooms, with salad	£ 7.50	C	Crepes and Galettes	Maestercard
31/07/2019	114781	Worthing	£ 7.50		1CP0170	Crepe Japonnais	Teriyaky Salmon & Shitake Mushrooms, with salad	£ 7.50	C	Crepes and Galettes	Debit Card

**Dictionary:**

- **SaleDate** – Sales from 01/07/2016 to 31/07/2019.
- **TicketNo** – 16.708 different orders.
- **Outlet** – 10 branches in different city of the country.
- **Total** – Total amount of item.
- **OrderQTY** – Quantity of item per order.
- **Stock\_Code** – Identity whit initial of group name and numbers.

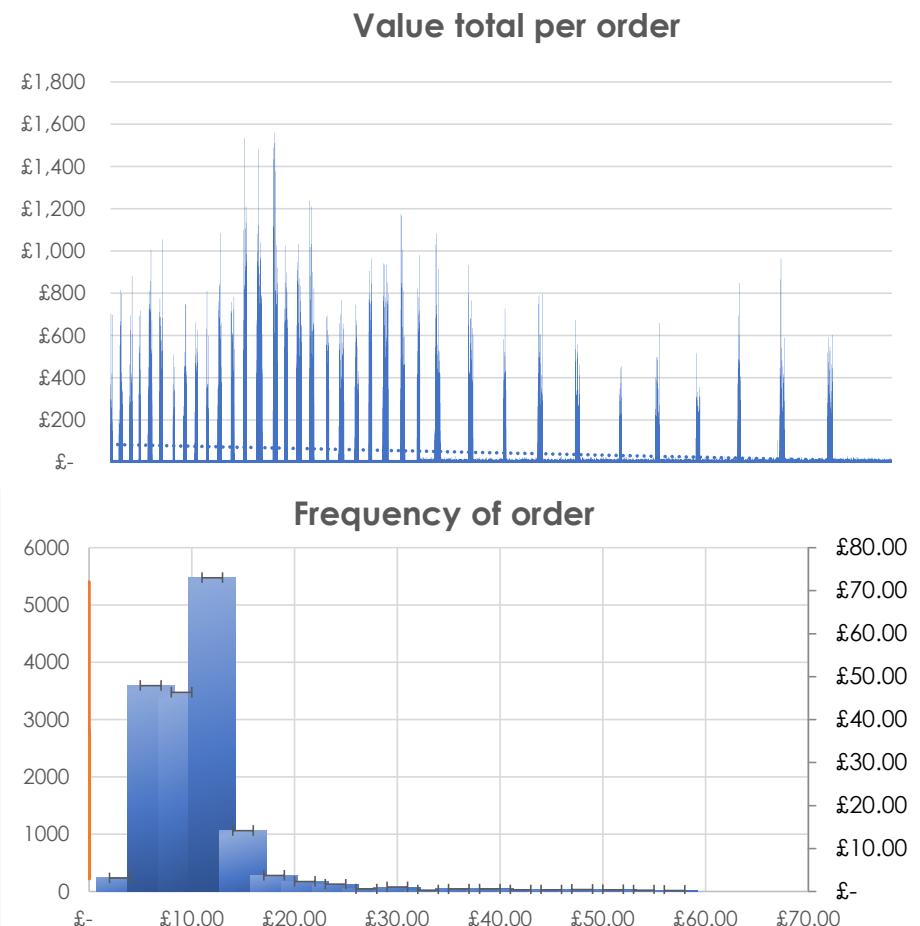
- **Name** – Item menu name. 77 items on total;
- **Description** – Items description of item menu;
- **Price** – Price unit per item menu. £8 in average;
- **Product\_Group** – Identity whit initial of group name;
- **Group\_name** – Group of item menu. 9 groups different;
- **Card\_Type** – Payment mode. 4 Types different.

## A review of the original Model

Analysing the database provided, with 40706 rows we were able to draw several conclusions.

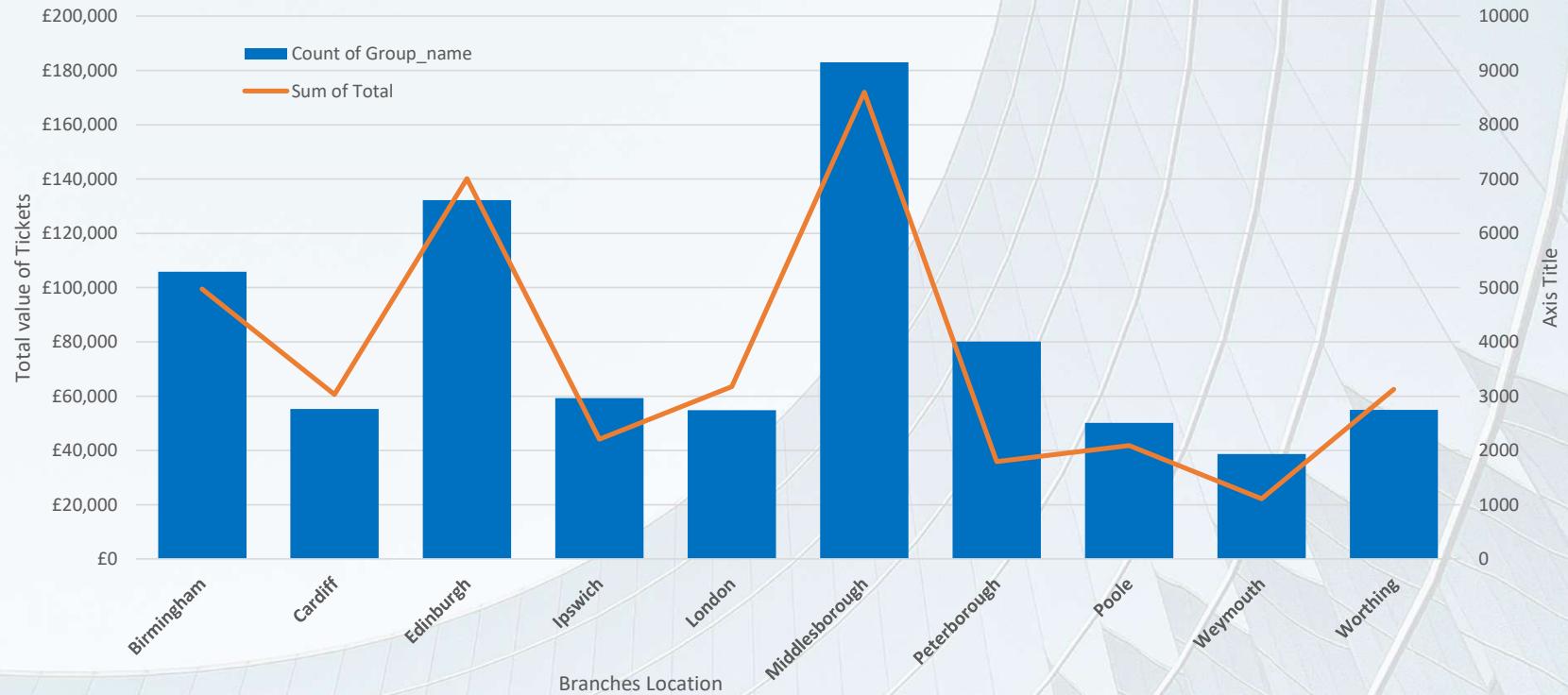
Regarding the frequency of orders value, we can see the majority orders is between £3 to £15 witch means 82% of the database.

The total amount of sales across all regions was £742,366, which is £185,591 average per year.



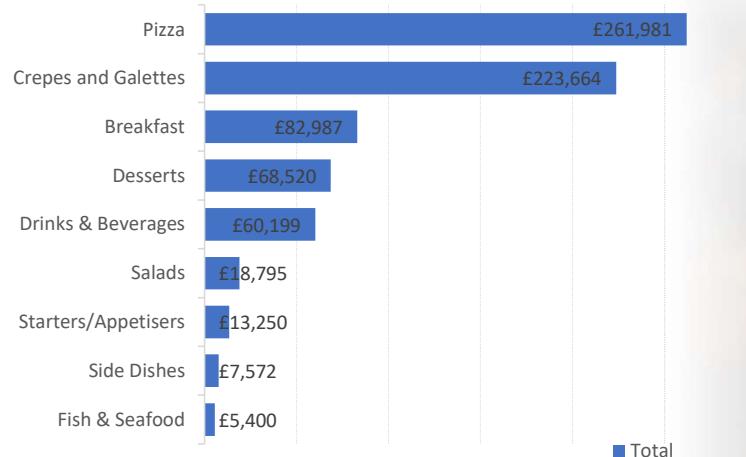
# Data Analysis

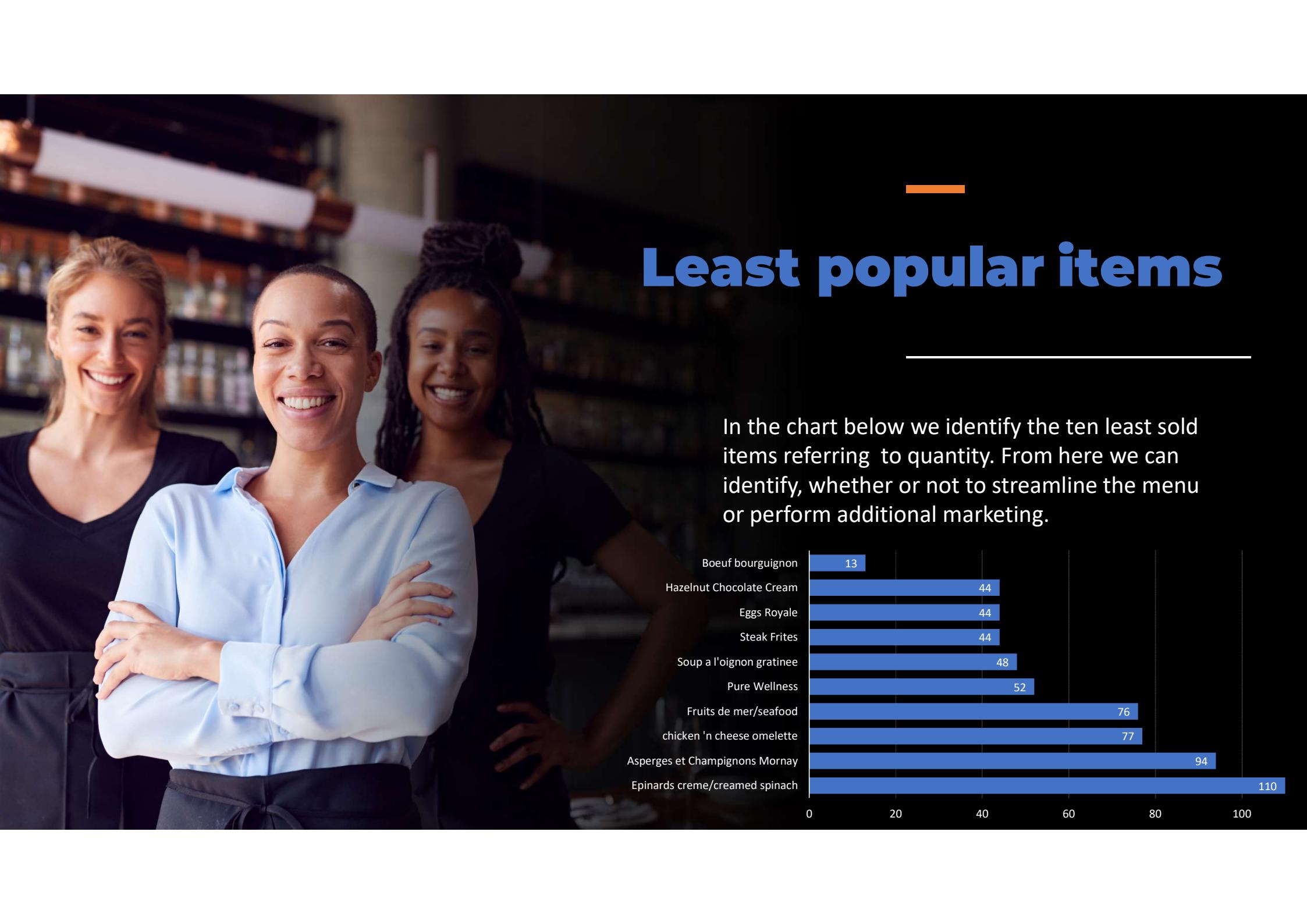
In the chart below, we can see the number of orders per department.



# Bestselling Items

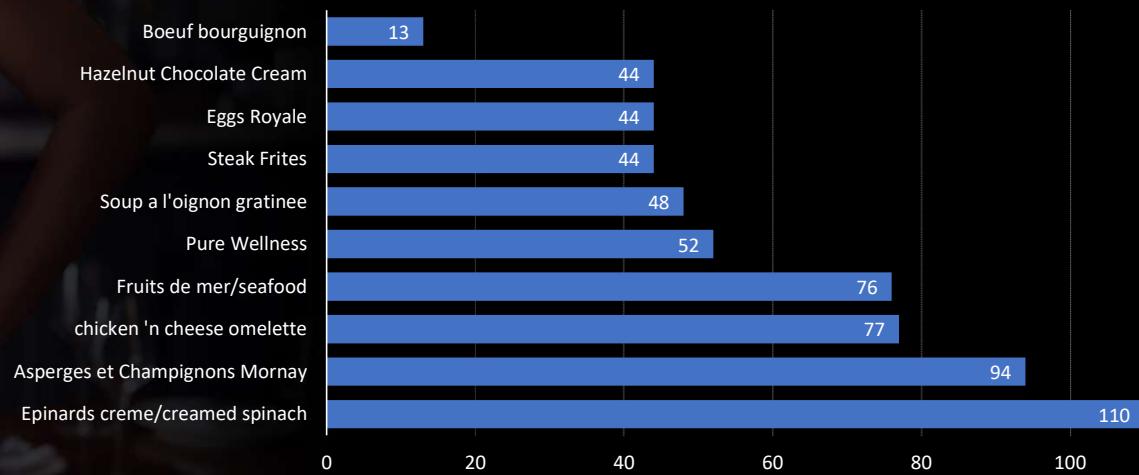
Pizza, Crepes and Breakfast rank highest in the sales of the company, totaling more than 75% of total sales. Also, in quantity of orders, they exceeds 70% in relation to the total of orders requested.

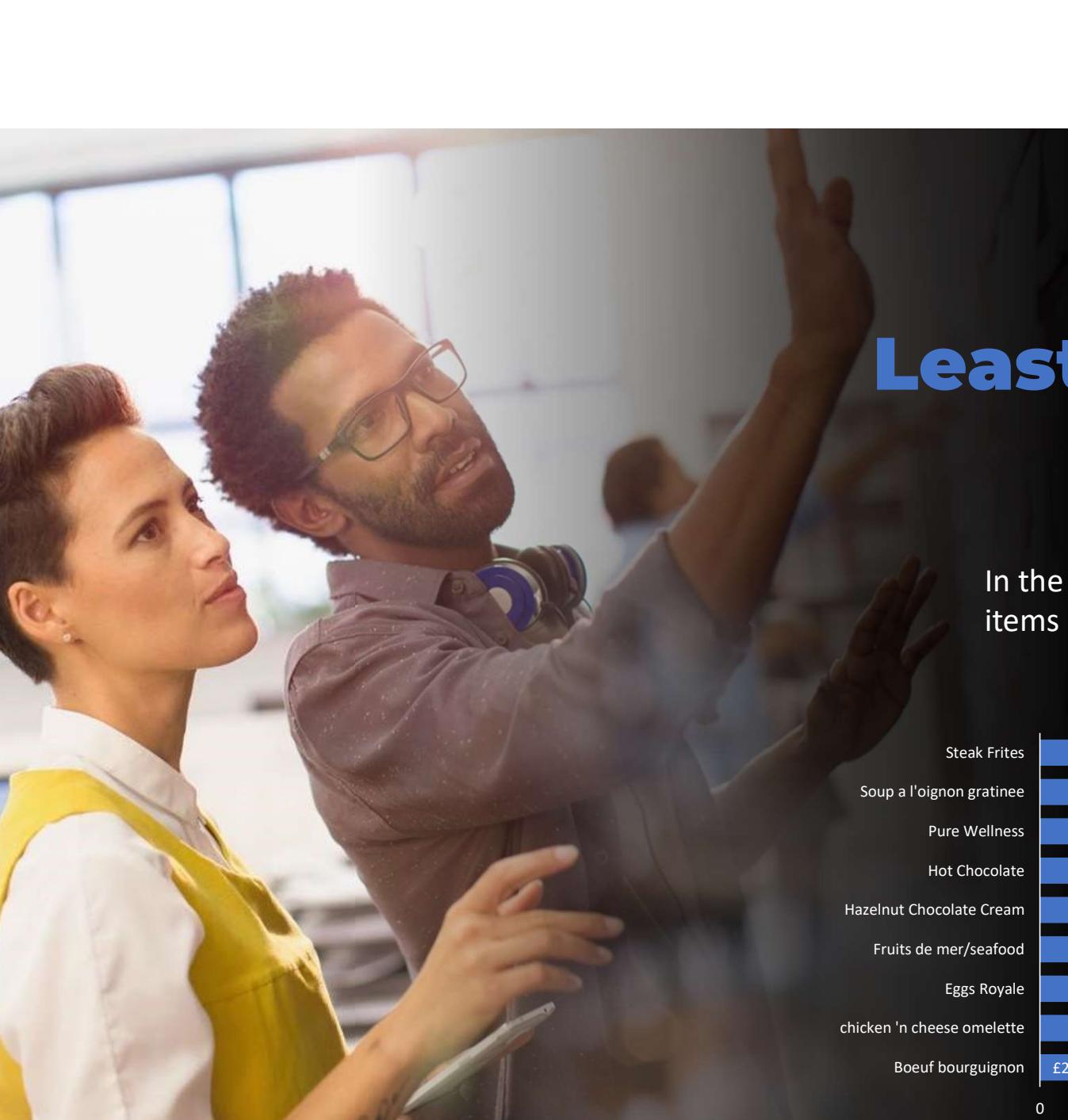


A photograph of three women standing in what appears to be a restaurant or bar. The woman in the foreground is wearing a light blue blouse and has her arms crossed. The other two women are in dark clothing. They are all smiling. The background shows shelves with bottles.

# Least popular items

In the chart below we identify the ten least sold items referring to quantity. From here we can identify, whether or not to streamline the menu or perform additional marketing.



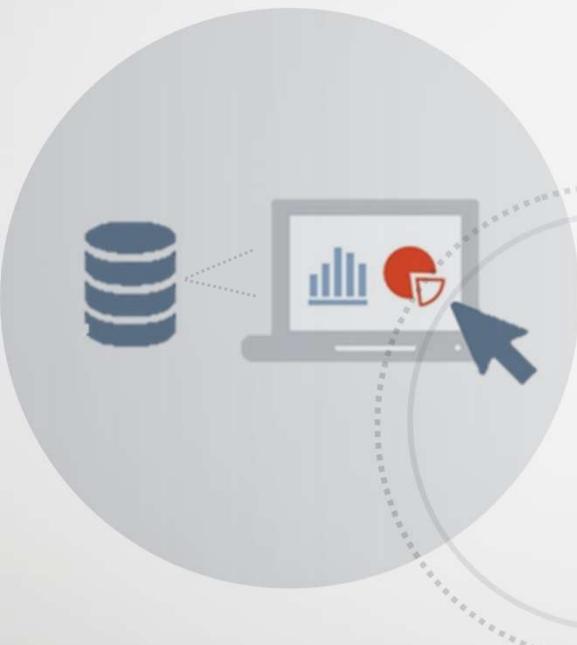
A photograph of two people, a man and a woman, looking up at a whiteboard in an office setting. The man, wearing glasses and a brown shirt, has his hands raised in a gesture of explanation. The woman, wearing a yellow vest over a white shirt, is holding a pen and looking towards the whiteboard.

# Least popular items

In the chart below we identify the ten least sold items referring to value.



# OLAP Database Design



## Online Analytical Processing

- Application: strategic level, assists in business analysis and decision making;
- Functionality: generates analysis and management reports with optimized reading data structure: few details, as it has a high level of summarization;
- Data storage: it uses the Data Warehouse to optimise the performance of the large number of data.



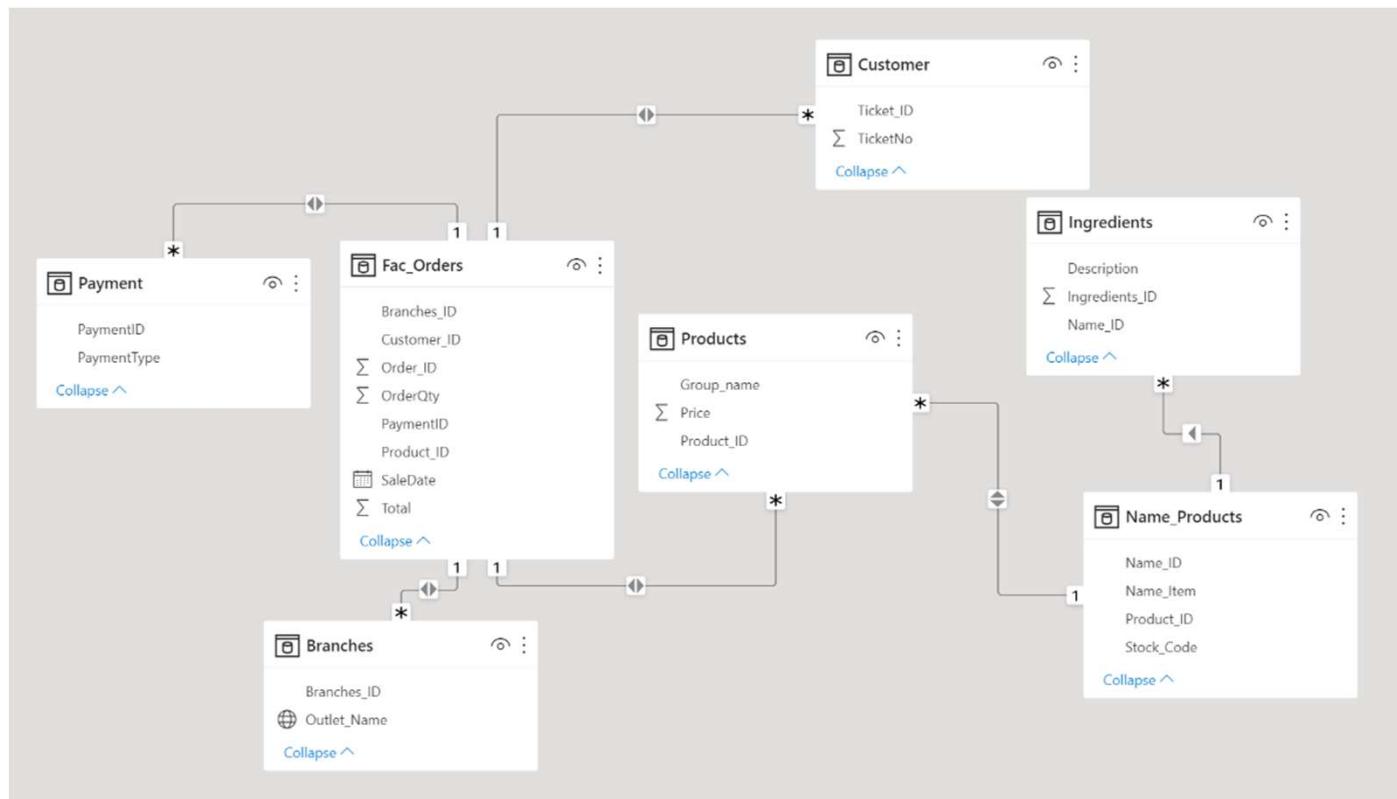
# OLTP Database Design

## Online Transaction Processing

- Application: working level of the company;
- Functionality: high speed, but not ideal for management analysis;
- Data structure: high level of detail;
- Data storage: done by conventional means (without using specific software);



Converting the database to a schema, as part of “best practices of implementing a Data Warehouse” I decided to transform the existing table into multiple tables so that it could speed up the analysis and become consistent and interactive. This conversion is intended to analyse a large volume of data in a dynamic and multidimensional way.



## Snowflake Schema:

The snowflake schema is a variant of the star schema. I opted for the Snowflake Schema multidimensional model, which is in the fact table, dimension tables as well as sub dimension tables are contained and presented in a normalized form in multiple related tables.

## Star schema:

The star schema is a mature modelling approach widely adopted by relational data warehouses. It requires modelers to classify their model tables as either dimension or fact.

The table below shows putting together the source to target mapping for the data. Implementing the ETL (Extract, Transform and Load) to create and populate the tables in SQL.

Data Mapping Document												
Source					Transform Rules	Target						
File Name	Column Name	Type	Length	Format		Table Name	Column Name	Type	Length	Format	Key?	Nullable
Galleria.txt	SaleDate	Date		YYYY-MM-DD	Generated by INSERT trigger on Galleria table, Primary KEY	dim.Banches	BranchesID	Integer			Primary key	NOT NULL
Galleria.txt	TicketNo	Integer	25	AAA999		dim.Banches	Outlet_name	nvarchar	50			NOT NULL
Galleria.txt	Outlet	String	100		Primary key Autogenerate	dim.Customer	Customer_ID	Integer			Primary key	NOT NULL
Galleria.txt	Total	Money				dim.Customer	TicketNumber	nvarchar		AAA999		NOT NULL
Galleria.txt	OrderQty	Float		£000.00,00		dbo.Fac_Orders	OrderID	Integer	25		Primary key	NOT NULL
Galleria.txt	Stock_Code	String	25	AAAA999		dbo.Fac_Orders	SaleDate	Date		YYYY-MM-DD		NOT NULL
					Select from all products-tables. Determine if current ticketnumber and set fact tables, Date and Payments .	dbo.Fac_Orders	Customer_ID	Integer	10		Foreign Key	NOT NULL
Galleria.txt	Name	String	50			dbo.Fac_Orders	BranchesID	Integer			Foreign Key	NOT NULL
Galleria.txt	Description	Integer		Max		dbo.Fac_Orders	Total	Money		£000.00,00		NOT NULL
Galleria.txt	Price	Money		£000.00,00		dbo.Fac_Orders	OrderQty	Float	10		Business Key	NOT NULL
Galleria.txt	Product_Group	String	10			dbo.Fac_Orders	Product_ID	Integer	30	AAAA999	Foreign Key	NOT NULL
Galleria.txt	Group_name	String	30	A		dbo.Fac_Orders	PaymentID	Integer			Foreign Key	NOT NULL
Galleria.txt	CardType	String				dimIngredients	Ingredients_Id	decimal			Primary key	NOT NULL
						dimIngredients	Description	Integer				NOT NULL
						dimIngredients	NameID	Integer			Primary key	NOT NULL
						dim.Name_Products	Stock_code	nvarchar	25	AAAA999		NOT NULL
						dim.Name_Products	Name_item	nvarchar	50			NOT NULL
						dim.Name_Products	Product_ID	Integer			Foreign Key	NOT NULL
						dim.Payment	PaymentID	Integer			Primary key	NOT NULL
						dim.Payment	PaymentType	nvarchar	50			NOT NULL
						dim.Products	Product_ID	Integer			Primary key	NOT NULL
						dim.Products	Group_name	nvarchar	50			NOT NULL
						dim.Products	Price	Money		£000.00,00		NOT NULL

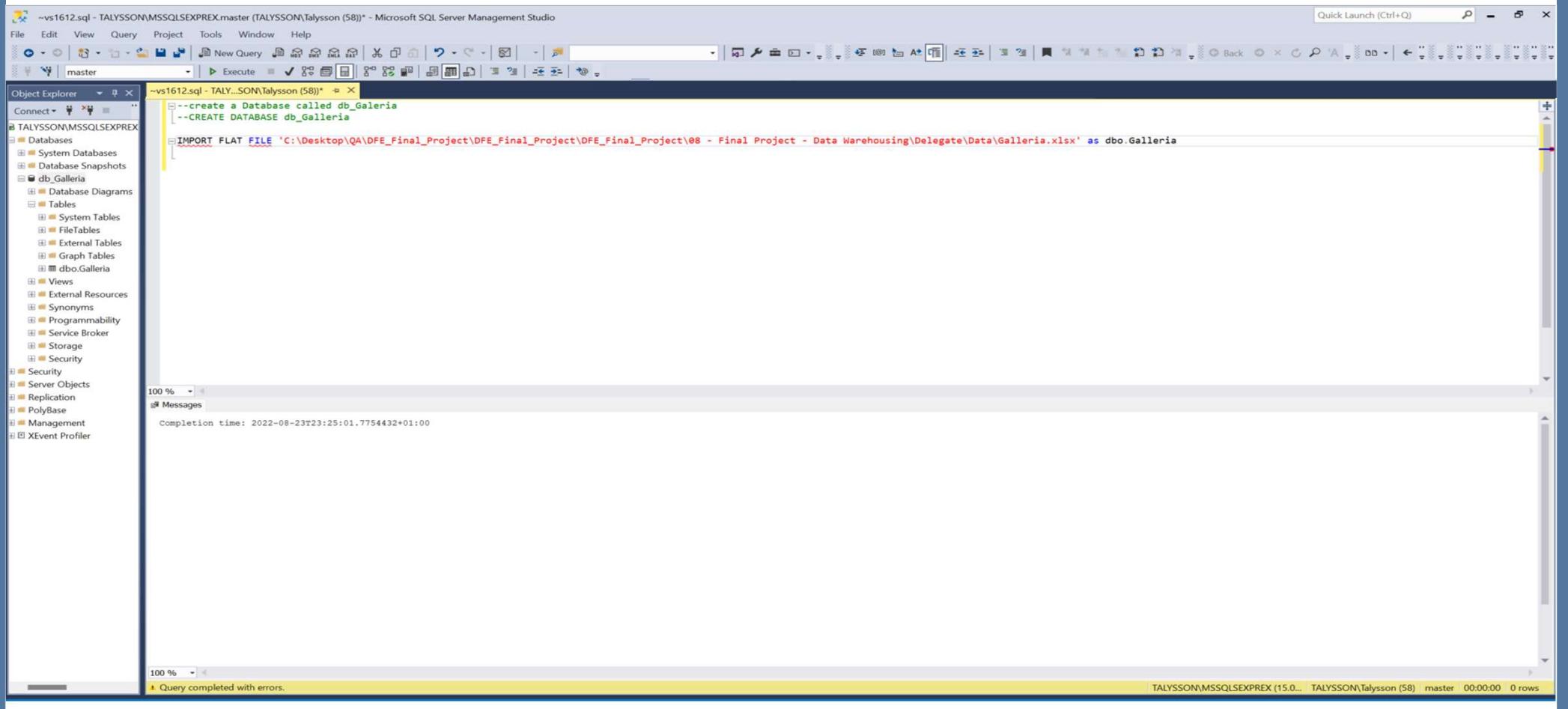
## Creating Galleria database on SQL.

The screenshot shows the Microsoft SQL Server Management Studio (SSMS) interface. The title bar reads "SQLQuery1.sql - TALYSSON\MSSQLSEXPRESS.master (TALYSSON\Talysson (64))\* - Microsoft SQL Server Management Studio". The main window displays a query editor with the following SQL code:

```
CREATE DATABASE db_Galleria
ON PRIMARY (
    NAME = db_Galleria,
    FILENAME = 'C:\Desktop\QA\Projectplan\db_Galleria.MDF',
    SIZE = 6MB,
    MAXSIZE = 15MB,
    FILEGROWTH = 10%
)
```

The Object Explorer on the left shows the connection to "TALYSSON\MSSQLSEXPRESS" and its databases, including "master", "model", "msdb", and "tempdb". The status bar at the bottom indicates "Connected. (1/1)" and "TALYSSON\MSSQLSEXPRESS (15.0... TALYSSON\Talysson (64) master 00:00:00 0 rows".

## Importing Galleria.txt into database on SQL.



The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads: '~vs1612.sql - TALYSSON\MSSQLSEXPRESS master (TALYSSON\Talysson (58)) - Microsoft SQL Server Management Studio'. The main window displays a query editor with the following SQL code:

```
--create a Database called db_Galleria
--CREATE DATABASE db_Galleria

IMPORT FLAT FILE 'C:\Desktop\QA\DFE_Final_Project\DFE_Final_Project\DFE_Final_Project\08 - Final Project - Data Warehousing\Delegate\Data\Galleria.xlsx' as dbo.Galleria
```

The Object Explorer on the left shows the database structure under 'TALYSSON\MSSQLSEXPRESS\master'. The 'Tables' node for the 'db\_Galleria' database is expanded, showing various table objects like 'System Tables', 'FileTables', 'External Tables', 'Graph Tables', and 'dbo.Galleria'. The status bar at the bottom indicates: 'Completion time: 2022-08-23T23:25:01.7754432+01:00' and 'Query completed with errors.'

## SP\_HELP and SP\_COLUMNS to View and Describe the Structure of a Table.

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left shows the database structure, including the db\_Galleria database. The central pane displays the results of two system stored procedures: `sp_help [Galleria]` and `sp_columns [Galleria]`.

**sp\_help [Galleria] Results:**

Name	Owner	Type	Created_datetime
Galleria	dbo	user table	2022-08-23 23:33:44.437

**sp\_columns [Galleria] Results:**

Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
SaleDate	date	no	3	10	0	no	(n/a)	(n/a)	NULL
TicketNo	int	no	4	10	0	no	(n/a)	(n/a)	NULL
Outlet	nvarchar	no	100			no	(n/a)	(n/a)	Latin1_General_CI_AS
Total	float	no	8	53	4	NULL	no	(n/a)	NULL
OrderQty	tinyint	no	1	3	0	no	(n/a)	(n/a)	NULL
Stock_Code	nvarchar	no	100			no	(n/a)	(n/a)	Latin1_General_CI_AS
Name	nvarchar	no	100			no	(n/a)	(n/a)	Latin1_General_CI_AS
Description	nvarchar	no	-1			no	(n/a)	(n/a)	Latin1_General_CI_AS
Price	money	no	8	19	4	no	(n/a)	(n/a)	NULL
Product_Group	nvarchar	no	100			no	(n/a)	(n/a)	Latin1_General_CI_AS
Group_name	nvarchar	no	100			no	(n/a)	(n/a)	Latin1_General_CI_AS
CardType	nvarchar	no	100			no	(n/a)	(n/a)	Latin1_General_CI_AS

**sp\_columns [Galleria] Results (Continued):**

Identity	Seed	Increment	Not For Replication
No identity column defined.	NULL	NULL	NULL

**sp\_columns [Galleria] Results (Continued):**

RowGuidCol
No rowguidcol column defined.

**sp\_columns [Galleria] Results (Continued):**

Data_located_on_filegroup
PRIMARY

**Status Bar:** Query executed successfully. TALYSSON\MSSQLSEXPRESS (15.0... TALYSSON\Talysson (56) db\_Galleria 00:00:00 | 16 rows

## Creating dimensions and tables in SQL Server using CREATE TABLE command.

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left lists the database structure for 'TALYSSON\MSSQLSEXPRESS (15.0...)' and 'TALYSSON\Talysson (56)'. The 'Tables' node under 'db\_Galleria' is expanded, showing the creation scripts for various tables: Customer, Branches, Products, Name\_Products, Ingredients, Orders, and Payment. The 'Messages' pane at the bottom displays the successful execution of the commands, indicating they completed successfully with a completion time of 2022-08-24T02:42:20.5465292+01:00. The status bar at the bottom right shows the session details: TALYSSON\MSSQLSEXPRESS (15.0...), TALYSSON\Talysson (56), db\_Galleria, 00:00:00, and 0 rows.

```
--sp_help [Galleria]
CREATE TABLE Customer
(
    CustomerID INT NOT NULL IDENTITY(1,1) PRIMARY KEY,
    TicketNo INT NOT NULL
)
CREATE TABLE Branches
(
    BranchesID INT NOT NULL IDENTITY(1,1) PRIMARY KEY,
    Outlet_Name VARCHAR(100) NOT NULL
)
CREATE TABLE Products
(
    ProductID INT NOT NULL IDENTITY(1,1) PRIMARY KEY,
    Group_Name VARCHAR(100) NOT NULL
)
CREATE TABLE Name_Products
(
    NameProductID INT NOT NULL IDENTITY(1,1) PRIMARY KEY,
    NameP VARCHAR(100) NOT NULL,
    Stock_Code NVARCHAR(100) NOT NULL,
    ProductID INT NOT NULL FOREIGN KEY REFERENCES Products (ProductID),
    OrderID INT NOT NULL
)
CREATE TABLE Ingredients
(
    IngredientID INT NOT NULL IDENTITY(1,1) PRIMARY KEY,
    Description_I VARCHAR(1000),
    Stock_Code NVARCHAR(100) NOT NULL,
    NameProductID INT NOT NULL FOREIGN KEY REFERENCES Name_Products (NameProductID),
    OrderID INT NOT NULL
)
CREATE TABLE Payment
(
    PaymentID INT NOT NULL IDENTITY(1,1) PRIMARY KEY,
    Payment_type VARCHAR(100) NOT NULL,
    OrderID INT NOT NULL
)
CREATE TABLE Orders
(
    OrderID INT NOT NULL IDENTITY(1,1) PRIMARY KEY,
    SaleDate DATE NOT NULL,
    CustomerID INT NOT NULL FOREIGN KEY REFERENCES Customer(CustomerID),
    BranchesID INT NOT NULL FOREIGN KEY REFERENCES Branches(BranchesID),
    OrderQty TINYINT NOT NULL,
    Total_orders FLOAT NOT NULL,
    ProductID INT NOT NULL FOREIGN KEY REFERENCES Products (ProductID),
    PaymentID INT NOT NULL FOREIGN KEY REFERENCES Payment (PaymentID)
)
```

75 %

Messages

Commands completed successfully.

Completion time: 2022-08-24T02:42:20.5465292+01:00

75 %

Query executed successfully.

TALYSSON\MSSQLSEXPRESS (15.0...), TALYSSON\Talysson (56), db\_Galleria, 00:00:00, 0 rows

On the images bellow, we can see populating tables, diagram, cleansing of the data and manipulating features.

```

USE [db_Galleria]
GO

INSERT INTO dbo.Branches
SELECT [Outlet] FROM dbo.Galleria;

INSERT INTO dbo.Products
SELECT [Group_name]FROM dbo.Galleria;

INSERT INTO dbo.Customer
SELECT [TicketNo] FROM dbo.Galleria;

select * from dbo.Branches
select * from dbo.Products
select * from dbo.Customer

ALTER TABLE dbo.Name_Products
ADD NameProductID INT FOREIGN KEY REFERENCES Name_Products (NameProductID)

INSERT INTO dbo.Name_Products
SELECT * FROM dbo.Galleria;

INSERT INTO [dbo].[Fac_Orders]
SELECT [SaleDate],[OrderQty],[Total] FROM dbo.Galleria;

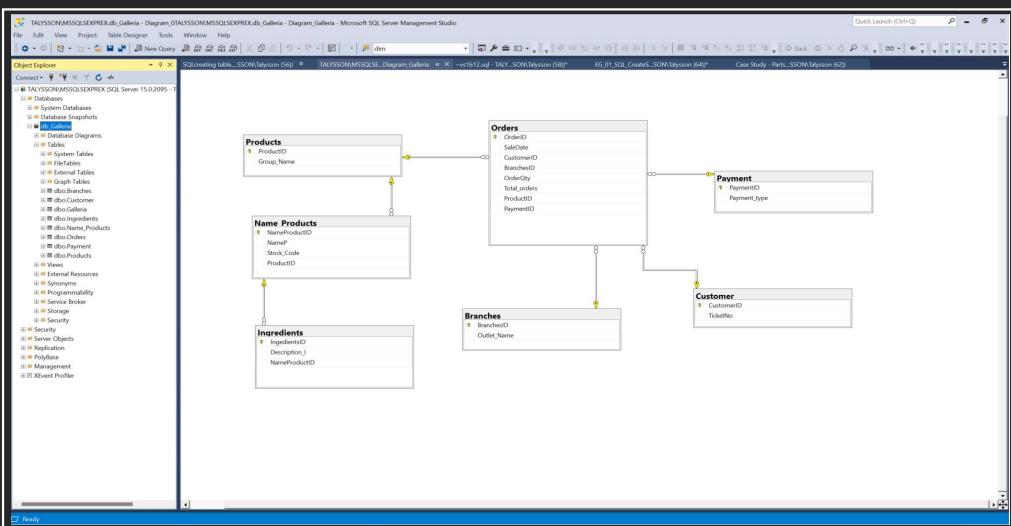
INSERT INTO [dbo].[Name_Products]
SELECT [CardType]FROM dbo.Galleria;
    
```

```

UPDATE Branches
SET Outlet_Name = 'Middlesborough - UK'
WHERE Outlet_Name = 'Middlesborough';
    
```

Completion time: 2022-08-25T03:31:06.1914671+01:00

Query executed successfully



```

***** Script for SelectTopNRows command From SSMS *****
use [db_Galleria]

SELECT TOP (10000)
[SaleDate],[Total],[Branches_ID],[OrderQty]
FROM [dbo].[Fac_Orders]
    
```

Branches_ID	OrderQty
1	2016-07-01 15 1
2	2016-07-01 20 2
3	2016-07-01 10 3
4	2016-07-01 5 4
5	2016-07-01 10 5
6	2016-07-01 20 6
7	2016-07-01 25 7
8	2016-07-01 10 8
9	2016-07-01 19 9
10	2016-07-01 10 2
11	2016-07-01 19 11
12	2016-07-01 12 6
13	2016-07-01 25 13
14	2016-07-01 475 14
15	2016-07-01 10 1
16	2016-07-01 32 16
17	2016-07-01 8 17
18	2016-07-01 16 18
19	2016-07-01 16 19
20	2016-07-01 16 20
21	2016-07-01 16 21
22	2016-07-01 24 22

Query executed successfully



# Test approaches

**Creation and review of input data that should be processed by client's application. Test data consist of correct and incorrect data. If incorrect data is entered into the system, the input should be rejected. Results of input procedures are compared with expected behaviour of application in order to determine whether input controls are in place.**

Some types of data testing:

- Entity Level: a data entity is an abstraction from the physical implementation of database tables;
- Record level: with a direct horizon line and the pay mechanically linked to the result.
- Column Level: like tables, each column has a unique name defined when it is created
- Column Value Level: the required Level property is a boolean managed property that describes if a column value is required.

## Creating a data flow diagram graphical representation of the "flow" of data through an information system, modelling its process aspects.

The screenshot shows the Power BI home page on the left and a 'Create a workspace' dialog box on the right. A red arrow points from the workspace name field in the dialog box to the 'Recent' tab on the Power BI home page, indicating a connection between creating a workspace and viewing recent items.

**Create a workspace**

Workspace image  
Upload Delete

Workspace name  
Data Galleria

Available

Description  
Describe this workspace

Learn more about workspace settings

Advanced

Save Cancel

**Power BI**

Introducing the Power BI app in Teams Collaborate with your team members on data and take action. Select Open in Teams to get started [Learn more](#)

Good afternoon, TALYSSON

Find and share actionable insights to make data-driven decisions

**Recommended**

- You frequently open this
- You frequently open this
- You frequently open this
- Getting started with Power BI

**Recent** Favorites My apps

	Name	Type	Opened	Location
	Galleria1	Report	3 days ago	My workspace
	Talysson	Report	3 days ago	My workspace
	Sales Analytics for Dynamics 365 Sales	App	24 days ago	Apps
	Sales and Marketing sample	App	26 days ago	Apps
	SalesData 31-07.xlsx	Dashboard	26 days ago	My workspace

Get data

Choosing import the data on PowerBi by power query we can normalize the data and expedite the entire process.

The screenshot shows the Power BI web application interface. On the left, there is a navigation sidebar with various options like Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Learn, Workspaces, and Sales Analytics for ... . The main area is titled "Power Query" and contains a "Choose data source" section. A search bar at the top of this section has the text "sql" typed into it. Below the search bar, there are tabs for "All categories", "File", "Database", "Power Platform", "Azure", "Online services", and "Other". Under the "Database" tab, there are five connector options: "SQL Server database" (Database icon), "MySQL database" (Database icon), "PostgreSQL database" (Database icon), "Azure SQL database" (SQL Database icon), and "Azure Synapse Analytics (SQL DW)" (SQL Database icon). The "Azure SQL database" option is highlighted with a yellow border.

## Define table by the database

https://app.powerbi.com/groups/98c74ca0-e539-4660-afcf-7ae7edd32e0b/dataflowAuthoring

Power BI Database Galleria

Home Create Browse Data hub Metrics Apps Deployment pipelines Learn Workspaces > Sales Analytics for ...

Start creating your dataflow

**Define new tables**  
Choose a data source to define the tables for your dataflow. You can map your data to standard [Common Data Model](#) tables, or define custom tables instead.  
[Learn more](#)

**Add new tables**

**Link tables from other dataflows**  
Linking to tables from other dataflows reduces duplication and helps maintain consistency across your organization.  
[Learn more](#)

**Add linked tables**

**Import Model**  
Choose a dataflow model to import into your workspace.  
[Learn more](#)

**Import model**

**Attach a Common Data Model folder (preview)**  
Attach a Common Data Model folder from your Azure Data Lake Storage Gen2 account to a new dataflow, so you can use it in Power BI.  
[Learn more](#)

**Create and attach**

Get data

## Connecting to the data source.

Power BI Database Galleria

Power Query

Connect to data source

SQL Server database Database Learn more

Connection settings

Server \* TALYSSON\MYSQLSEXPRESS

Database Galleria

Advanced options

Connection credentials

Connection Create new connection

Connection name Connection

Data gateway (none)

Authentication kind Basic

Username

Password

Get data Back Cancel Next

22°C Partly sunny 17:41 28/08/2022

The screenshot shows the 'Power Query' interface within the 'Power BI' application. The left sidebar contains navigation links like Home, Create, Browse, Data hub, Metrics, Apps, Deployment pipelines, Learn, Workspaces, and Sales Analytics. The main area is titled 'Connect to data source' and is set to 'SQL Server database'. The 'Server' field is populated with 'TALYSSON\MYSQLSEXPRESS' and the 'Database' field is set to 'Galleria'. Below this, under 'Connection credentials', there are fields for 'Connection name' (set to 'Connection'), 'Data gateway' (set to '(none)'), 'Authentication kind' (set to 'Basic'), and two empty fields for 'Username' and 'Password'. At the bottom, there are 'Get data', 'Back', 'Cancel', and 'Next' buttons. The status bar at the bottom shows the weather as '22°C Partly sunny', the time as '17:41', and the date as '28/08/2022'.

## Data inside of the PowerBI, where we can transform and load the tables.

Galleria2 - Power BI Desktop

Search

TALYSSON DA SILVA OLIVEIRA

File Home Help Table tools

Name: Fac\_Orders

Mark as date table v Manage relationships New measure Quick New measure column New table

Structure Calendars Relationships Calculations

Auto recovery contains some recovered files that haven't been opened. View recovered files

Fields

Search

Brances  
Customer  
Fac\_Orders  
Ingredients  
Name\_Products  
Payment  
Products

Order_ID	SaleDate	Customer_ID	Branches_ID	Total	OrderQty	Product_ID	PaymentID
18661	01 February 2018	18661	18661	£9.50	1	18661	18661
18664	01 February 2018	18664	18664	£9.50	1	18664	18664
18667	01 February 2018	18667	18667	£9.50	1	18667	18667
18676	01 February 2018	18676	18676	£9.50	1	18676	18676
18678	01 February 2018	18678	18678	£9.50	1	18678	18678
18680	01 February 2018	18680	18680	£9.50	1	18680	18680
18681	01 February 2018	18681	18681	£9.50	1	18681	18681
18685	01 February 2018	18685	18685	£9.50	1	18685	18685
18688	01 February 2018	18688	18688	£9.50	1	18688	18688
18690	01 February 2018	18690	18690	£9.50	1	18690	18690
18692	01 February 2018	18692	18692	£9.50	1	18692	18692
18698	01 February 2018	18698	18698	£9.50	1	18698	18698
18702	01 February 2018	18702	18702	£9.50	1	18702	18702
18703	01 February 2018	18703	18703	£9.50	1	18703	18703
18705	01 February 2018	18705	18705	£9.50	1	18705	18705
18708	01 February 2018	18708	18708	£9.50	1	18708	18708
18780	01 February 2018	18780	18780	£9.50	1	18780	18780
18782	01 February 2018	18782	18782	£9.50	1	18782	18782
18784	01 February 2018	18784	18784	£9.50	1	18784	18784

Table: Fac\_Orders (40,705 rows)

Update available (click to download)

# Measures and Visualisations:



Data visualization helps us turn all your granular data into easy-to-understand, visually appealing, and useful business information. By accessing external data sources, it unify the data and apply AI-powered analytics to reveal the relationships between KPIs, the market, and the world.

Data visualisation brings data to life and lets you grasp the insights hidden in the numbers.

Measures are created and displayed in Report View or Data View. Measures that you create are displayed in the Fields list with a calculator icon. You can name the measures whatever you like and add them to a new or existing visualization, just like any other field.

- Below we will see the reports generated in the PowerBI.

# Galleria Holdings

**Year**

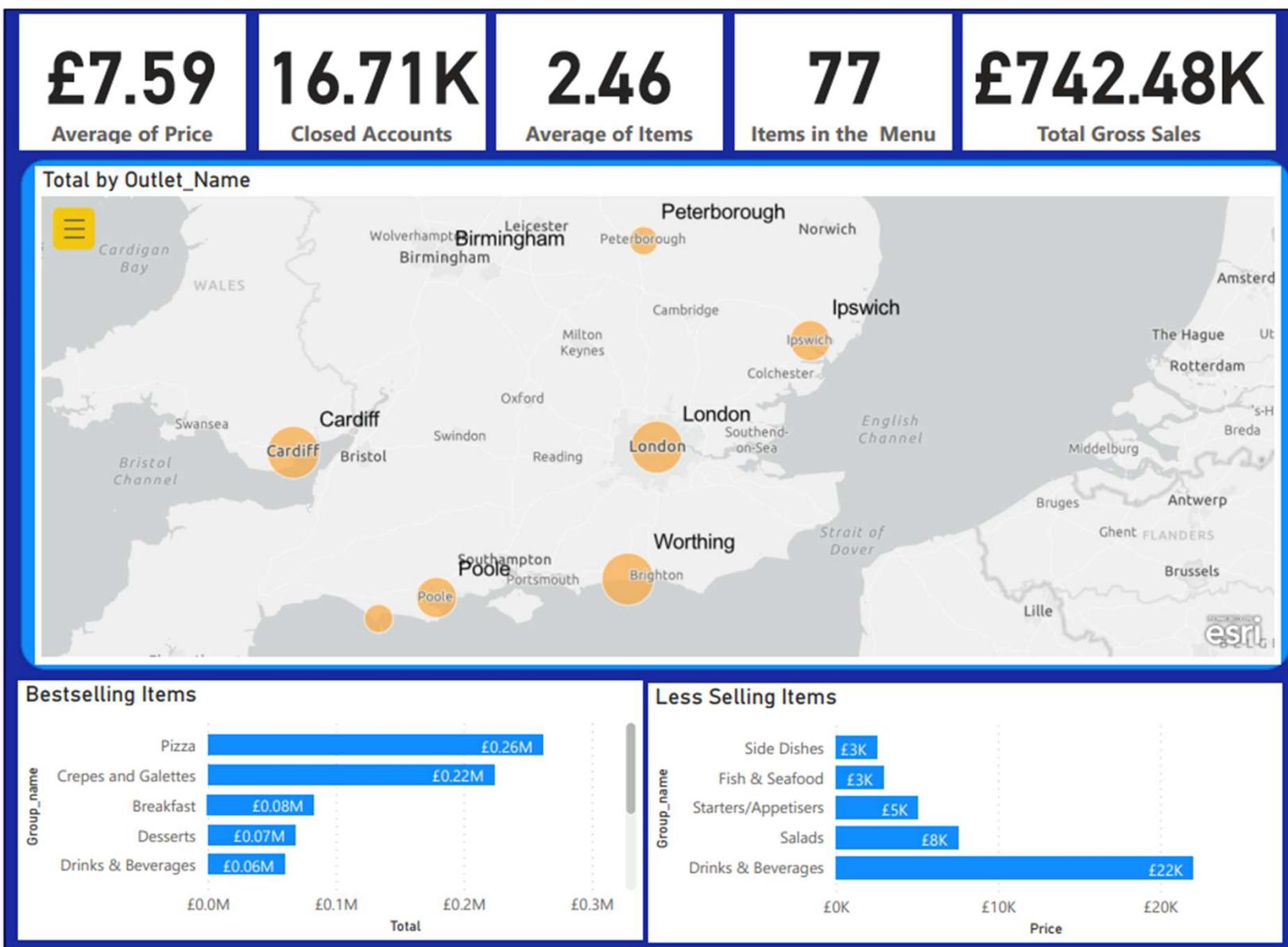
- Select all
- 2016
- 2017
- 2018
- 2019

**Outlet\_Name**

- Select all
- Birmingham
- Cardiff
- Edinburgh
- Ipswich
- London
- Middlesborough - UK
- Peterborough
- Poole
- Weymouth
- Worthing

**PaymentType**

- Select all
- Debit Card
- Maestocard
- Money
- Visa



# Galleria Holdings

**£7.59**

**16.71K**

**2.46**

**77**

**£742.48K**

Year

- Select all
- 2016
- 2017
- 2018
- 2019

Average of Price

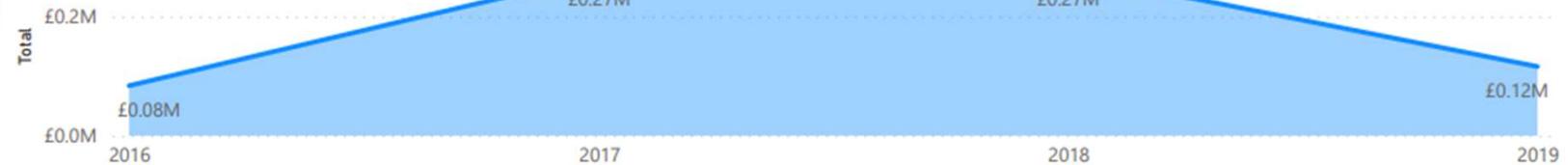
Closed Accounts

Average of Items

Items in the Menu

Total Gross Sales

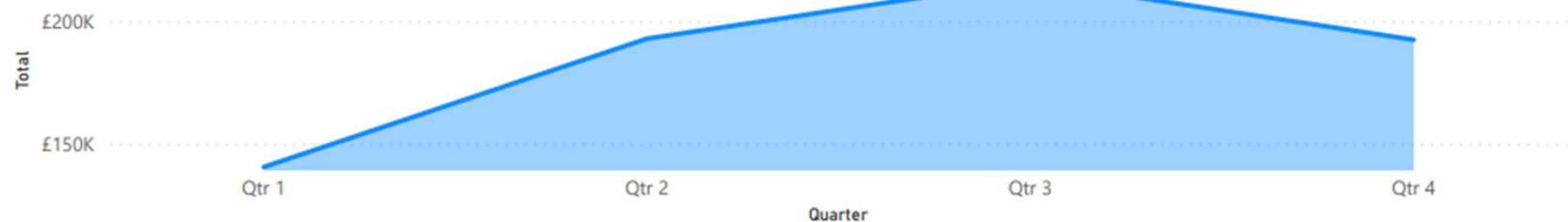
## Total Sales by Year



Outlet\_Name

- Select all
- Birmingham
- Cardiff
- Edinburgh
- Ipswich
- London
- Middlesbrough - UK
- Peterborough
- Poole
- Weymouth
- Worthing

## Total Sales by Quarter



PaymentType

- Select all
- Debit Card
- Maestocard
- Money
- Visa

## Total Sales by Month



# Galleria Holdings

## Year

- Select all
- 2016
- 2017
- 2018
- 2019

## Outlet\_Name

- Select all
- Birmingham
- Cardiff
- Edinburgh
- Ipswich
- London
- Middlesborough - UK
- Peterborough
- Poole
- Weymouth
- Worthing

## PaymentType

- Select all
- Debit Card
- Maestercard
- Money
- Visa

**£7.59**

**16.71K**

**2.46**

**77**

**£742.48K**

Average of Price

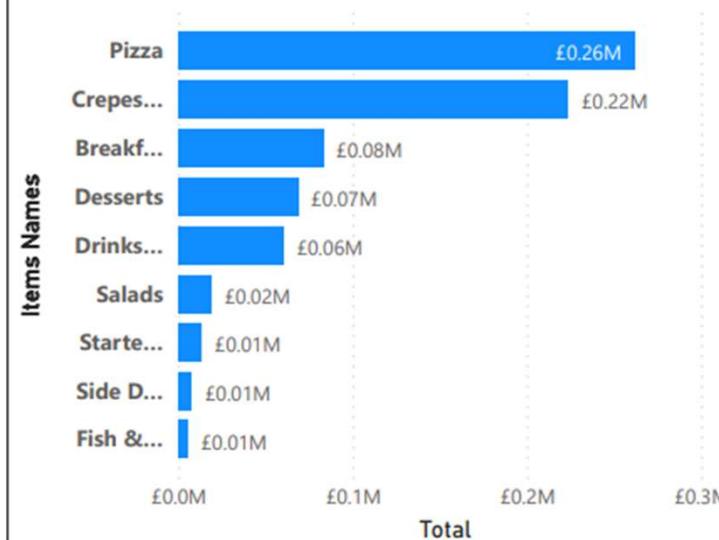
Closed Accounts

Average of Items

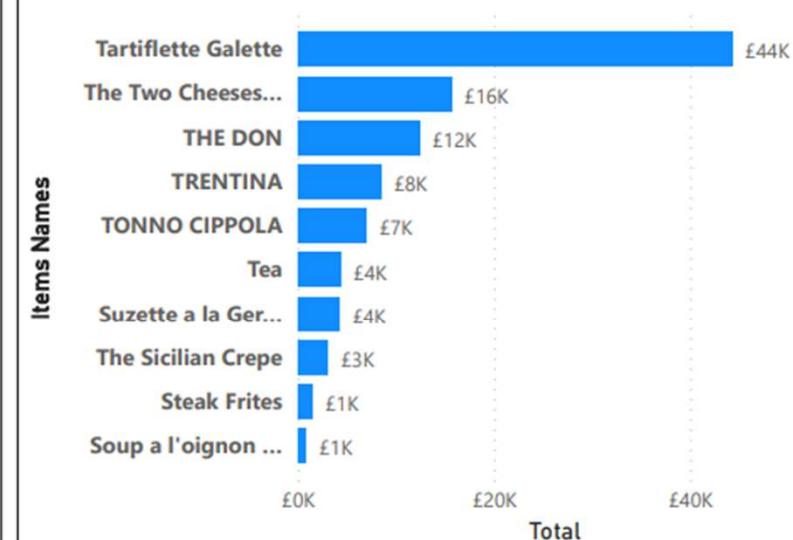
Items in the Menu

Total Gross Sales

## Topselling Accounting Group

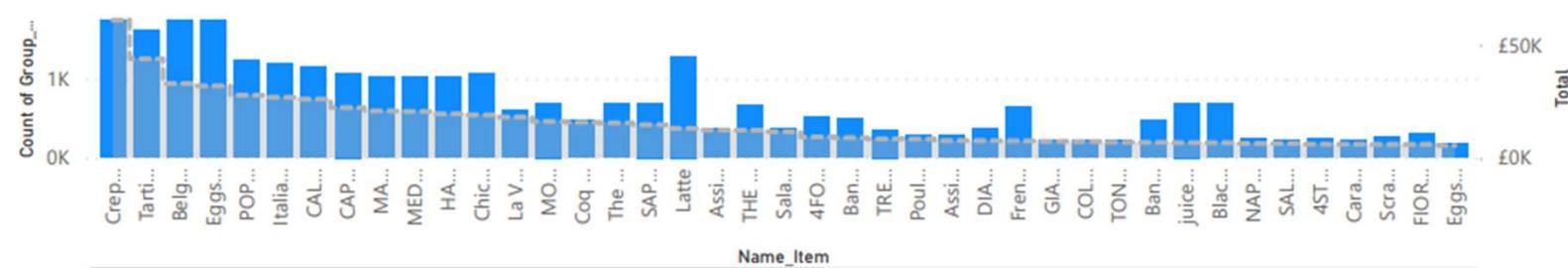


## Topselling Accounting Group



## Count of Group\_name and Total by Name\_Item

● Count of Group\_name ● Total



# Galleria Holdings

**Year**

- Select all
- 2016
- 2017
- 2018
- 2019

**Outlet\_Name**

- Select all
- Birmingham
- Cardiff
- Edinburgh
- Ipswich
- London
- Middlesborough - UK
- Peterborough
- Poole
- Weymouth
- Worthing

**PaymentType**

- Select all
- Debit Card
- Maestercard
- Money
- Visa

**£7.59**   **16.71K**   **2.46**   **77**   **£742.48K**

Average of Price

Closed Accounts

Average of Items

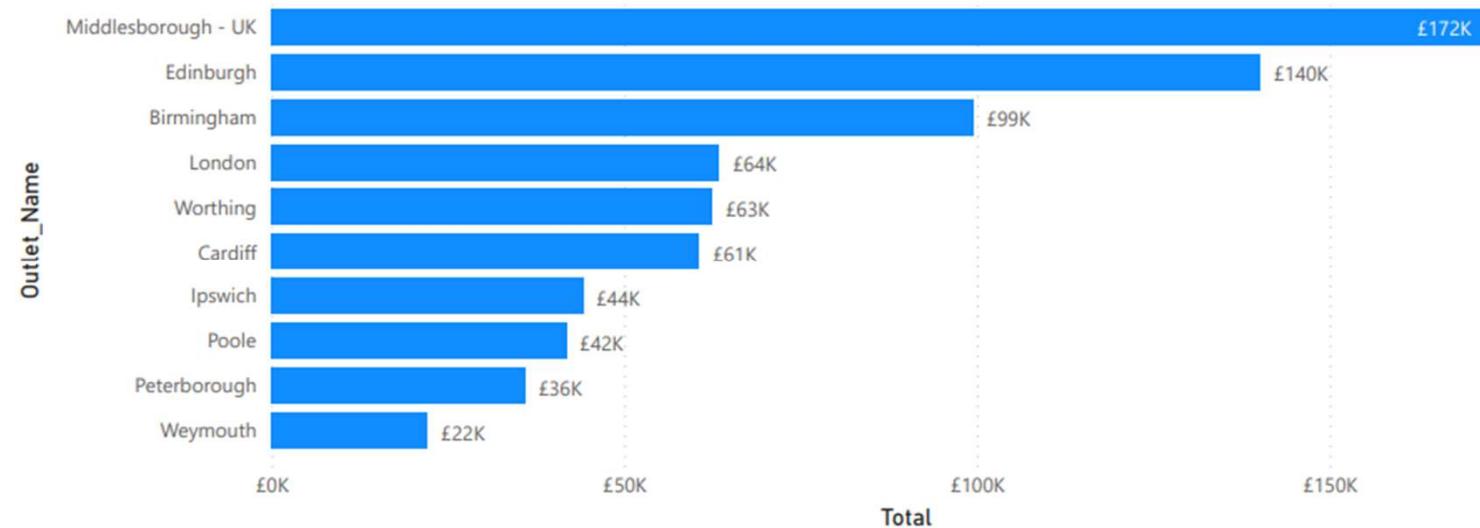
Items in the Menu

Total Gross Sales

Total by PaymentType



Total by Outlet\_Name



# Galleria Holdings

**£7.59** **16.71K** **2.46** **77** **£742.48K**

**Year**

- Select all
- 2016
- 2017
- 2018
- 2019

**Outlet\_Name**

- Select all
- Birmingham
- Cardiff
- Edinburgh
- Ipswich
- London
- Middlesborough - UK
- Peterborough
- Poole
- Weymouth
- Worthing

**PaymentType**

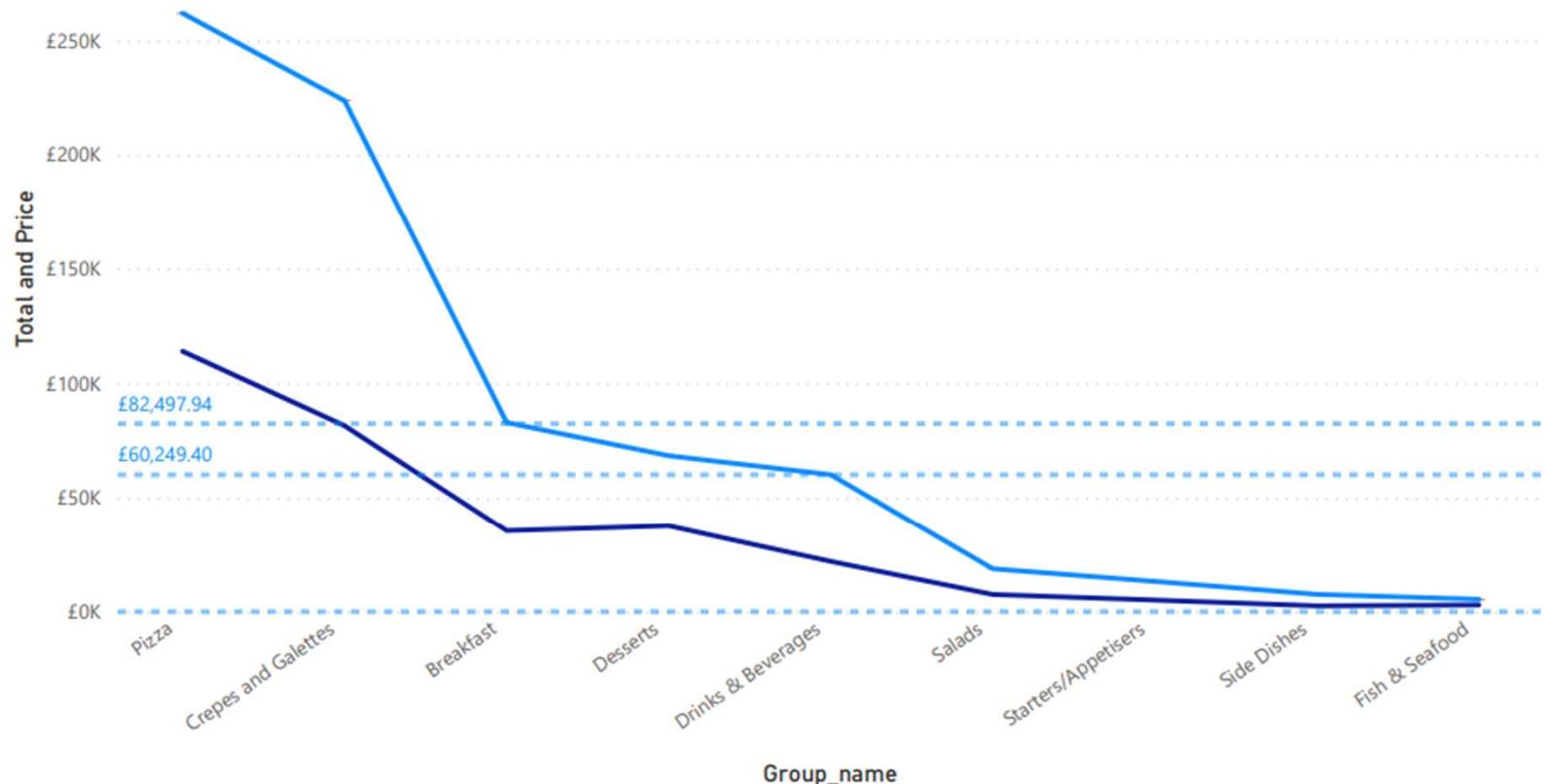
- Select all
- Debit Card
- Maestercard
- Money
- Visa

Average of Price      Closed Accounts      Average of Items      Items in the Menu      Total Gross Sales

## Total and Price by Group\_name

Total  Price

£300K



# Galleria Holdings

**£7.59** **16.71K** **2.46** **77** **£742.48K**

**Year**

- Select all
- 2016
- 2017
- 2018
- 2019

**Outlet\_Name**

- Select all
- Birmingham
- Cardiff
- Edinburgh
- Ipswich
- London
- Middlesborough - UK
- Peterborough
- Poole
- Weymouth
- Worthing

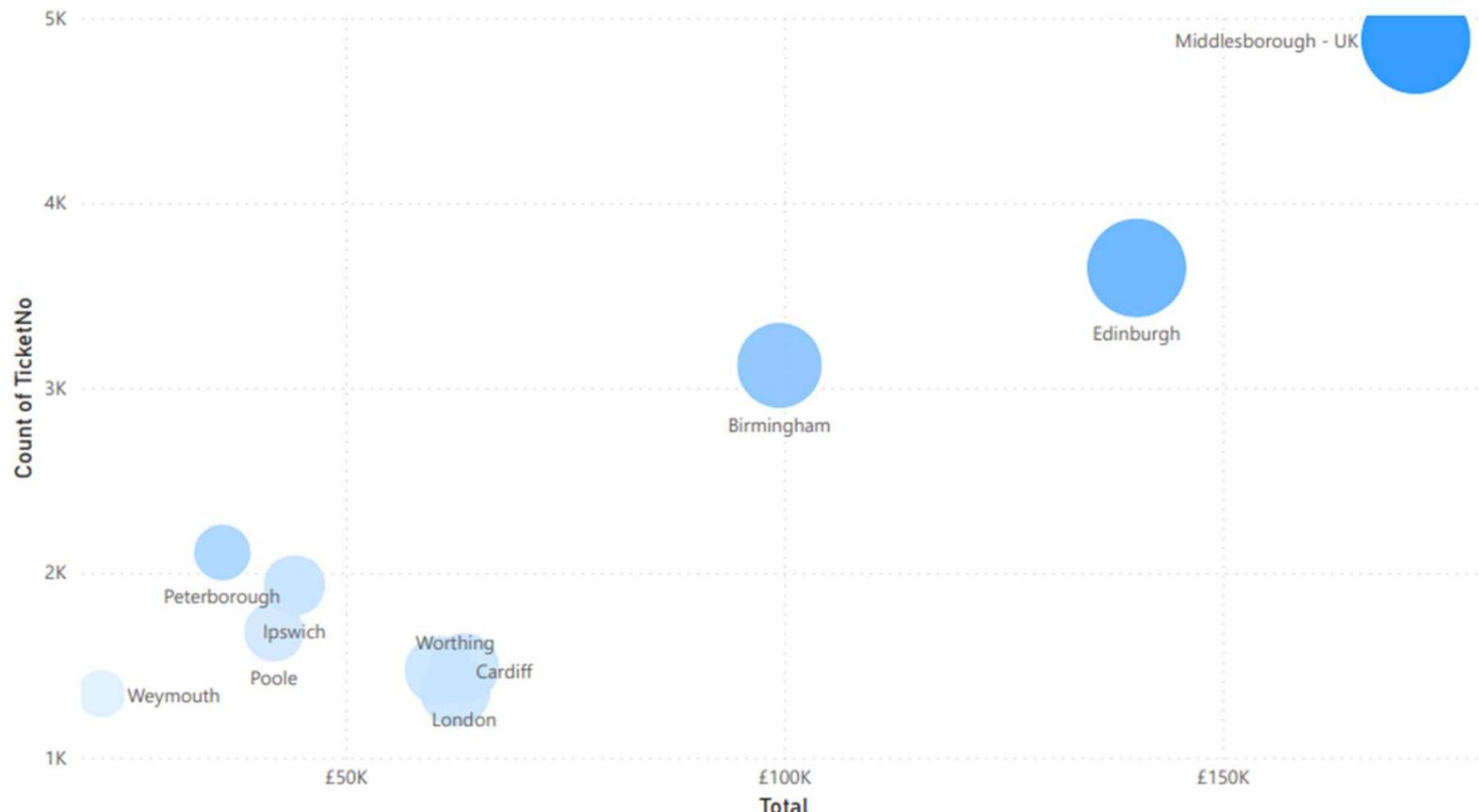
**PaymentType**

- Select all
- Debit Card
- Maestercard
- Money
- Visa

Average of Price      Closed Accounts      Average of Items      Items in the Menu      Total Gross Sales

Total, Count of TicketNo and Total by Outlet\_Name

Count of Outlet\_Name 1.93K 9.15K



# Conclusion

As we've covered in this presentation, various characteristics should be evaluated to be able to take for the best action of implementing a data warehouse. Armed with the necessary tools, we can get a clear picture of the size of the product we should focus on next.



With slices, filters and clear graphs, we can visualise what the report is showing us so we can take action to make the right decision. We can also visualise the growth of the company during this period and see which outlets sell the most, which products sell the most, and which products have the highest added value. Then came predictions.

Taking into consideration that some items should be kept on the menu because of customer preference, because the competition also works with these specific items or simply because they can attract more customers.

Another factor is that we can't measure profit without cost value, which makes it difficult to make a decision because we can't extract much information from it just by the number of sales and the total value.

# **Talysson Oliveira**

## Data Analyst / Data Engineering

