

# AMAZON SALES ANALYSIS

with SQL

# ◆ Problem Statement:

You are working at Amazon, a leading e-commerce platform. The management has tasked you with analyzing sales data by performing different queries in **SQL**.

1. List all products with a discounted price **below ₹500**.
2. Find products with a discount percentage of **50% or more**.
3. Retrieve all products where the name contains the word "**Cable**."
4. Display the difference between the **average** of the **actual price** and the **discounted price** for each Category.
5. Query reviews that mention "**fast charging**" in their content.
6. Identify products with a discount percentage between **20% and 40%**.
7. Find products that have an actual price **above ₹1,000** and are rated **4 stars or above**.
8. Find products where the discounted price ends with a **9**.
9. Display review contents that contains words like **worst, waste, poor, or not good**.
10. List all products where the category includes "**Accessories**".

# What is 'SQL'

**SQL (Structured Query Language)** is a specialized programming language designed for managing and manipulating data stored in relational databases. It allows users to perform various operations such as querying, updating, inserting, and deleting data efficiently in databases like **MySQL**, **SQL Server**, **Oracle**, and more.

**SQL** is based on the principles of relational algebra and tuple relational calculus. It provides a declarative approach to specify what data to retrieve or manipulate without detailing how to perform the operations.

## Importance and Uses of SQL

SQL is essential for various reasons:

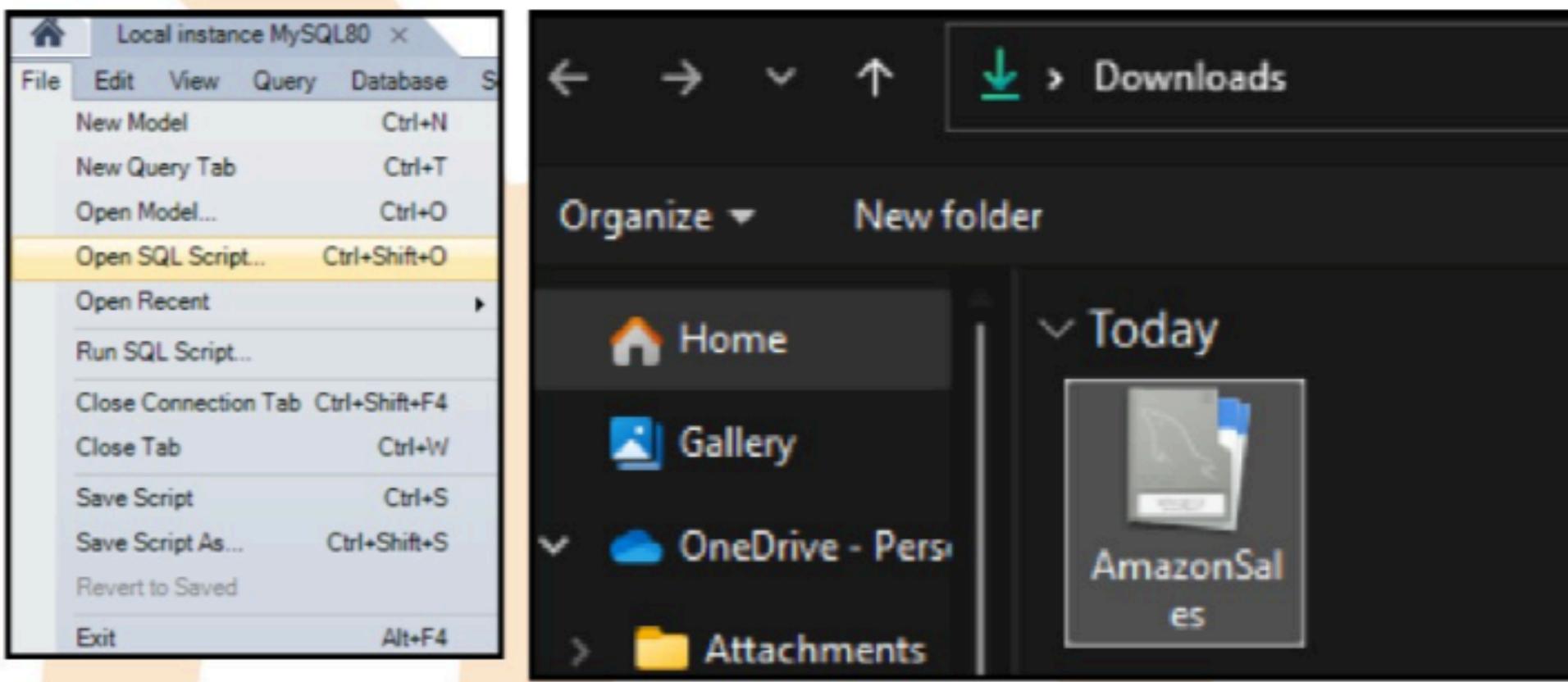
- **Data Retrieval:** Efficiently retrieves data from large databases.
- **Data Manipulation:** Allows for the insertion, updating, and deletion of data.
- **Data Definition:** Defines the structure of data within a database.
- **Access Control:** Manages user permissions and access to data

# • Initial steps before starting the QUERIES.

The screenshot shows the MySQL Workbench interface. On the left, the 'SCHEMAS' tree view is open, showing a list of databases including 'amazon', 'classicmodels', 'college', 'sakila', 'sys', and 'world'. The main query editor window contains the following SQL commands:

```
1 · CREATE DATABASE amazon;
2
3 · USE amazon;
```

In Workbench, create a new Database named '**amazon**' and then use it by executing the command '**USE amazon**'; by pressing **Ctrl+enter**.



Since the tables are empty, import the Data by clicking on "**File**" and selecting "**Open SQL Script...**" or directly open it by pressing **Ctrl+Shift+O** and then eventually upload your Dataset file (**amazonsales**)

The screenshot shows the MySQL Workbench interface with the title bar "MySQL Workbench" and "Local instance MySQL80 X". The menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The toolbar has various icons for database management. The Navigator pane on the left lists databases: "amazon", "classicmodels", "college", "sakila", "sys", and "world". The Schemas pane shows the "amazon" schema with Tables, Views, Stored Procedures, and Functions. The main query editor window displays the following SQL code:

```
1 • CREATE TABLE `mytable` (
2     `product_id` VARCHAR(1024),
3     `product_name` VARCHAR(1024),
4     `category` VARCHAR(1024),
5     `discounted_price` DOUBLE,
6     `actual_price` DOUBLE,
7     `discount_percentage` DOUBLE,
8     `rating` DOUBLE NULL,
9     `rating_count` DOUBLE NULL,
10    `about_product` Text,
11    `user_id` VARCHAR(1024),
12    `user_name` VARCHAR(1024),
13    `review_id` VARCHAR(1024),
14    `review_title` VARCHAR(1024),
15    `review_content` Text,
16    `img_link` VARCHAR(1024),
17    `product_link` VARCHAR(1024)
18 );
19
20 • INSERT INTO `mytable` (`product_id`, `product_name`, `category`, `discounted_price`, `actual_price`, `discount_percentage`, `rating`, `rating_count`, `about_product`, `user_id`, `user_na
21 VALUES
22 ('807JW9H4J1', 'Mayona Nylonmytable Braided USB to Lightning Fast Charging and Data Sync Cable Compatible for iPhone 13, 12, 11, X, 8, 7, 6, 5, iPad Air, Pro, Mini (3 FT Pack of
```

The "Information" tab is selected in the bottom-left panel, which says "No object selected". The bottom panel shows the "Output" tab with "Action Output" selected, displaying a table with columns #, Time, Action, Message, and Duration / Fetch.

After the **Dataset file** is uploaded, this screen will appear and you'll have to **run the above query** to access the **Dataset**, allowing you to start your project queries.

## Result

## Syntax

- List all products with a discounted price below ₹500.

```
1 SELECT
2     product_name, discounted_price
3 FROM
4     mytable
5 WHERE
6     discounted_price < 500;
```

product_name	discounted_price
Wayona Nylon Braided USB to Lightning Fast Ch...	399
Ambrane Unbreakable 60W / 3A Fast Charging ...	199
Source Fast Phone Charging Cable & Data Sync...	199
boAt Deuce USB 300 2 in 1 Type-C & Micro USB ...	329
Portronics Konnect L 1.2M Fast Charging 3A 8 P...	154
pTron Solero TB301 3A Type-C Data and Fast C...	149
boAt Micro USB 55 Tangle-free, Sturdy Micro US...	176.63
MI Usb Type-C Cable Smartphone (Black)	229
TP-Link USB WiFi Adapter for PC(TL-WN725N), ...	499
Ambrane Unbreakable 60W / 3A Fast Charging ...	199
Portronics Konnect L POR-1081 Fast Charging 3...	154
boAt Rugged v3 Extra Tough Unbreakable Braid...	299
AmazonBasics Elevable Premium HDMI Cable (Bla...	219

★ Purpose  
The purpose of this tool is to find budget-friendly products under ₹500, catering to price-sensitive customers.

- Find products with a discount percentage of **50% or more**.

## SYNTAX

```
1 SELECT
2     product_id, product_name, discount_percentage
3 FROM
4     mytable
5 WHERE
6     discount_percentage >= 0.50;
```

## Result

	product_id	product_name	discount_percentage
▶	B07JW9H4J1	Wayona Nylon Braided USB to Lightning Fast Ch...	0.64
	B096MSW6CT	Sounce Fast Phone Charging Cable & Data Sync...	0.9
	B08HDJ86NZ	boAt Deuce USB 300 2 in 1 Type-C & Micro USB ...	0.53
	B08CF3B7N1	Portronics Konnect L 1.2M Fast Charging 3A 8 P...	0.61
	B08Y1TFSP6	pTron Solero TB301 3A Type-C Data and Fast C...	0.85
	B08WRWPM22	boAt Micro USB 55 Tangle-free, Sturdy Micro US...	0.65
	B008IPXQFU	TP-Link USB WiFi Adapter for PC(TL-WN725N), ...	0.5
	B08CF3D7QR	Portronics Konnect L POR-1081 Fast Charging 3...	0.55
	B0789LZTCJ	boAt Rugged v3 Extra Tough Unbreakable Braid...	0.63
	B07KSMBL2H	AmazonBasics Flexible Premium HDMI Cable (Bla...	0.69
	B085DTN6R2	Portronics Konnect CL 20W POR-1067 Type-C t...	0.61

## Purpose

Highlight items with a discount percentage of **50% or more** for significant sales opportunities often featured in promotional campaigns, **aiding in finding heavily discounted items.**

## Result

product_id	product_name
B07JW9H4J1	Wayona Nylon Braided USB to Lightning Fast Ch...
B098NS6PVG	Ambrane Unbreakable 60W / 3A Fast Charging ...
B096MSW6CT	Source Fast Phone Charging Cable & Data Sync...
B08HDJ86NZ	boAt Deuce USB 300 2 in 1 Type-C & Micro USB ...
B08CF3B7N1	Portronics Konnect L 1.2M Fast Charging 3A 8 P...
B08Y1TFSP6	pTron Solero TB301 3A Type-C Data and Fast C...
B08WRWPM22	boAt Micro USB 55 Tangle-free, Sturdy Micro US...
B08DDRGWTJ	MI Usb Type-C Cable Smartphone (Black)
B082LZGK39	Ambrane Unbreakable 60W / 3A Fast Charging ...
B08CF3D7QR	Portronics Konnect L POR-1081 Fast Charging 3...
B0789LZTCJ	boAt Rugged v3 Extra Tough Unbreakable Braid...
B07KSMBL2H	AmazonBasics Flexible Premium HDMI Cable (Bla...
B085DTN6R2	Portronics Konnect CL 20W POR-1067 Type-C t...

```
1 SELECT
2     product_id, product_name
3 FROM
4     mytable
5 WHERE
6     product_name LIKE '%Cable%';
```

*Reporting on cable product performance, pricing, and availability.*

## Purpose

- This query finds products with "Cable" in the name, aiding in:
  - Product search for cables
  - Inventory management and categorization
  - Targeted marketing campaigns
  - Customer support efficiency
  - Sales analysis for cable products

- Display the difference between the **average** of the **actual price** and the **discounted price** for each '**Category**'.

## SYNTAX

```
1 SELECT
2     category,
3     AVG(actual_price) - AVG(discounted_price)
4     AS 'Price after discount'
5 FROM
6     mytable
7 GROUP BY category;
```

category	Price after discount
Computers&Accessories Accessories&Peripheral...	545.2991416309013
Computers&Accessories NetworkingDevices Ne...	666.333333333333
Electronics HomeTheater,TV&Video Accessories...	768.958333333333
Electronics HomeTheater,TV&Video Televisions ...	15292.650793650795
Electronics HomeTheater,TV&Video Accessories...	731.5102040816325
Electronics HomeTheater,TV&Video Televisions ...	8148.83333333333
Electronics HomeTheater,TV&Video Accessories...	918.666666666666
Electronics HomeTheater,TV&Video Accessories...	515
Electronics HomeAudio Accessories SpeakerAcc...	950
Electronics HomeTheater,TV&Video Accessories...	735.666666666666
Electronics HomeTheater,TV&Video Projectors	8303.33333333332

## Purpose

This query calculates the difference between the actual and discounted prices for each **Category**.

## Result

It helps understand customer savings, assess the effectiveness of **pricing strategies**, evaluate the impact of **promotions**, review profit margins, and compare price differences across Category for better inventory and pricing decisions.

## Result

## Syntax

```
1 • SELECT
2     product_id, product_name, review_content
3 FROM
4     mytable
5 WHERE
6     review_content LIKE '%fast charging%';
```

product_id	product_name	review_content
B098NS6PVG	Ambrane Unbreakable 60W / 3A Fast Charging ...	I ordered this cable to connect my phone to An...
B08HDJ86NZ	boAt Deuce USB 300 2 in 1 Type-C & Micro USB ...	Good product,long wire,Charges good,Nice,I bo...
B082LZGK39	Ambrane Unbreakable 60W / 3A Fast Charging ...	I ordered this cable to connect my phone to An...
B08CF3D7QR	Portronics Konnect L POR-1081 Fast Charging 3...	The cable is efficient in fast charging but in quic...
B0789LZTCJ	boAt Rugged v3 Extra Tough Unbreakable Braid...	Good product,long wire,Charges good,Nice,I bo...
B085DTN6R2	Portronics Konnect CL 20W POR-1067 Type-C t...	Definitely isn't as good as the original cord but ...
B083342NKJ	MI Braided USB Type-C Cable for Charging Ada...	I like it ⚡⚡,Best charging power . I used this c...
B082LSVT4B	Ambrane Unbreakable 60W / 3A Fast Charging ...	I ordered this cable to connect my phone to An...
B08WRBG3XW	boAt Type C A325 Tangle-free, Sturdy Type C ...	Check for offera before buying,18w charging c...
B09NHVCHS9	Flix Micro Usb Cable For Smartphone (Black)	Worked on iPhone 7 and didn't work on iPhone ...
B094JNXNPV	Ambrane Unbreakable 3 in 1 Fast Charging Brai...	The product seems and works good but it's not ...

★ Purpose  
This query helps in understanding **customer opinions, improving products, evaluating competition, addressing issues, and monitoring trends for strategic decisions.**

## Result

## Syntax

```
1 SELECT
2     product_id, product_name, discount_percentage
3 FROM
4     mytable
5 WHERE
6     discount_percentage BETWEEN 0.20 AND 0.40;
```

product_id	product_name	discount_percentage
B08DDRGWTJ	MI Usb Type-C Cable Smartphone (Black)	0.23
B082LZGK39	Ambrane Unbreakable 60W / 3A Fast Charging ...	0.33
B082LSVT4B	Ambrane Unbreakable 60W / 3A Fast Charging ...	0.38
B08DPLCM6T	LG 80 cm (32 inches) HD Ready Smart LED TV 3...	0.39
B08B42LWKN	OnePlus 80 cm (32 inches) Y Series HD Ready L...	0.25
B094JNXNPV	Ambrane Unbreakable 3 in 1 Fast Charging Brai...	0.25
B083MMYHYW	OnePlus 126 cm (50 inches) Y Series 4K Ultra H...	0.28
B07KRCW6LZ	TP-Link Nano AC600 USB Wi-Fi Adapter(Archer ...	0.38
B014I8SSDO	Amazon Basics High-Speed HDMI Cable, 6 Feet ...	0.35
B09Q5SWVBJ	OnePlus 80 cm (32 inches) Y Series HD Ready S...	0.27
B0815CPR37	Samsung 108 cm (43 inches) Crystal 4K Neo Ser...	0.31

★ Purpose  
This query is used to find products with discounts between **20%** and **40%**, aiding in identifying products with moderate discounts, useful for sales analysis focusing on specific discount ranges.

## Result

## SYNTAX

- Find products that have an actual price **above ₹1,000** and are rated **4 stars or above**.

```
1 • SELECT
2     product_id, product_name, actual_price, rating
3   FROM
4     mytable
5 WHERE
6     (actual_price > 1000) AND (rating >= 4);
```

product_id	product_name	actual_price	rating
B07JW9H4J1	Wayona Nylon Braided USB to Lightning Fast Ch...	1099	4.2
B086F7LX4C	MI 80 cm (32 inches) 5A Series HD Ready Smart...	24999	4.2
B08DPLCM6T	LG 80 cm (32 inches) HD Ready Smart LED TV 3...	21990	4.3
B09C6HXFC1	Duracell USB Lightning Apple Certified (Mfi) Brai...	1799	4.5
B09F6S8BT6	Samsung 80 cm (32 Inches) Wondertainment Se...	22900	4.3
B081YVCJ2Y	Acer 80 cm (32 inches) I Series HD Ready Andr...	19990	4.3
B08B42LWKN	OnePlus 80 cm (32 inches) Y Series HD Ready L...	19999	4.2
B09W5XR9RT	Duracell USB C To Lightning Apple Certified (Mfi)...	1999	4.4
B08QSC1XY8	Zoul USB C 60W Fast Charging 3A 6ft/2M Long ...	1099	4.3
B07XLCFSSN	Amazonbasics Nylon Braided Usb-C To Lightning...	1900	4.4
B083MMYHYW	OnePlus 126 cm (50 inches) Y Series 4K Ultra H...	45999	4.2

★ Purpose  
This query helps in identifying **price patterns, tracking promotions, making price adjustment decisions, understanding consumer preferences, and reviewing stock** for better pricing strategies and sales performance.

- Find products where the discounted price ends with 9.

## SYNTAX

```
1 SELECT
2     product_id, product_name, discounted_price
3 FROM
4     mytable
5 WHERE
6     discounted_price LIKE '%9%';
```

## Result

product_id	product_name	discounted_price
B07JW9H4J1	Wayona Nylon Braided USB to Lightning Fast Ch...	399
B098NS6PVG	Ambrane Unbreakable 60W / 3A Fast Charging ...	199
B096MSW6CT	Sounce Fast Phone Charging Cable & Data Sync...	199
B08HDJ86NZ	boAt Deuce USB 300 2 in 1 Type-C & Micro USB ...	329
B08Y1TFSP6	pTron Solero TB301 3A Type-C Data and Fast C...	149
B08DDRGWTJ	MI Usb Type-C Cable Smartphone (Black)	229
B008IFXQFU	TP-Link USB WiFi Adapter for PC(TL-WN725N), ...	499
B082LZGK39	Ambrane Unbreakable 60W / 3A Fast Charging ...	199
B0789LZTCJ	boAt Rugged v3 Extra Tough Unbreakable Braid...	299
B07KSMBL2H	AmazonBasics Flexible Premium HDMI Cable (Bla...	219
B09KLVMZ3B	Portronics Konnect L 1.2M POR-1401 Fast Char...	159

## Purpose

This query provides insights for businesses on **pricing analysis, promotional strategies, sales optimization, customer behavior insights, and inventory management** related to prices ending in 9.

# Result

# Syntax

```
1 • SELECT
2     product_id, product_name, review_content
3 FROM
4     mytable
5 WHERE
6     review_content LIKE '%worst%'
7         OR review_content LIKE '%waste%'
8         OR review_content LIKE '%poor%'
9         OR review_content LIKE '%not good%';
```

product_id	product_name	review_content
B08DDRGWTJ	MI Usb Type-C Cable Smartphone (Black)	Worth for money - suitable for Android auto.... ...
B08WRBG3XW	boAt Type C A325 Tangle-free, Sturdy Type C ...	Check for offera before buying, 18w charging c...
B08DPLCM6T	LG 80 cm (32 inches) HD Ready Smart LED TV 3...	LG was always Good , correct delivery, good se...
B085194JFL	tizum HDMI to VGA Adapter Cable 1080P for Pr...	This connector has provided as a boon for my ol...
B09F6S8BT6	Samsung 80 cm (32 Inches) Wonderertainment Se...	Overall good.,TV picture ok smart betterSound ...
B081YVCJ2Y	Acer 80 cm (32 inches) I Series HD Ready Andr...	About the TV - Wonderful-----,...
B08B42LWKN	OnePlus 80 cm (32 inches) Y Series HD Ready L...	This OnePlus TV is great if you want a affordabl...
B008FWZGSG	Samsung Original Type C to C Cable - 3.28 Feet...	Buy it,Received in good condition and is working...
B0B3MMYHYW	OnePlus 126 cm (50 inches) Y Series 4K Ultra H...	I am posting this after a few weeks of using the...
B09JPC82QC	Mi 108 cm (43 inches) Full HD Android LED TV 4...	NOTE:@ If you select brand-authorized TV inst...
B09L8DSSFH	7SEVEN® Compatible for Samsung Smart 4K Ult...	Overall replacement of original samsung remote...

## Purpose

This query retrieves reviews with **negative keywords** to analyze customer sentiment, improve products, address complaints, monitor trends, and conduct competitive analysis. **It helps businesses enhance customer satisfaction and product quality by understanding and resolving negative feedback.**

# Result

# Syntax

```
1 SELECT
2     product_id, product_name, category
3 FROM
4     mytable
5 WHERE
6     category LIKE '%Accessories%';
```

product_id	product_name	category
B07JW9H4J1	Wayona Nylon Braided USB to Lightning Fast Ch...	Computers&Accessories Accessories&Peripheral...
B098NS6PVG	Ambrane Unbreakable 60W / 3A Fast Charging ...	Computers&Accessories Accessories&Peripheral...
B096MSW6CT	Source Fast Phone Charging Cable & Data Sync...	Computers&Accessories Accessories&Peripheral...
B08HDJ86NZ	boAt Deuce USB 300 2 in 1 Type-C & Micro USB ...	Computers&Accessories Accessories&Peripheral...
B08CF3B7N1	Portronics Konnect L 1.2M Fast Charging 3A 8 P...	Computers&Accessories Accessories&Peripheral...
B08Y1TFSP6	pTron Solero TB301 3A Type-C Data and Fast C...	Computers&Accessories Accessories&Peripheral...
B08WRWPM22	boAt Micro USB 55 Tangle-free, Sturdy Micro US...	Computers&Accessories Accessories&Peripheral...
B08DDRGWTJ	MI Usb Type-C Cable Smartphone (Black)	Computers&Accessories Accessories&Peripheral...
B008IFXQFU	TP-Link USB WiFi Adapter for PC(TL-WN725N), ...	Computers&Accessories NetworkingDevices Ne...
B082LZGK39	Ambrane Unbreakable 60W / 3A Fast Charging ...	Computers&Accessories Accessories&Peripheral...
B08CF3D7QR	Portronics Konnect L POR-1081 Fast Charging 3...	Computers&Accessories Accessories&Peripheral...

- List all products where the category includes "Accessories."

## Purpose

This query retrieves products in the "Accessories" category, useful for:

- Category analysis
- Inventory management
- Sales performance tracking
- Promotional strategies
- Product development

Beneficial for businesses focusing on accessories, aiding in inventory control, sales analysis, and marketing strategies.

BY

**AYESHA HABIB**

[theayeshahabib@gmail.com](mailto:theayeshahabib@gmail.com)