

# BigBasket Product & Pricing Data Model



- CHANCHAL SATISHCHANDRA PAL.  
BATCH- T341 / DS

# BigBasket Product & Pricing Data Model

The **BigBasket Business Insights & Analytics Project** is a comprehensive SQL-based data analysis initiative designed to extract, analyze, and interpret key business metrics from an e-commerce dataset. The project focuses on understanding product performance, pricing behavior, discount strategies, and brand efficiency through structured SQL queries.

By transforming raw data into actionable insights, it demonstrates how SQL can drive data-informed business decisions.

This project emphasizes the importance of data analytics in e-commerce, showcasing how structured databases can enhance customer satisfaction, optimize pricing strategies, and strengthen brand performance.

It serves as a foundation for business intelligence and data-driven decision-making within a retail analytics context.

## **PROJECT AIM:**

The aim of the **BigBasket Business Insights & Analytics Project** is to analyze and interpret BigBasket's product and pricing data using SQL to generate meaningful business insights.

This project focuses on designing an efficient relational database model and applying advanced SQL techniques to explore key areas such as product performance, pricing patterns, brand competitiveness, and discount strategies.

By leveraging SQL as the core analytical tool, the project aims to demonstrate how structured queries and relational data analysis can transform raw data into valuable information that supports data-driven decision-making.

It also highlights how SQL plays a vital role in business intelligence by enabling trend discovery, performance measurement, and operational improvement across various business functions.

## **OBJECTIVES:**

- To design and implement a relational database schema for BigBasket's product and pricing data.
- To create a normalized data model connecting Products, Categories, Subcategories, Brands, and Pricing & Ratings.
- To establish primary and foreign key relationships ensuring data integrity and consistency.
- To use SQL queries for extracting, filtering, and analyzing complex e-commerce data.
- To evaluate pricing structures, discount patterns, and brand performance using aggregate and analytical functions.
- To apply SQL techniques such as joins, subqueries, window functions, and conditional logic for in-depth data exploration.
- To demonstrate the use of SQL as a core tool for business intelligence and reporting.

## SCOPE:

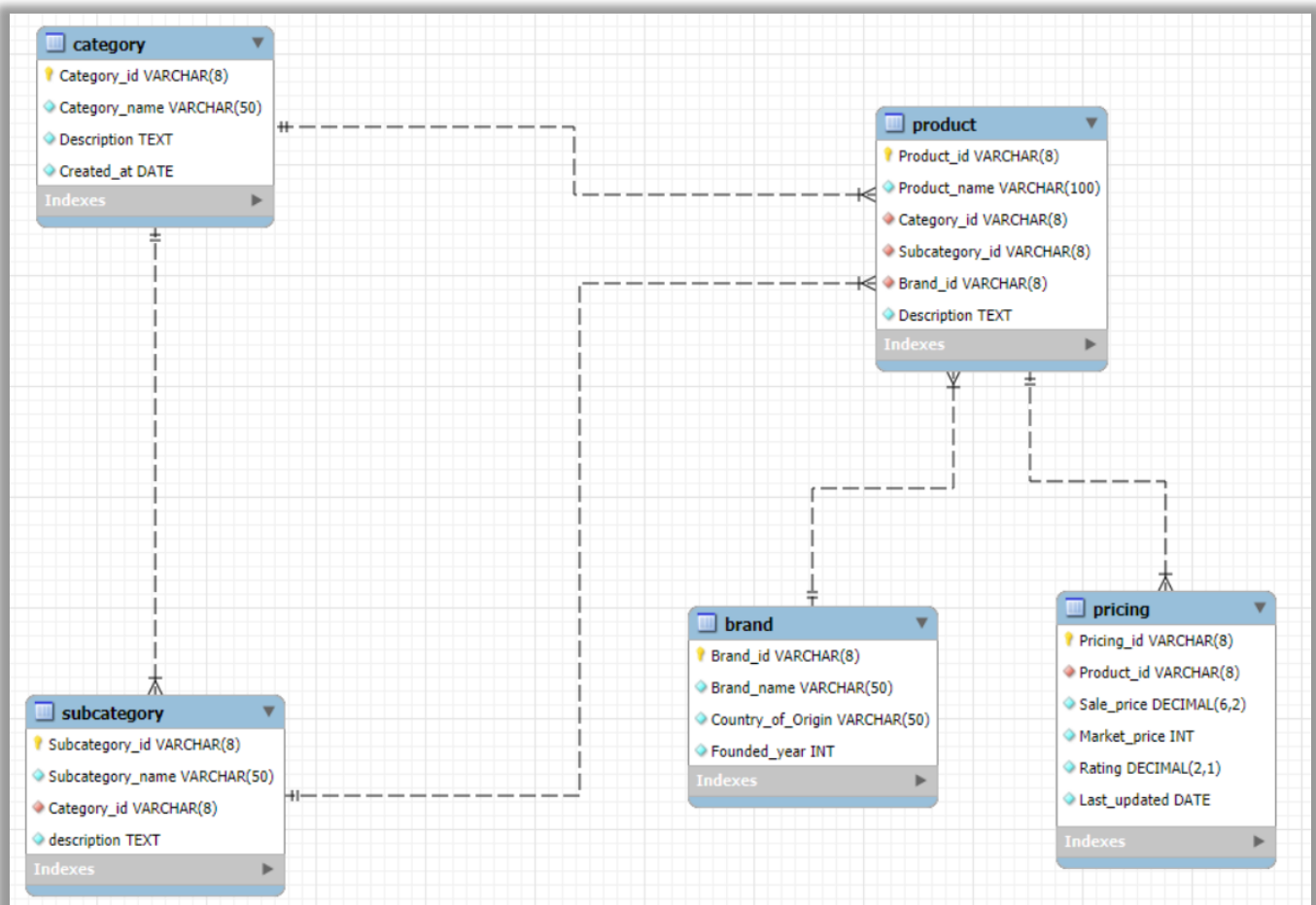
The scope of this project is focused on SQL-based analytics within a structured relational database. It includes the design, creation, and analysis of an e-commerce dataset that captures product details, categories, subcategories, brands, and pricing information.

Key focus areas include:

- Performing data extraction, aggregation, and trend analysis using SQL.
- Analyzing pricing and discount trends, brand and product performance, and customer-oriented insights.
- Showcasing 30 real-world SQL queries involving joins, grouping, ranking, and analytical operations.
- Laying the foundation for future integration with Power BI or Tableau for visualization.

The project does not include front-end visualization or predictive analytics but provides a strong backend analytical framework for future data science applications.

## ER Diagram BigBasket Product & Pricing Data Model



## Table Description:

### (1) Category

Field	Type	Null	Key	Default	Extra
Category_id	varchar(8)	NO	PRI	NULL	
Category_name	varchar(50)	NO		NULL	
Description	text	NO		NULL	
Created_at	date	NO		NULL	

### (2) Subcategory

Field	Type	Null	Key	Default	Extra
Subcategory_id	varchar(8)	NO	PRI	NULL	
Subcategory_name	varchar(50)	NO		NULL	
Category_id	varchar(8)	NO	MUL	NULL	
description	text	NO		NULL	

### (3) Brand

Field	Type	Null	Key	Default	Extra
Brand_id	varchar(8)	NO	PRI	NULL	
Brand_name	varchar(50)	NO		NULL	
Country_of_Origin	varchar(50)	NO		NULL	
Founded_year	int	NO		NULL	

### (4) Product

Field	Type	Null	Key	Default	Extra
Product_id	varchar(8)	NO	PRI	NULL	
Product_name	varchar(100)	NO		NULL	
Category_id	varchar(8)	NO	MUL	NULL	
Subcategory_id	varchar(8)	NO	MUL	NULL	
Brand_id	varchar(8)	NO	MUL	NULL	
Description	text	NO		NULL	

## (5) Pricing

Result Grid						
		Filter Rows:		Export:	Wrap Cell Content:	
	Field	Type	Null	Key	Default	Extra
▶	Pricing_id	varchar(8)	NO	PRI		
	Product_id	varchar(8)	NO	MUL		
	Sale_price	decimal(6,2)	NO			
	Market_price	int	NO			
	Rating	decimal(2,1)	NO			
	Last_updated	date	NO			

## **CREATING DATABASE:**

create database Bigbasket;

use Bigbasket;

## **Table Creation & Insertion Commands:**

### **(1) Create Table Category**

```
CREATE TABLE Category (  
    Category_id VARCHAR(8) PRIMARY KEY,  
    Category_name VARCHAR(50) NOT NULL,  
    Description TEXT NOT NULL,  
    Created_at DATE NOT NULL  
);
```

### **Inserting Values into Category**

INSERT INTO Category

VALUES

('CAT\_0001', 'Beauty & Hygiene', 'This Product contains Garlic Oil that is known to help proper digestion...', '2021-03-22'),

('CAT\_0002', 'Kitchen, Garden & Pets', 'Each product is microwave safe (without lid), refrigerator safe...', '2020-11-08'),

('CAT\_0003', 'Beauty & Hygiene', 'Satinance multani matti is an excellent skin toner and astringent...', '2022-04-20'),

('CAT\_0004', 'Beauty & Hygiene', '70% Alcohol based is gentle of hand leaves skin soft ... ', '2021-11-26'),

('CAT\_0005', 'Cleaning & Household', 'Scotch Brite Anti- Bacterial Scrub Pad thoroughly cleanses dishes...', '2023-10-28'),

('CAT\_0006', 'Gourmet & World Food', 'Enjoy a tin full of delicious butter cookies made with .. ', '2021-06-09'),

('CAT\_0007', 'Beauty & Hygiene', 'This face wash deeply cleanses dirt and impurities...', '2023- 04-26'),

('CAT\_0008', 'Cleaning & Household', 'This formula has been scientifically proven to kill 99.9% of germs...', '2020-10-23'),

('CAT\_0009', 'Cleaning & Household', 'Strategi Just Spray is a very effective 100% Herbal Mosquito...', '2021-10-13'),

('CAT\_0010', 'Gourmet & World Food', 'Graminway Salted Pumpkin Seeds are the perfect snack....', '2023-01-03'),

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**SELECT \* FROM Category**

**OUTPUT:**

Result Grid	Filter Rows:	Edit:	Export/Import:	Wrap Cell Content:	Fetch rows:
Category_id	Category_name	Description	Created_at		
CAT_0001	Beauty & Hygiene	This Product contains Garlic Oil that is known to help proper digestion, maint...	2021-03-22		
CAT_0002	Kitchen, Garden & Pets	Each product is microwave safe (without lid), refrigerator safe, dishwasher ...	2020-11-08		
CAT_0003	Beauty & Hygiene	Satinance multani matti is an excellent skin toner and astringent. reduces oili...	2022-04-20		
CAT_0004	Beauty & Hygiene	70%Alcohol based is gentle of hand leaves skin soft and moist with a good f...	2021-11-26		
CAT_0005	Cleaning & Household	Scotch Brite Anti- Bacterial Scrub Pad thoroughly cleanses dishes and keeps ...	2023-10-28		
CAT_0006	Gourmet & World Food	Enjoy a tin full of delicious butter cookies made with pure Danish recipe. Enj...	2021-06-09		
CAT_0007	Beauty & Hygiene	This face wash deeply cleanses dirt and impurities. Active ingredients help r...	2023-04-26		
CAT_0008	Cleaning & Household	This formula has been scientifically proven to kill 99.9% of germs. It remove...	2020-10-23		
CAT_0009	Cleaning & Household	Strategi Just Spray is a very effective 100% Herbal Mosquito Repellent Roo...	2021-10-13		
CAT_0010	Gourmet & World Food	Graminway Salted Pumpkin Seeds are the perfect snack for your family. The...	2023-01-03		
CAT_0011	Gourmet & World Food	We at Wellness Foods, manufacture dairy and non-dairy products, Fresh Ch...	2020-06-09		
CAT_0012	Beauty & Hygiene	This Ceramic Barrel Brush by Bronson Professional is lightweight and the rub...	2020-08-05		
CAT_0013	Foodgrains, Oil & Masala	Raw Chia seeds, naturally gluten free, lyva raw chia seeds are a whole, veg...	2022-06-26		
CAT_0014	Gourmet & World Food	This beautiful box of Cambridge Tea Party Cleanse has 50g, 25 servings of ...	2021-10-26		
CAT_0015	Kitchen, Garden & Pets	Stop your worries about keeping your food warm during your dinner. Aesth...	2020-10-06		
CAT_0016	Snacks & Branded Foods	Fit & Flex granola is not just crunchy and tasty, it is also incredibly great for ...	2023-04-17		
CAT_0017	Foodgrains, Oil & Masala	Super-nutritious and good for your heart, flaxseed is also a rich source of fi...	2020-12-20		
CAT_0018	Snacks & Branded Foods	Switz Puff Parathas are made with the highest quality ingredients through a ...	2020-01-26		
CAT_0019	Beauty & Hygiene	Reload the dry and chapped lips with Organic Lip Butter Rose. The ideal mixt...	2022-01-09		
CAT_0020	Bakery, Cakes & Dairy	Experience new exciting chocolatey centre filled cookie from Cadbury. Perfe...	2022-06-16		
CAT_0021	Beauty & Hygiene	Smellcome to Magic with Old Spice's New Launch Deodorant range. 0% ...	2022-12-27		



## **(2) Create Table Subcategory**

```
CREATE TABLE Subcategory (  
    Subcategory_id VARCHAR(8) PRIMARY KEY,  
    Subcategory_name VARCHAR(50) NOT NULL,  
    Category_id VARCHAR(8) NOT NULL,  
    description TEXT NOT NULL,  
    FOREIGN KEY (Category_id) REFERENCES Category(Category_id)  
);
```

## **Inserting Values into Subcategory**

**INSERT INTO** Subcategory

**VALUES**

('SUB\_0001', 'Hair Care', 'CAT\_0001', 'This Product contains Garlic Oil that is known to help proper digestion....'),

('SUB\_0002', 'Storage & Accessories', 'CAT\_0002', 'Each product is microwave safe (without lid), refrigerator safe....'),

('SUB\_0003', 'Skin Care', 'CAT\_0003', 'Satinance multani matti is an excellent skin toner and astringent....'),

('SUB\_0004', 'Bath & Hand Wash', 'CAT\_0004', '70% Alcohol based is gentle of hand leaves skin soft....'),

('SUB\_0005', 'Mops, Brushes & Scrubs', 'CAT\_0005', 'Scotch Brite Anti- Bacterial Scrub Pad thoroughly cleanses dishes....'),

('SUB\_0006', 'Chocolates & Biscuits', 'CAT\_0006', 'Enjoy a tin full of delicious butter cookies made with....'),

('SUB\_0007', 'Skin Care', 'CAT\_0007', 'This face wash deeply cleanses dirt and impurities. Active ingredients help....'),

('SUB\_0008', 'All Purpose Cleaners', 'CAT\_0008', 'This formula has been scientifically proven to kill 99.9% of germs.... '),

('SUB\_0009', 'Fresheners & Repellents', 'CAT\_0009', 'Strategi Just Spray is a very effective 100% Herbal Mosquito....'),

('SUB\_0010', 'Snacks, Dry Fruits, Nuts', 'CAT\_0010', 'Graminway Salted Pumpkin Seeds are the perfect snack....'),

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**SELECT \* FROM Subcategory;**

**OUTPUT:**

Result Grid	Filter Rows:	Edit:	Export/Import:	Wrap Cell Content:	Fetch rows:
Subcategory_id	Subcategory_name	Category_id	description		
SUB_0001	Hair Care	CAT_0001	This Product contains Garlic Oil that is known to help proper digestion, maintain proper cholesterol levels, ...		
SUB_0002	Storage & Accessories	CAT_0002	Each product is microwave safe (without lid), refrigerator safe, dishwasher safe and can also be used for ...		
SUB_0003	Skin Care	CAT_0003	Satinance multani matti is an excellent skin toner and astringent. reduces oiliness and while nourishing th...		
SUB_0004	Bath & Hand Wash	CAT_0004	70%Alcohol based is gentle of hand leaves skin soft and moist with a good fragrance. It is really safe for ...		
SUB_0005	Mops, Brushes & Scrubs	CAT_0005	Scotch Brite Anti- Bacterial Scrub Pad thoroughly cleanses dishes and keeps the kitchen utensils squeaky ...		
SUB_0006	Chocolates & Biscuits	CAT_0006	Enjoy a tin full of delicious butter cookies made with pure Danish recipe. Enjoy them as an energy snack. ...		
SUB_0007	Skin Care	CAT_0007	This face wash deeply cleanses dirt and impurities. Active ingredients help remove excess oil and other pi...		
SUB_0008	All Purpose Cleaners	CAT_0008	This formula has been scientifically proven to kill 99.9% of germs. It removes mold & mildew powerfully, l...		
SUB_0009	Fresheners & Repellents	CAT_0009	Strategi Just Spray is a very effective 100% Herbal Mosquito Repellent Room Spray completed from a dis...		
SUB_0010	Snacks, Dry Fruits, Nuts	CAT_0010	Graminway Salted Pumpkin Seeds are the perfect snack for your family. These are ancient food, lost with...		
SUB_0011	Dairy & Cheese	CAT_0011	We at Wellness Foods, manufacture dairy and non-dairy products, Fresh Cheese, Tofu, and Butter. Our ...		
SUB_0012	Hair Care	CAT_0012	This Ceramic Barrel Brush by Bronson Professional is lightweight and the rubber grip ensures easy handlin...		
SUB_0013	Dry Fruits	CAT_0013	Raw Chia seeds, naturally gluten free, lyva raw chia seeds are a whole, vegetarian food, naturally rich in...		
SUB_0014	Drinks & Beverages	CAT_0014	This beautiful box of Cambridge Tea Party Cleanse has 50g, 25 servings of Whole leaf Green Tea. This te...		
SUB_0015	Flask & Casserole	CAT_0015	Stop your worries about keeping your food warm during your dinner. Aesthetically designed, Cello's vibra...		
SUB_0016	Breakfast Cereals	CAT_0016	Fit & Flex granola is not just crunchy and tasty, it is also incredibly great for you. It is the perfect start to...		
SUB_0017	Dry Fruits	CAT_0017	Super-nutritious and good for your heart, flaxseed is also a rich source of fibre and Omega-3 fatty acids....		
SUB_0018	Frozen Veggies & Snacks	CAT_0018	Switz Puff Parathas are made with the highest quality ingredients through a specialized layering process t...		
SUB_0019	Skin Care	CAT_0019	Reload the dry and chapped lips with Organic Lip Butter Rose. The ideal mixture of organic butter and wa...		
SUB_0020	Cookies, Rusk & Khari	CAT_0020	Experience new exciting chocolatey centre filled cookie from Cadbury. Perfect as an indulgent "me time" t...		
SUB_0021	Fragrances & Deos	CAT_0021	Smellcome to Magic with Old Spice's New Launch Deodorant range. 0% Gas and for long-lasting 24-hour f...		

### **(3) Create Table Brand**

```
CREATE TABLE Brand (  
    Brand_id VARCHAR(8) PRIMARY KEY,  
    Brand_name VARCHAR(50) NOT NULL,  
    Country_of_Origin VARCHAR(50) NOT NULL,  
    Founded_year INT NOT NULL  
);
```

### **Inserting Values into Brand**

**INSERT INTO Brand**

**VALUES**

```
('BRD_0001', 'Sri Sri Ayurveda ', 'India', '1981'),  
( 'BRD_0002', 'Mastercook', 'India', '1966'),  
( 'BRD_0003', 'Satinance', 'India', '1994'),  
( 'BRD_0004', 'Bionova', 'India', '1985'),  
( 'BRD_0005', 'Scotch brite', 'USA', '1982'),  
( 'BRD_0006', 'Sapphire', 'India', '2010'),  
( 'BRD_0007', 'Oxy', 'USA', '1992'),  
( 'BRD_0008', 'Clorox', 'USA', '1959'),  
( 'BRD_0009', 'Herbal Strategi', 'India', '1962'),  
( 'BRD_0010', 'Graminway', 'India', '2006'),  
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```

**SELECT \* FROM Brand;**

**OUTPUT:**

Result Grid		Filter Rows:	Edit:	Export/Import:
	Brand_id	Brand_name	Country_of_Origin	Founded_year
▶	BRD_0001	Sri Sri Ayurveda	India	1981
	BRD_0002	Mastercook	India	1966
	BRD_0003	Satinance	India	1994
	BRD_0004	Bionova	India	1985
	BRD_0005	Scotch brite	USA	1982
	BRD_0006	Sapphire	India	2010
	BRD_0007	Oxy	USA	1992
	BRD_0008	Clorox	USA	1959
	BRD_0009	Herbal Strategi	India	1962
	BRD_0010	Graminway	India	2006
	BRD_0011	Murginns	India	1955
	BRD_0012	Bronson Professional	USA	1983
	BRD_0013	NaturoBell	India	2011
	BRD_0014	Cambridge Tea Party	UK	1942
	BRD_0015	Cello	India	1947
	BRD_0016	Fit & Flex	India	1940
	BRD_0017	Safe Harvest	India	1996
	BRD_0018	Switz	Switzerland	2001
	BRD_0019	Organic Harvest	India	1969
	BRD_0020	Cadbury	India	1949
	BRD_0021	Old Spice	India	1993

#### **(4) Create Table Product**

```
CREATE TABLE Product (  
    Product_id VARCHAR(8) PRIMARY KEY,  
    Product_name VARCHAR(100) NOT NULL,  
    Category_id VARCHAR(8) NOT NULL,  
    Subcategory_id VARCHAR(8) NOT NULL ,  
    Brand_id VARCHAR(8) NOT NULL,  
    Description TEXT NOT NULL,  
    FOREIGN KEY (Category_id) REFERENCES Category(Category_id),  
    FOREIGN KEY (Subcategory_id) REFERENCES Subcategory(Subcategory_id),  
    FOREIGN KEY (Brand_id) REFERENCES Brand(Brand_id)  
);
```

#### **Inserting Values into Product**

**INSERT INTO Brand**

**VALUES**

```
('PRD_0001', 'Garlic Oil - Vegetarian Capsule 500 mg', 'CAT_0001', 'SUB_0001', 'BRD_0001', 'This  
Product contains Garlic Oil that is known to help proper digestion...'),  
( 'PRD_0002', 'Water Bottle - Orange', 'CAT_0002', 'SUB_0002', 'BRD_0002', 'Each product is  
microwave safe (without lid), refrigerator safe...'),  
( 'PRD_0003', 'Multani Mati', 'CAT_0003', 'SUB_0003', 'BRD_0003', 'Satinance multani matti is an  
excellent skin toner and astringent...'),  
( 'PRD_0004', 'Hand Sanitizer - 70% Alcohol Base', 'CAT_0004', 'SUB_0004', 'BRD_0004',  
'70% Alcohol based is gentle of hand leaves skin soft...'),  
( 'PRD_0005', 'Scrub Pad - Anti- Bacterial, Regular', 'CAT_0005', 'SUB_0005', 'BRD_0005',  
'Scotch Brite Anti- Bacterial Scrub Pad thoroughly cleanses dishes...'),  
( 'PRD_0006', 'Butter Cookies Gold Collection', 'CAT_0006', 'SUB_0006', 'BRD_0006', 'Enjoy a tin  
full of delicious butter cookies made with...'),  
( 'PRD_0007', 'Face Wash - Oil Control, Active', 'CAT_0007', 'SUB_0007', 'BRD_0007', 'This face  
wash deeply cleanses dirt and impurities...'),  
( 'PRD_0008', 'Mold & Mildew Remover with Bleach', 'CAT_0008', 'SUB_0008', 'BRD_0008', 'This  
formula has been scientifically proven to kill 99.9% of germs...'),  
( 'PRD_0009', 'Just Spray - Mosquito Repellent Room Spray', 'CAT_0009', 'SUB_0009', 'BRD_0009',  
'Strategi Just Spray is a very effective 100% Herbal Mosquito...'),
```

('PRD\_0010', 'Salted Pumpkin', 'CAT\_0010', 'SUB\_0010', 'BRD\_0010', 'Graminway Salted Pumpkin Seeds are the perfect snack...'),

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**SELECT \* FROM Product;**

## **OUTPUT:**

Result Grid	Filter Rows:	Edit:	Export/Import:	Wrap Cell Content:	Fetch rows:
Product_id	Product_name	Category_id	Subcategory_id	Brand_id	Description
PRD_0001	Garlic Oil - Vegetarian Capsule 500 mg	CAT_0001	SUB_0001	BRD_0001	This Product contains Garlic Oil that is known to help proper digestio...
PRD_0002	Water Bottle - Orange	CAT_0002	SUB_0002	BRD_0002	Each product is microwave safe (without lid), refrigerator safe, dish...
PRD_0003	Multani Mati	CAT_0003	SUB_0003	BRD_0003	Satinance multani matti is an excellent skin toner and astringent. red...
PRD_0004	Hand Sanitizer - 70% Alcohol Base	CAT_0004	SUB_0004	BRD_0004	70%Alcohol based is gentle of hand leaves skin soft and moist with ...
PRD_0005	Scrub Pad - Anti-Bacterial, Regular	CAT_0005	SUB_0005	BRD_0005	Scotch Brite Anti-Bacterial Scrub Pad thoroughly cleanses dishes an...
PRD_0006	Butter Cookies Gold Collection	CAT_0006	SUB_0006	BRD_0006	Enjoy a tin full of delicious butter cookies made with pure Danish red...
PRD_0007	Face Wash - Oil Control, Active	CAT_0007	SUB_0007	BRD_0007	This face wash deeply cleanses dirt and impurities. Active ingredient...
PRD_0008	Mold & Mildew Remover with Bleach	CAT_0008	SUB_0008	BRD_0008	This formula has been scientifically proven to kill 99.9% of germs. It ...
PRD_0009	Just Spray - Mosquito Repellent Room Spray	CAT_0009	SUB_0009	BRD_0009	Strategi Just Spray is a very effective 100% Herbal Mosquito Repell...
PRD_0010	Salted Pumpkin	CAT_0010	SUB_0010	BRD_0010	Graminway Salted Pumpkin Seeds are the perfect snack for your fa...
PRD_0011	Organic Tofu - Soy Paneer	CAT_0011	SUB_0011	BRD_0011	We at Wellness Foods, manufacture dairy and non-dairy products, ...
PRD_0012	Ceramic Barrel Brush - Colour May Vary	CAT_0012	SUB_0012	BRD_0012	This Ceramic Barrel Brush by Bronson Professional is lightweight and ...
PRD_0013	Chia Seeds	CAT_0013	SUB_0013	BRD_0013	Raw Chia seeds, naturally gluten free, lyva raw chia seeds are a wh...
PRD_0014	Cleanse Green Tea - Whole Leaf Loose Tea	CAT_0014	SUB_0014	BRD_0014	This beautiful box of Cambridge Tea Party Cleanse has 50g, 25 serv...
PRD_0015	Insulated Hot Fresh Casserole For Roti/Chapati - White	CAT_0015	SUB_0015	BRD_0015	Stop your worries about keeping your food warm during your dinner...
PRD_0016	Granola - Happy Berries	CAT_0016	SUB_0016	BRD_0016	Fit & Flex granola is not just crunchy and tasty, it is also incredibly g...
PRD_0017	Flaxseed - Pesticide Free	CAT_0017	SUB_0017	BRD_0017	Super-nutritious and good for your heart, flaxseed is also a rich sou...
PRD_0018	Paratha Puff	CAT_0018	SUB_0018	BRD_0018	Switz Puff Parathas are made with the highest quality ingredients th...
PRD_0019	Lip Butter - Rose	CAT_0019	SUB_0019	BRD_0019	Reload the dry and chapped lips with Organic Lip Butter Rose. The i...
PRD_0020	Chocobakes Choc Filled Cookies	CAT_0020	SUB_0020	BRD_0020	Experience new exciting chocolatey centre filled cookie from Cadbur...
PRD_0021	Amber - Deodorant Body Spray	CAT_0021	SUB_0021	BRD_0021	Smellcome to Magic with Old Spice's New Launch Deodorant range. 0...

### **(5) Create Table Pricing**

```
CREATE TABLE Pricing (  
Pricing_id VARCHAR(8) PRIMARY KEY,  
Product_id VARCHAR(8) NOT NULL,  
Sale_price DECIMAL(6,2) NOT NULL,  
Market_price INT NOT NULL,  
Rating DECIMAL(2,1) NOT NULL,  
Last_updated DATE NOT NULL,  
FOREIGN KEY (Product_id) REFERENCES Product(Product_id)  
);
```

### **Inserting Values into Pricing**

```
INSERT INTO Pricing
```

```
VALUES
```

```
('PRC_0001', 'PRD_0001', '220', '220', '4.1', '2025-06-28'),  
( 'PRC_0002', 'PRD_0002', '180', '180', '2.3', '2025-01-23'),  
( 'PRC_0003', 'PRD_0003', '58', '58', '3.6', '2025-05-30'),  
( 'PRC_0004', 'PRD_0004', '250', '250', '4', '2025-07-05'),  
( 'PRC_0005', 'PRD_0005', '20', '20', '4.3', '2025-08-22'),  
( 'PRC_0006', 'PRD_0006', '600', '600', '2.2', '2025-04-13'),  
( 'PRC_0007', 'PRD_0007', '110', '110', '5', '2025-05-08'),  
( 'PRC_0008', 'PRD_0008', '350', '350', '3.8', '2025-06-15'),  
( 'PRC_0009', 'PRD_0009', '200', '200', '4.2', '2025-04-25'),  
( 'PRC_0010', 'PRD_0010', '180', '180', '4.9', '2025-04-27'),  
  
.  
  
.  
  
.
```

```
SELECT * FROM Pricing;
```

## OUTPUT:

Result Grid						
Filter Rows:						
Edit:						
Export/Import:						
	Pricing_id	Product_id	Sale_price	Market_price	Rating	Last_updated
▶	PRC_0001	PRD_0001	220.00	220	4.1	2025-06-28
	PRC_0002	PRD_0002	180.00	180	2.3	2025-01-23
	PRC_0003	PRD_0003	58.00	58	3.6	2025-05-30
	PRC_0004	PRD_0004	250.00	250	4.0	2025-07-05
	PRC_0005	PRD_0005	20.00	20	4.3	2025-08-22
	PRC_0006	PRD_0006	600.00	600	2.2	2025-04-13
	PRC_0007	PRD_0007	110.00	110	5.0	2025-05-08
	PRC_0008	PRD_0008	350.00	350	3.8	2025-06-15
	PRC_0009	PRD_0009	200.00	200	4.2	2025-04-25
	PRC_0010	PRD_0010	180.00	180	4.9	2025-04-27
	PRC_0011	PRD_0011	85.14	90	3.9	2025-04-18
	PRC_0012	PRD_0012	525.00	700	4.2	2025-03-07
	PRC_0013	PRD_0013	120.00	120	3.9	2025-01-13
	PRC_0014	PRD_0014	75.00	75	3.9	2025-05-18
	PRC_0015	PRD_0015	659.00	895	3.3	2025-01-04
	PRC_0016	PRD_0016	245.00	265	3.5	2025-02-22
	PRC_0017	PRD_0017	53.90	55	4.0	2025-08-20
	PRC_0018	PRD_0018	90.00	110	4.3	2025-03-21
	PRC_0019	PRD_0019	169.15	199	1.5	2025-01-10
	PRC_0020	PRD_0020	102.00	120	4.2	2025-05-23
	PRC_0021	PRD_0021	211.65	249	3.4	2025-08-09



## **Part 1: Business Insights & Analytics**

**Q1. List all categories with their total number of products.**

```
SELECT
    C.Category_name,
    COUNT(P.Product_id) AS total_products
FROM Category AS C
LEFT JOIN Product AS P
    ON C.Category_id = P.Category_id
GROUP BY C.Category_name
ORDER BY total_products DESC;
```




**Output:**

Result Grid     Filter Rows: <input type="text"/>		
	Category_name	total_products
▶	Beauty & Hygiene	562
	Kitchen, Garden & Pets	454
	Gourmet & World Food	216
	Snacks & Branded Foods	213
	Cleaning & Household	209
	Foodgrains, Oil & Masala	184
	Baby Care	74
	Bakery, Cakes & Dairy	48
	Beverages	40

**Q2. Display the top 5 highest-priced products.**

```
SELECT
    P.Product_name,
    Pr.Sale_price
FROM Product AS P
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
ORDER BY Pr.Sale_price DESC
LIMIT 5;
```

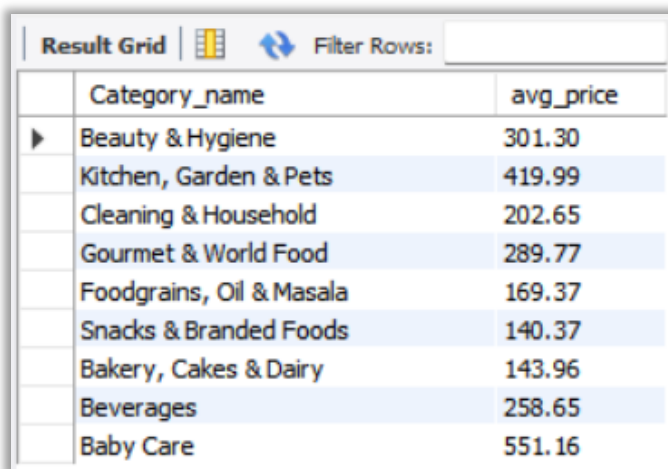
**Output:**

Result Grid     Filter Rows: <input type="text"/>   Export:    Wrap Cell		
	Product_name	Sale_price
▶	Olive Pomace Oil	4399.00
	Focus - Super Dog Food, For Adults	3612.50
	Svachh Stainless Steel Clip On Pressure Cooker (20229)	3570.00
	Olive Oil - Pomace	3330.00
	Steam Steriliser With Tongs	3290.00

**Q3. Show average sale price per category.**

```
SELECT
    C.Category_name,
    ROUND(AVG(Pr.Sale_price), 2) AS avg_price
FROM Category AS C
JOIN Product AS P
    ON C.Category_id = P.Category_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY C.Category_name;
```

**Output:**



	Category_name	avg_price
▶	Beauty & Hygiene	301.30
	Kitchen, Garden & Pets	419.99
	Cleaning & Household	202.65
	Gourmet & World Food	289.77
	Foodgrains, Oil & Masala	169.37
	Snacks & Branded Foods	140.37
	Bakery, Cakes & Dairy	143.96
	Beverages	258.65
	Baby Care	551.16

**Q4. Find brands founded before the year 2000.**

```
SELECT  
    Brand_name,  
    Founded_year  
FROM Brand  
WHERE Founded_year < 2000;
```

**Output:**

Result Grid		Filter Rows:
	Brand_name	Founded_year
▶	Sri Sri Ayurveda	1981
	Mastercook	1966
	Satinance	1994
	Bionova	1985
	Scotch brite	1982
	Oxy	1992
	Clorox	1959
	Herbal Strategi	1962
	Murginns	1955
	Bronson Professional	1983
	Cambridge Tea Party	1942
	Cello	1947
	Fit & Flex	1940
	Safe Harvest	1996
	Organic Harvest	1969
	Cadbury	1949
	Old Spice	1993
	Octavius	1950
	Steelo	1999
	bb Royal	1940
	Engage	1999

**Q5. List the top 5 products with the highest rating-to-price ratio.**

```
SELECT
    Pr.Product_id,
    P.Product_name,
    Pr.Rating,
    Pr.Sale_price,
    ROUND((Pr.Rating / Pr.Sale_price), 4) AS rating_price_ratio
FROM Pricing AS Pr
JOIN Product AS P
    ON Pr.Product_id = P.Product_id
ORDER BY rating_price_ratio DESC
LIMIT 5;
```



**Output:**

Product_id	Product_name	Rating	Sale_price	rating_price_ratio
PRD_1043	Hapima Crispy Fry Mix	4.4	20.00	0.2200
PRD_0005	Scrub Pad - Anti-Bacterial, Regular	4.3	20.00	0.2150
PRD_0522	Agarbathi - Natural Incense Sticks (Jasmine)	4.3	20.00	0.2150
PRD_0192	Kool - Badam	4.2	20.00	0.2100
PRD_0195	Millet Based Nutrition Bar - Classic	4.0	20.00	0.2000

**Q6. Find the top 5 brands with the highest average product sale price.**

```
SELECT
    B.Brand_name,
    ROUND(AVG(Pr.Sale_price), 2) AS avg_sale_price
FROM Brand AS B
JOIN Product AS P
    ON B.Brand_id = P.Brand_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY B.Brand_name
ORDER BY avg_sale_price DESC
LIMIT 5;
```



**Output:**

Result Grid   Filter Rows: <input type="text"/>		
	Brand_name	avg_sale_price
▶	Abbies	4399.00
	Pietro Coricelli	2800.00
	Jacques Bogart	2415.00
	United	2389.00
	David Beckham	2320.00

**Q7. Identify the top 3 brands with the highest average discount percentage.**

```
SELECT  
    B.Brand_name,  
    ROUND(AVG((Pr.Market_price - Pr.Sale_price) / Pr.Market_price * 100), 2) AS  
    avg_discount  
FROM Brand AS B  
JOIN Product AS P  
    ON B.Brand_id = P.Brand_id  
JOIN Pricing AS Pr  
    ON P.Product_id = Pr.Product_id  
GROUP BY B.Brand_name  
ORDER BY avg_discount DESC  
LIMIT 3;
```

**Output:**

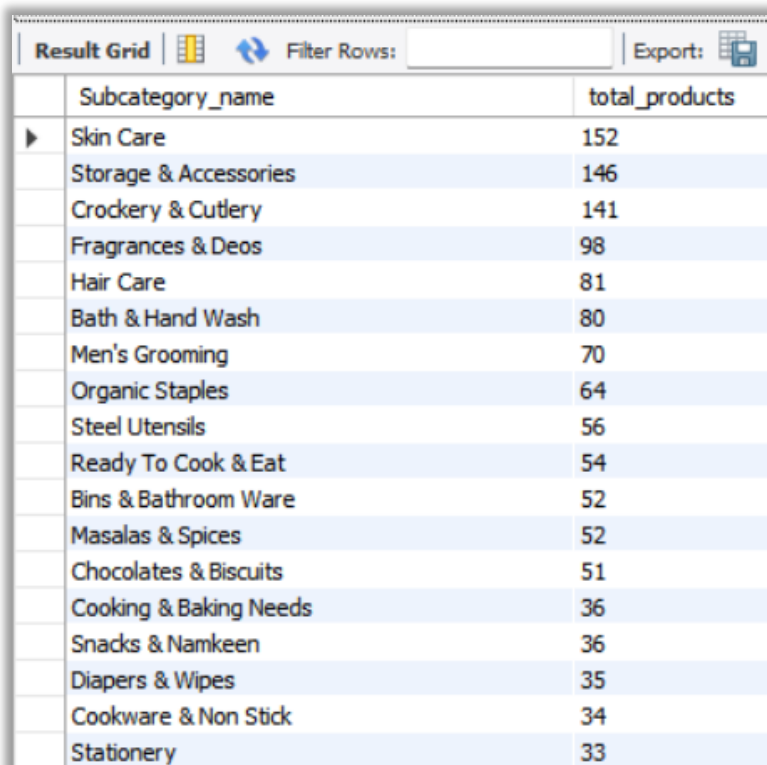
Result Grid   Filter Rows: <input type="text"/>		
	Brand_name	avg_discount
▶	Jensons	77.99
	Oleev	63.95
	Classic Essentials	63.55



**Q8. Display subcategories along with the total number of products in each.**

```
SELECT
    S.Subcategory_name,
    COUNT(P.Product_id) AS total_products
FROM Subcategory AS S
JOIN Product AS P
    ON S.Subcategory_id = P.Subcategory_id
GROUP BY S.Subcategory_name
ORDER BY total_products DESC;
```

**Output:**



The screenshot shows a database query result grid with two columns: 'Subcategory\_name' and 'total\_products'. The results are ordered by 'total\_products' in descending order. The subcategories and their corresponding product counts are as follows:

Subcategory_name	total_products
Skin Care	152
Storage & Accessories	146
Crockery & Cutlery	141
Fragrances & Deos	98
Hair Care	81
Bath & Hand Wash	80
Men's Grooming	70
Organic Staples	64
Steel Utensils	56
Ready To Cook & Eat	54
Bins & Bathroom Ware	52
Masalas & Spices	52
Chocolates & Biscuits	51
Cooking & Baking Needs	36
Snacks & Namkeen	36
Diapers & Wipes	35
Cookware & Non Stick	34
Stationery	33

**Q9. Display each brand with total number of products and average sale price.**

```
SELECT  
    B.Brand_name,  
    COUNT(P.Product_id) AS total_products,  
    ROUND(AVG(Pr.Sale_price), 2) AS avg_price  
FROM Brand AS B  
JOIN Product AS P  
    ON B.Brand_id = P.Brand_id  
JOIN Pricing AS Pr  
    ON P.Product_id = Pr.Product_id  
GROUP BY B.Brand_name  
ORDER BY total_products DESC;
```

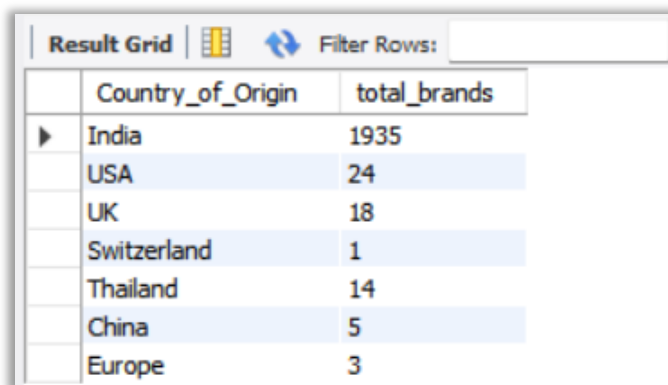
**Output:**

Result Grid		Filter Rows:	Exports:
	Brand_name	total_products	avg_price
►	LaOpala	29	756.66
	Claycraft	29	359.55
	bb Royal	27	130.15
	BB Home	27	258.56
	Cello	23	374.57
	Princeware	21	170.71
	Nike	20	224.74
	Mastercook	19	169.21
	Iveo	17	301.71
	Himalaya	15	233.07
	Asian	15	278.07
	Layerr	15	161.95
	Ratan	15	189.27
	Phalada Pure & Sure	15	151.08
	Steel Lock	13	365.77
	Loreal Paris	13	492.74
	Ask Foods	13	68.08
	Fogg	13	230.19
	Yera	12	198.17
	Anjali	12	194.33
	Prestige	12	1607.50

**Q10. Show total number of brands by country.**

```
SELECT  
    Country_of_Origin,  
    COUNT(*) AS total_brands  
FROM Brand  
GROUP BY Country_of_Origin;
```

**Output:**



The screenshot shows a 'Result Grid' window with a table containing two columns: 'Country\_of\_Origin' and 'total\_brands'. The table lists the following data:

Country_of_Origin	total_brands
India	1935
USA	24
UK	18
Switzerland	1
Thailand	14
China	5
Europe	3

## Part 2 : Pricing & Profit Analytics

**Q11. Display each product's discount percentage and categorize discount level.**

```
SELECT P.Product_name,
       ROUND(((Pr.Market_price - Pr.Sale_price) / Pr.Market_price) * 100, 2) AS
discount_percent,
       CASE
         WHEN ((Pr.Market_price - Pr.Sale_price) / Pr.Market_price) * 100 >= 70 THEN 'High
Discount'
         WHEN ((Pr.Market_price - Pr.Sale_price) / Pr.Market_price) * 100 >= 30 THEN
'Medium Discount'
         ELSE 'Low Discount'
       END AS discount_level
FROM Product AS P
JOIN Pricing AS Pr
  ON P.Product_id = Pr.Product_id
ORDER BY discount_percent DESC;
```

### Output:

Product_name	discount_percent	discount_level
Steel Belly Shape Storage Dabba/ Container Set With PP Lid - Sil...	77.99	High Discount
Nanda Deep Brass Diya Oil Lamp Puja S7 - Golden	70.23	High Discount
Chopping-Cutting Board - Bamboo Wood, Steel Handle, BH 044	67.29	Medium Discount
Pomace Olive Oil - For All Types Of Cooking	65.52	Medium Discount
Copper Water Bottle - Designer	64.79	Medium Discount
Storage/Lunch Steel Container with PP Lid - Red	63.55	Medium Discount
2 Fold Umbrella - Auto-Open & Manual Close, Mehndi	62.75	Medium Discount
Pomace Olive Oil - For All Types Of Cooking	62.39	Medium Discount
Storewell Airtight Plastic Container - Transparent, With Purple Lid	62.12	Medium Discount
2 Fold Umbrella - Auto-Open & Manual Close, Dark Violet	61.42	Medium Discount
2 Fold Umbrella - Auto-Open & Manual Close, Medium Violet	61.42	Medium Discount
Disposable Bamboo Wood Skewers/Pickers - For Use With Barbe...	60.40	Medium Discount
Plastic Cloth Hangers - Blue	60.20	Medium Discount
Plastic Cloth Hangers - Brown, Elegance	60.15	Medium Discount

**Q12. List the top 5 most profitable products.**

```
SELECT
    P.Product_name,
    (Pr.Market_price - Pr.Sale_price) AS profit
FROM Product AS P
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
ORDER BY profit DESC
LIMIT 5;
```

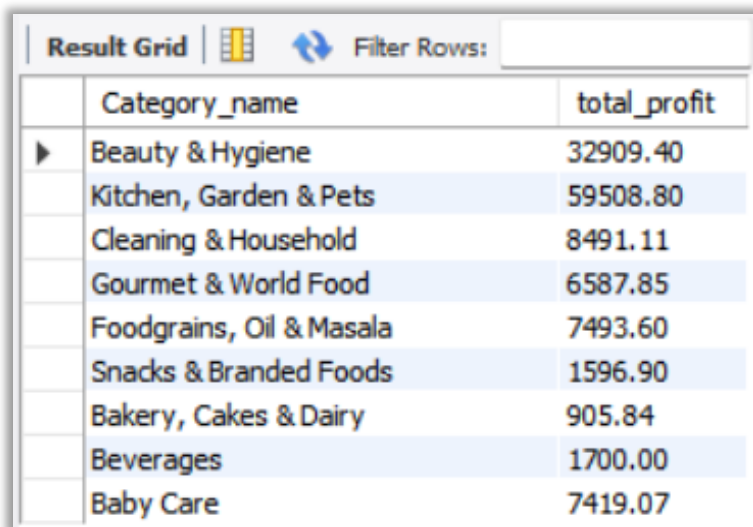
**Output:**

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	Product_name	profit			
▶	Pomace Olive Oil - For All Types Of Cooking	2495.00			
	Olive OilÂ - Pure	2395.92			
	For Man Eau De Toilette	1035.00			
	Opalware Classique 2 Dinner Set - Mystrio Black	1016.00			
	Opalware Classique 2 Dinner Set - Royal Irish	1016.00			

**Q13. Display total profit per category.**

```
SELECT
    C.Category_name,
    SUM(Pr.Market_price - Pr.Sale_price) AS total_profit
FROM Category AS C
JOIN Product AS P
    ON C.Category_id = P.Category_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY C.Category_name;
```

**Output:**



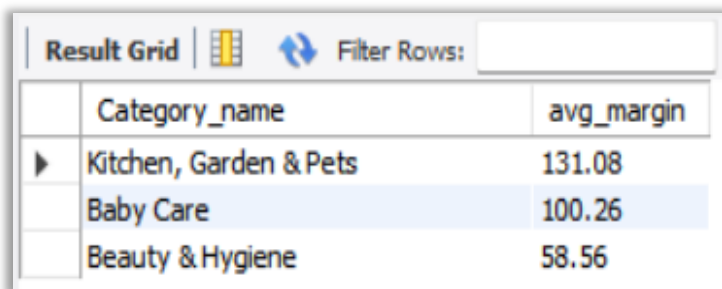
The screenshot shows a database query result grid with the following data:

	Category_name	total_profit
▶	Beauty & Hygiene	32909.40
	Kitchen, Garden & Pets	59508.80
	Cleaning & Household	8491.11
	Gourmet & World Food	6587.85
	Foodgrains, Oil & Masala	7493.60
	Snacks & Branded Foods	1596.90
	Bakery, Cakes & Dairy	905.84
	Beverages	1700.00
	Baby Care	7419.07

**Q14. Find top 3 categories with the highest profit margin.**

```
SELECT
    C.Category_name,
    ROUND(AVG(Pr.Market_price - Pr.Sale_price), 2) AS avg_margin
FROM Category AS C
JOIN Product AS P
    ON C.Category_id = P.Category_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY C.Category_name
ORDER BY avg_margin DESC
LIMIT 3;
```

**Output:**



The screenshot shows a 'Result Grid' window with a table containing three rows of data. The columns are 'Category\_name' and 'avg\_margin'. The rows are 'Kitchen, Garden & Pets' with a value of 131.08, 'Baby Care' with 100.26, and 'Beauty & Hygiene' with 58.56. The 'Baby Care' row is highlighted in blue. Above the table, there are icons for a grid, a refresh button, and a 'Filter Rows:' input field.

	Category_name	avg_margin
▶	Kitchen, Garden & Pets	131.08
	Baby Care	100.26
	Beauty & Hygiene	58.56



**Q15. Find products priced above overall average.**

```
SELECT
    P.Product_name,
    Pr.Sale_price
FROM Product AS P
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
WHERE Pr.Sale_price > (SELECT AVG(Sale_price) FROM Pricing);
```

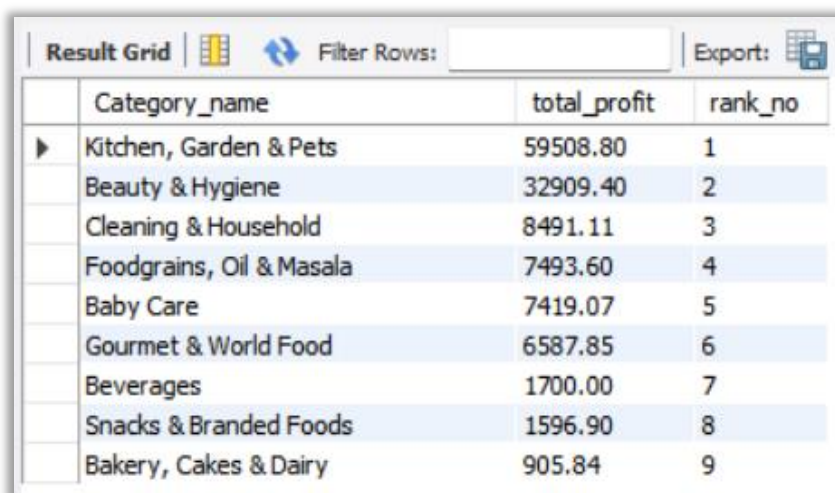
**Output:**

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	Product_name	Sale_price			
▶	Butter Cookies Gold Collection	600.00			
	Mold & Mildew Remover with Bleach	350.00			
	Ceramic Barrel Brush - Colour May Vary	525.00			
	Insulated Hot Fresh Casserole For Roti/Chapati - White	659.00			
	Pet Solitaire Container Set - Silver	499.00			
	Eau De Toilette - Homme Green	427.50			
	Lemon & Tea Tree Oil Soap	360.00			
	After Shave Splash - Arctic Ice	459.62			
	Peach Syrup	850.00			
	Dog Supplement - Absolute Skin + Coat Tablet	348.60			
	Dog Supplement - Absolute Calcium Tablet	339.15			
	Battery Power Kids Toothbrush - Barbie	374.25			
	Acne Pimple Kit For Acne & Pimple Removal	500.00			
	Hard Anodised Eze-Pour Saucepan With Lid - L88	864.50			
	Wonder Diaper Pants - Xtra Large, 12-17 Kg	1266.38			
	Baby Cereal - Ragi Almond & Banana, 6-8 Months, No Preservatives, No Artificial Colours	349.00			
	Stainless Steel Kadai - Induction Bottom With Glass Lid, 26 cm	1099.00			
	Glass Water Bottle - Aquaria Organic Purple	369.00			
	Juice/Water Glass - Long Drink Nord	639.00			

**Q16. Rank categories by total profit using a window function.**

```
SELECT
    C.Category_name,
    SUM(Pr.Market_price - Pr.Sale_price) AS total_profit,
    RANK() OVER (ORDER BY SUM(Pr.Market_price - Pr.Sale_price) DESC) AS rank_no
FROM Category AS C
JOIN Product AS P
    ON C.Category_id = P.Category_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY C.Category_name;
```

**Output:**



The screenshot shows a 'Result Grid' window with a table of query results. The table has four columns: 'Category\_name', 'total\_profit', and 'rank\_no'. There are 9 rows of data, each representing a category and its corresponding total profit and rank. The categories are ranked from highest to lowest total profit.

	Category_name	total_profit	rank_no
▶	Kitchen, Garden & Pets	59508.80	1
	Beauty & Hygiene	32909.40	2
	Cleaning & Household	8491.11	3
	Foodgrains, Oil & Masala	7493.60	4
	Baby Care	7419.07	5
	Gourmet & World Food	6587.85	6
	Beverages	1700.00	7
	Snacks & Branded Foods	1596.90	8
	Bakery, Cakes & Dairy	905.84	9

**Q17. Find products whose sale price  $\geq$  category average.**

```

SELECT
    C.Category_name,
    P.Product_name,
    Pr.Sale_price
FROM Product AS P
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
JOIN Category AS C
    ON P.Category_id = C.Category_id
WHERE Pr.Sale_price >= (
    SELECT AVG(Pr2.Sale_price)
    FROM Pricing AS Pr2
    JOIN Product AS P2 ON Pr2.Product_id = P2.Product_id
    WHERE P2.Category_id = P.Category_id
);

```

**Output:**

Result Grid       Filter Rows:   Export:    Wrap Cell Content:    Fetch rows:			
	Category_name	Product_name	Sale_price
▶	Beauty & Hygiene	Garlic Oil - Vegetarian Capsule 500 mg	220.00
	Kitchen, Garden & Pets	Water Bottle - Orange	180.00
	Beauty & Hygiene	Multani Mati	58.00
	Beauty & Hygiene	Hand Sanitizer - 70% Alcohol Base	250.00
	Cleaning & Household	Scrub Pad - Anti- Bacterial, Regular	20.00
	Gourmet & World Food	Butter Cookies Gold Collection	600.00
	Beauty & Hygiene	Face Wash - Oil Control, Active	110.00
	Cleaning & Household	Mold & Mildew Remover with Bleach	350.00
	Cleaning & Household	Just Spray - Mosquito Repellent Room Spray	200.00
	Gourmet & World Food	Salted Pumpkin	180.00
	Gourmet & World Food	Organic Tofu - Soy Paneer	85.14
	Beauty & Hygiene	Ceramic Barrel Brush - Colour May Vary	525.00
	Foodgrains, Oil & Masala	Chia Seeds	120.00
	Gourmet & World Food	Cleanse Green Tea - Whole Leaf Loose Tea	75.00
	Kitchen, Garden & Pets	Insulated Hot Fresh Casserole For Roti/Chapati - White	659.00

**Q18. Calculate percentage difference between market and sale price.**

SELECT

P.Product\_name,

ROUND(((Pr.Market\_price - Pr.Sale\_price) / Pr.Market\_price) \* 100, 2) AS  
discount\_percent

FROM Product AS P

JOIN Pricing AS Pr

ON P.Product\_id = Pr.Product\_id;



**Output:**

Product_name	discount_percent
Garlic Oil - Vegetarian Capsule 500 mg	0.00
Water Bottle - Orange	0.00
Multani Mati	0.00
Hand Sanitizer - 70% Alcohol Base	0.00
Scrub Pad - Anti- Bacterial, Regular	0.00
Butter Cookies Gold Collection	0.00
Face Wash - Oil Control, Active	0.00
Mold & Mildew Remover with Bleach	0.00
Just Spray - Mosquito Repellent Room Spray	0.00
Salted Pumpkin	0.00
Organic Tofu - Soy Paneer	5.40
Ceramic Barrel Brush - Colour May Vary	25.00
Chia Seeds	0.00
Cleanse Green Tea - Whole Leaf Loose Tea	0.00
Insulated Hot Fresh Casserole For Roti/Chapati - White	26.37
Granola - Happy Berries	7.55
Flaxseed - Pesticide Free	2.00
Paratha Puff	18.18
Lip Butter - Rose	15.00
Chocobakes Choc Filled Cookies	15.00

**Q19. Display average market price by brand and category.**

```
SELECT
    B.Brand_name,
    C.Category_name,
    ROUND(AVG(Pr.Market_price), 2) AS avg_price
FROM Brand AS B
JOIN Product AS P
    ON B.Brand_id = P.Brand_id
JOIN Category AS C
    ON P.Category_id = C.Category_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY B.Brand_name, C.Category_name;
```

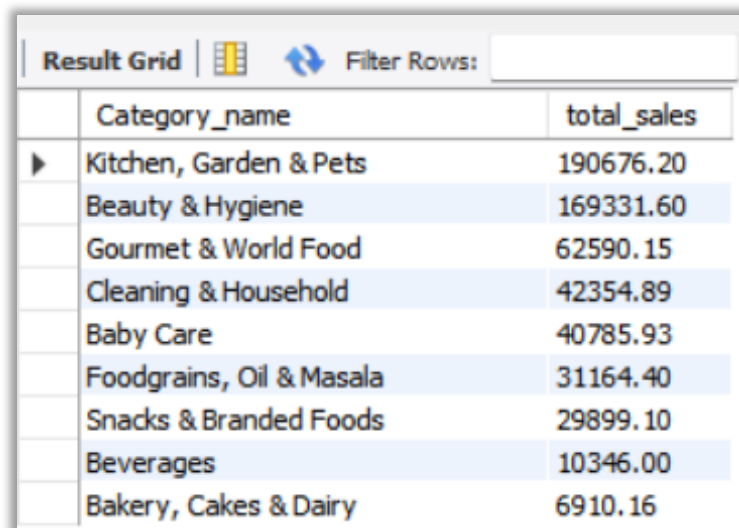
**Output:**

Result Grid    Filter Rows: <input type="text"/>   Export:    Wrap Cell Contents: <input type="checkbox"/>			
	Brand_name	Category_name	avg_price
▶	Sri Sri Ayurveda	Beauty & Hygiene	257.50
	Mastercook	Kitchen, Garden & Pets	271.47
	Satinance	Beauty & Hygiene	94.00
	Bionova	Beauty & Hygiene	250.00
	Scotch brite	Cleaning & Household	662.80
	Sapphire	Gourmet & World Food	388.13
	Oxy	Beauty & Hygiene	110.00
	Clorox	Cleaning & Household	400.00
	Herbal Strategi	Cleaning & Household	200.00
	Graminway	Gourmet & World Food	219.17
	Murginns	Gourmet & World Food	125.00
	Bronson Professional	Beauty & Hygiene	700.00
	NaturoBell	Foodgrains, Oil & Masala	120.00
	Cambridge Tea Party	Gourmet & World Food	75.00
	Cello	Kitchen, Garden & Pets	482.05
	Fit & Flex	Snacks & Branded Foods	305.00
	Safe Harvest	Foodgrains, Oil & Masala	78.40
	Switz	Snacks & Branded Foods	110.00
	Organic Harvest	Beauty & Hygiene	449.60

**Q20. Display all product categories along with their total sales, sorted to identify the highest-selling category.**

```
SELECT
    C.Category_name,
    SUM(Pr.Sale_price) AS total_sales
FROM Category AS C
JOIN Product AS P
    ON C.Category_id = P.Category_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY C.Category_name
ORDER BY total_sales DESC;
```

**Output:**



The screenshot shows a database result grid with the following data:

	Category_name	total_sales
▶	Kitchen, Garden & Pets	190676.20
	Beauty & Hygiene	169331.60
	Gourmet & World Food	62590.15
	Cleaning & Household	42354.89
	Baby Care	40785.93
	Foodgrains, Oil & Masala	31164.40
	Snacks & Branded Foods	29899.10
	Beverages	10346.00
	Bakery, Cakes & Dairy	6910.16

## **Part 3 : Rating, Performance & Trend Analysis**

**Q21. Show the top 5 highest-rated products.**

```
SELECT
    P.Product_name,
    Pr.Rating
FROM Product AS P
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
ORDER BY Pr.Rating DESC
LIMIT 5;
```

**Output:**

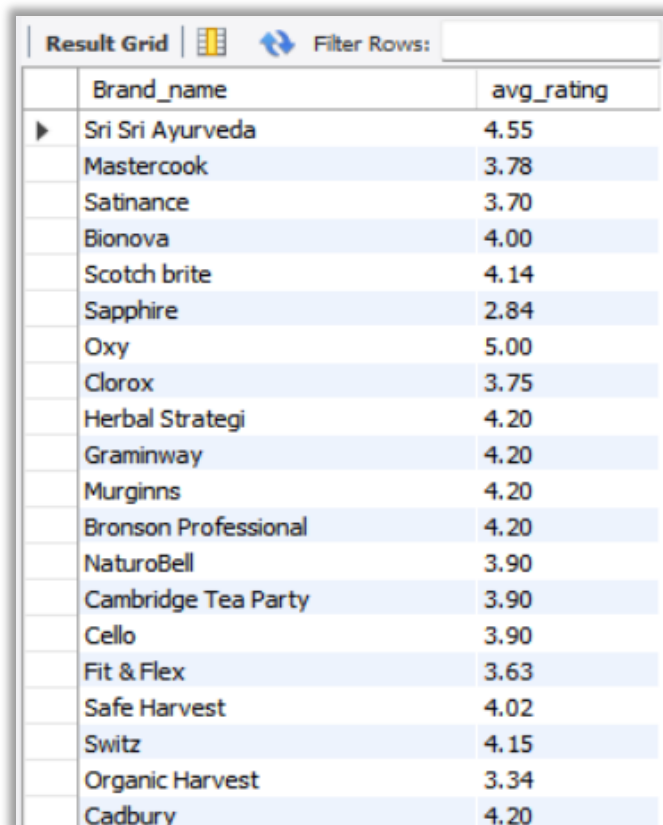
Result Grid		Filter Rows:	Export:
	Product_name	Rating	
▶	Face Wash - Oil Control, Active	5.0	
	Plain Green Olives	5.0	
	Topp Up Milk - Elaichi	5.0	
	SPF 15 Sunscreen Lotion	5.0	
	Soap	5.0	



**Q22. Find average rating per brand.**

```
SELECT  
    B.Brand_name,  
    ROUND(AVG(Pr.Rating), 2) AS avg_rating  
FROM Brand AS B  
JOIN Product AS P  
    ON B.Brand_id = P.Brand_id  
JOIN Pricing AS Pr  
    ON P.Product_id = Pr.Product_id  
GROUP BY B.Brand_name;
```

**Output:**



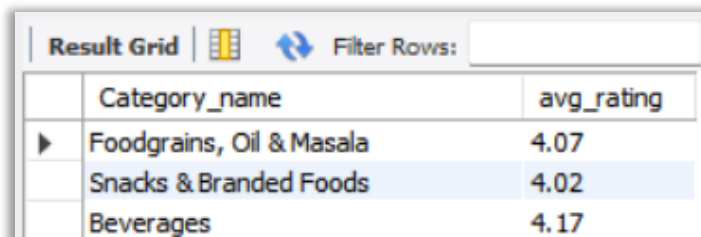
The screenshot shows a database query result grid with two columns: 'Brand\_name' and 'avg\_rating'. The grid contains 20 rows of data, each representing a brand and its average rating, rounded to two decimal places. The brands are listed in descending order of their average rating.

Brand_name	avg_rating
Sri Sri Ayurveda	4.55
Mastercook	3.78
Satinance	3.70
Bionova	4.00
Scotch brite	4.14
Sapphire	2.84
Oxy	5.00
Clorox	3.75
Herbal Strategi	4.20
Graminway	4.20
Murginns	4.20
Bronson Professional	4.20
NaturoBell	3.90
Cambridge Tea Party	3.90
Cello	3.90
Fit & Flex	3.63
Safe Harvest	4.02
Switz	4.15
Organic Harvest	3.34
Cadbury	4.20

**Q23. Display all categories whose average rating > 4.**

```
SELECT
    C.Category_name,
    ROUND(AVG(Pr.Rating), 2) AS avg_rating
FROM Category AS C
JOIN Product AS P
    ON C.Category_id = P.Category_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY C.Category_name
HAVING AVG(Pr.Rating) > 4;
```

**Output:**



	Category_name	avg_rating
▶	Foodgrains, Oil & Masala	4.07
	Snacks & Branded Foods	4.02
	Beverages	4.17

**Q24. Categorize each product based on its rating.**

```
SELECT
    P.Product_name,
    CASE
        WHEN Pr.Rating >= 4.5 THEN 'Excellent'
        WHEN Pr.Rating >= 3 THEN 'Good'
        ELSE 'Average'
    END AS rating_status
FROM Product AS P
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id;
```




**Output:**

Result Grid			Filter Rows:	Export:	Wrap Cell
	Product_name	rating_status			
▶	Garlic Oil - Vegetarian Capsule 500 mg	Good			
	Water Bottle - Orange	Average			
	Multani Mati	Good			
	Hand Sanitizer - 70% Alcohol Base	Good			
	Scrub Pad - Anti-Bacterial, Regular	Good			
	Butter Cookies Gold Collection	Average			
	Face Wash - Oil Control, Active	Excellent			
	Mold & Mildew Remover with Bleach	Good			
	Just Spray - Mosquito Repellent Room Spray	Good			
	Salted Pumpkin	Excellent			
	Organic Tofu - Soy Paneer	Good			
	Ceramic Barrel Brush - Colour May Vary	Good			
	Chia Seeds	Good			
	Cleanse Green Tea - Whole Leaf Loose Tea	Good			
	Insulated Hot Fresh Casserole For Roti/Chapati - White	Good			
	Granola - Happy Berries	Good			
	Flaxseed - Pesticide Free	Good			

**Q25. Find total sale value and average rating per brand.**

```
SELECT
    B.Brand_name,
    ROUND(SUM(Pr.Sale_price), 2) AS total_sales,
    ROUND(AVG(Pr.Rating), 2) AS avg_rating
FROM Brand AS B
JOIN Product AS P
    ON B.Brand_id = P.Brand_id
JOIN Pricing AS Pr
    ON P.Product_id = Pr.Product_id
GROUP BY B.Brand_name;
```

**Output:**

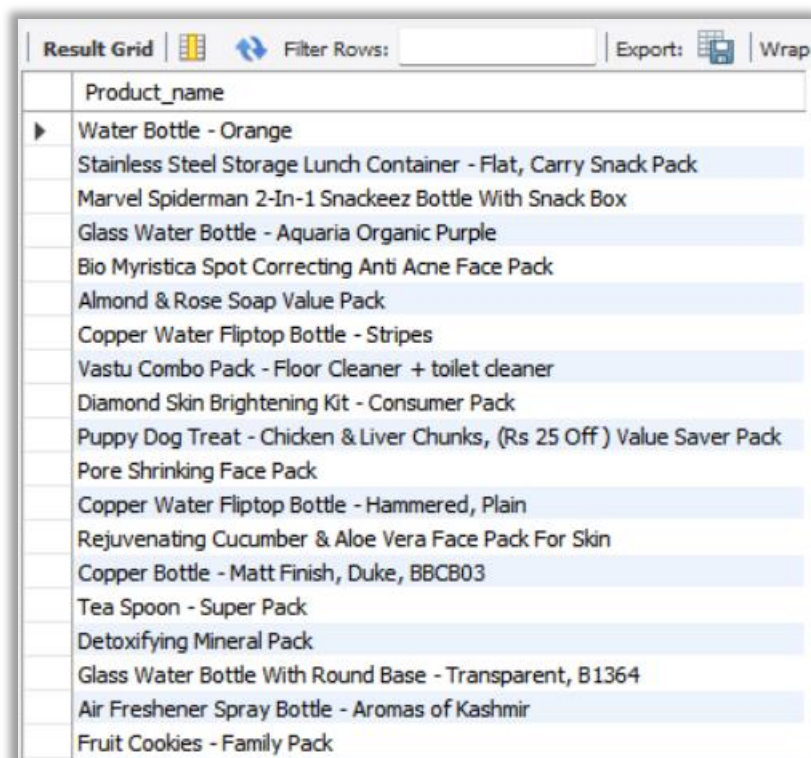
Result Grid   Filter Rows: <input type="text"/> Export: 			
	Brand_name	total_sales	avg_rating
▶	Sri Sri Ayurveda	515.00	4.55
	Mastercook	3215.00	3.78
	Satinance	188.00	3.70
	Bionova	250.00	4.00
	Scotch brite	2779.96	4.14
	Sapphire	3105.00	2.84
	Oxy	110.00	5.00
	Clorox	1525.00	3.75
	Herbal Strategi	200.00	4.20
	Graminway	1315.00	4.20
	Murginns	470.14	4.20
	Bronson Professional	525.00	4.20
	NaturoBell	120.00	3.90
	Cambridge Tea Party	75.00	3.90
	Cello	8615.00	3.90
	Fit & Flex	1120.00	3.63
	Safe Harvest	373.18	4.02

## **Part 4 : String, Date & Advanced SQL Functions**

**Q26. Display all products whose names contain 'Pack' or 'Bottle'.**

```
SELECT
    Product_name
FROM Product
WHERE Product_name LIKE '%Pack%'
    OR Product_name LIKE '%Bottle%';
```

### **Output:**



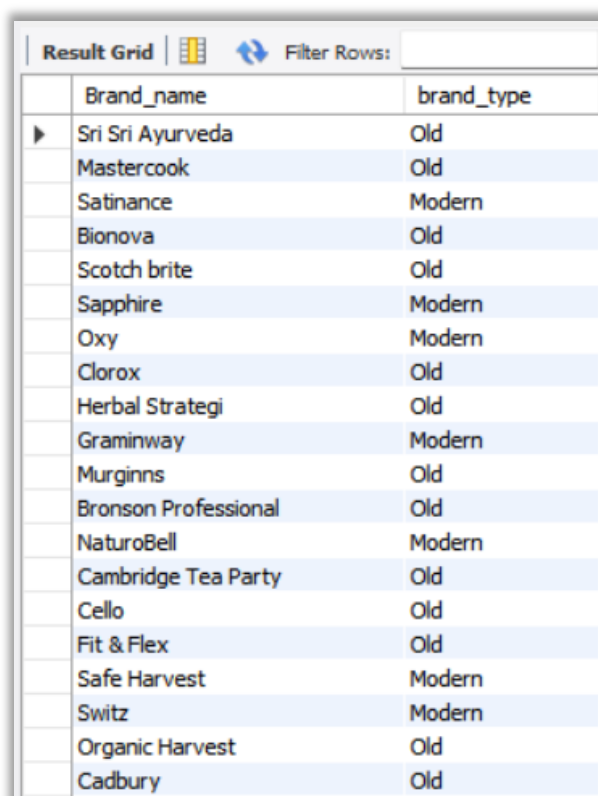
The screenshot shows a database query result grid with the following data:

Product_name
Water Bottle - Orange
Stainless Steel Storage Lunch Container - Flat, Carry Snack Pack
Marvel Spiderman 2-In-1 Snackeez Bottle With Snack Box
Glass Water Bottle - Aquaria Organic Purple
Bio Myristica Spot Correcting Anti Acne Face Pack
Almond & Rose Soap Value Pack
Copper Water Fliptop Bottle - Stripes
Vastu Combo Pack - Floor Cleaner + toilet cleaner
Diamond Skin Brightening Kit - Consumer Pack
Puppy Dog Treat - Chicken & Liver Chunks, (Rs 25 Off ) Value Saver Pack
Pore Shrinking Face Pack
Copper Water Fliptop Bottle - Hammered, Plain
Rejuvenating Cucumber & Aloe Vera Face Pack For Skin
Copper Bottle - Matt Finish, Duke, BBCB03
Tea Spoon - Super Pack
Detoxifying Mineral Pack
Glass Water Bottle With Round Base - Transparent, B1364
Air Freshener Spray Bottle - Aromas of Kashmir
Fruit Cookies - Family Pack

**Q27. Classify each brand as 'Old' or 'Modern' depending on its founded year.**

```
SELECT  
    Brand_name,  
    CASE  
        WHEN Founded_year < 1990 THEN 'Old'  
        ELSE 'Modern'  
    END AS brand_type  
FROM Brand;
```

**Output:**



The screenshot shows a database query result grid with two columns: 'Brand\_name' and 'brand\_type'. The grid contains 20 rows of data. The first row is highlighted with a mouse cursor. The 'brand\_type' column classifies brands as 'Old' or 'Modern' based on their founding year relative to 1990.

Brand_name	brand_type
Sri Sri Ayurveda	Old
Mastercook	Old
Satinance	Modern
Bionova	Old
Scotch brite	Old
Sapphire	Modern
Oxy	Modern
Clorox	Old
Herbal Strategi	Old
Graminway	Modern
Murginns	Old
Bronson Professional	Old
NaturoBell	Modern
Cambridge Tea Party	Old
Cello	Old
Fit & Flex	Old
Safe Harvest	Modern
Switz	Modern
Organic Harvest	Old
Cadbury	Old

**Q28. Identify top 5 months (with year) having the highest number of price updates.**

```
SELECT
    YEAR>Last_updated) AS update_year,
    MONTHNAME>Last_updated) AS update_month,
    COUNT(*) AS total_updates
FROM Pricing
GROUP BY YEAR>Last_updated), MONTHNAME>Last_updated)
ORDER BY total_updates DESC
LIMIT 5;
```

**Output:**

Result Grid			
Filter Rows:			
	update_year	update_month	total_updates
▶	2025	July	297
	2025	January	279
	2025	May	274
	2025	March	254
	2025	June	249

**Q29. Calculate total new categories per month and rank the months.**

SELECT

MONTHNAME(Created\_at) AS month\_name,


COUNT(Category\_id) AS total\_categories,

RANK() OVER (ORDER BY COUNT(Category\_id) DESC) AS month\_rank

FROM Category

GROUP BY YEAR(Created\_at), MONTHNAME(Created\_at);

**Output:**

Result Grid    Filter Rows: <input type="text"/>			
	month_name	total_categories	month_rank
▶	June	56	1
	September	54	2
	June	51	3
	November	51	3
	April	50	5
	October	50	5
	March	49	7
	July	49	7
	February	47	9
	April	47	9
	August	46	11
	October	45	12
	January	45	12
	November	45	12
	August	45	12
	June	44	16
	September	44	16
	March	43	18
	December	42	19
	October	42	19
	July	42	19
	April	42	19



**Q30. Categorize brands by country and create a formatted brand label.**

```

SELECT
    Brand_name,
    Country_of_Origin,
    CONCAT(
        Brand_name, ' - ',
        CASE
            WHEN Country_of_Origin = 'India' THEN 'Domestic Brand'
            ELSE 'Global Brand'
        END
    ) AS Brand_Label
FROM Brand;

```

**Output:**

Result Grid			
		Filter Rows:	Export:   Wrap Cell Content:
	Brand_name	Country_of_Origin	Brand_Label
▶	Sri Sri Ayurveda	India	Sri Sri Ayurveda - Domestic Brand
	Mastercook	India	Mastercook - Domestic Brand
	Satinance	India	Satinance - Domestic Brand
	Bionova	India	Bionova - Domestic Brand
	Scotch brite	USA	Scotch brite - Global Brand
	Sapphire	India	Sapphire - Domestic Brand
	Oxy	USA	Oxy - Global Brand
	Clorox	USA	Clorox - Global Brand
	Herbal Strategi	India	Herbal Strategi - Domestic Brand
	Graminway	India	Graminway - Domestic Brand
	Murginns	India	Murginns - Domestic Brand
	Bronson Professional	USA	Bronson Professional - Global Brand
	NaturoBell	India	NaturoBell - Domestic Brand
	Cambridge Tea Party	UK	Cambridge Tea Party - Global Brand
	Cello	India	Cello - Domestic Brand
	Fit & Flex	India	Fit & Flex - Domestic Brand
	Safe Harvest	India	Safe Harvest - Domestic Brand
	Switz	Switzerland	Switz - Global Brand
	Organic Harvest	India	Organic Harvest - Domestic Brand
	Cadbury	India	Cadbury - Domestic Brand

# **CONCLUSION**

The BigBasket Business Insights & Analytics Project effectively demonstrates the power of SQL in extracting, analyzing, and interpreting meaningful business insights from structured data.

Through a well-designed relational database and analytical SQL queries, the project reveals key trends in pricing, product performance, and brand growth — enabling organizations to make informed and strategic business decisions.

This project proves that SQL is not only a database management tool but also a robust analytical engine that bridges the gap between raw data and actionable intelligence.

Overall, it highlights how SQL-based analytics enhances decision-making, improves operational efficiency, and lays the foundation for advanced data visualization and business intelligence solutions.