

Hands-On Lab: Generative AI for Q and A

Estimated time needed: 30 minutes

Overview

In this lab, you will learn how to use **Powerdrill**, a generative AI tool, to gain insights into data through natural language question-and-answer interactions. You will upload a dataset and explore it by asking analytical questions to uncover patterns, relationships, and trends in the data.

Objectives

After completing this lab, you will be able to:

1. Sign in on <https://powerdrill.ai/>
2. Upload data set
3. Q and A to know the dataset

Dataset

The dataset used in this lab is generated using a generative AI tool. Keep the Ctrl key pressed and download this dataset from [here](#). The attributes of the dataset include product ID, title, price, sales rank, brand, category, and availability. These attributes provide product details, such as identification, pricing, popularity (sales rank), brand, category, and availability status.

Task 1: Signing in on Powerdrill

Step 1: Click the link below, then select Sign Up if you do not already have login credentials.

<https://chat.powerdrill.ai/>

Task 2: Upload the dataset

Step 1: After logging in, you will see your workspace. Click **Add files** option and select **Choose files**.

The screenshot shows the Powerdrill AI interface. On the left, there's a sidebar with 'New chat', 'Discover', 'Datasets', 'History', and an 'Upgrade plan' section featuring a rocket icon. The main area has a banner saying 'AI for serious data work, unlock 100x efficiency' and 'Loved by over 1,500,000 users globally'. It also features sections for 'AI Data Report Generator' (with a 'Try our demo' button) and 'Data Processing Helper' (with a 'Get started' button). A central callout box says 'Meet Powerdrill Bloom' and 'Your AI Data Agents Team!'. Below this is a 'Launch' button. A modal window titled 'Attach files' is open, containing 'Upload files' and 'Choose files' (which is highlighted with a red box), 'Use existing files', 'Select dataset', and 'Add files' (also highlighted with a red box). At the bottom of the modal are 'General mode' and 'Advanced mode' buttons, and a 'Start a new chat' button.

Step 2: Upload the dataset by selecting the file 'electronics_dataset.csv' file from its saved location on your device. Keep the Ctrl key pressed and download it from [here](#) if you still need to do so.

Task 3: Q and A the data set for better insights

Once the data set is uploaded, you must explore it with natural language-based questions. Start exploring your data by typing the questions (prompts) in the input box.

The screenshot shows the Powerdrill AI interface with an input box containing 'Analyze with files, quickly gain insights.' Below the input box are 'General mode' and 'Advanced mode' buttons, both of which are highlighted with a red box. To the right is a 'Send' button.

You can begin with the suggested questions as given below.

Question 1: Identify the products with the highest sales.

Prompt: What are the top-selling products?

What are the top-selling products?

Answer

Code 1 Files 2 Charts 1

Task Steps

Analyzing Conclusions

Top-Selling Products

Total Quantity Sold

product_sales_data.csv

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- **Keyboard:** Sold 75 units, making it the top-selling product.
- **Tablet:** Sold 74 units, closely following the keyboard.
- **Monitor:** Sold 65 units, ranking third in sales.
- **Desk:** Sold 62 units, also among the top sellers.
- **External Hard Drive:** Sold 59 units, rounding out the top five.

Now you know that the top-selling products are keyboards, tablets, and so on.

Question 2: Determine which product has the highest average selling price by calculating the average price for each product.

Prompt: Which product has the highest average price?

Which product has the highest average price?

Answer Code 1 Files 2 Charts 1

Task Steps ▾

Analyzing Conclusions

Product with the Highest Average Price

Analysis of Average Price

average_price_data.csv

- Product with Highest Average Price: Printer
- Average Price: 134.22

Question 3: Determine the total revenue for the specified time frame.

Prompt: What is the total revenue for the latest two months?

What is the total revenue for the latest two months?

Answer Code 1 Files 2 Charts 1

Task Steps ▾

Analyzing Conclusions

Total Revenue for the Most Recent Two Months

Revenue Summary

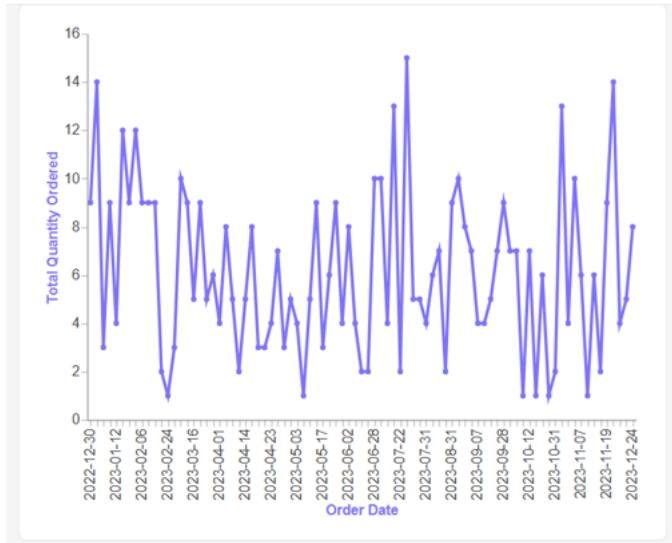
recent_months_revenue.csv

- October 2023: \$565.25
- November 2023: \$4956.94
- December 2023: \$2221.91

Question 4: See patterns in the number of items ordered over a period.

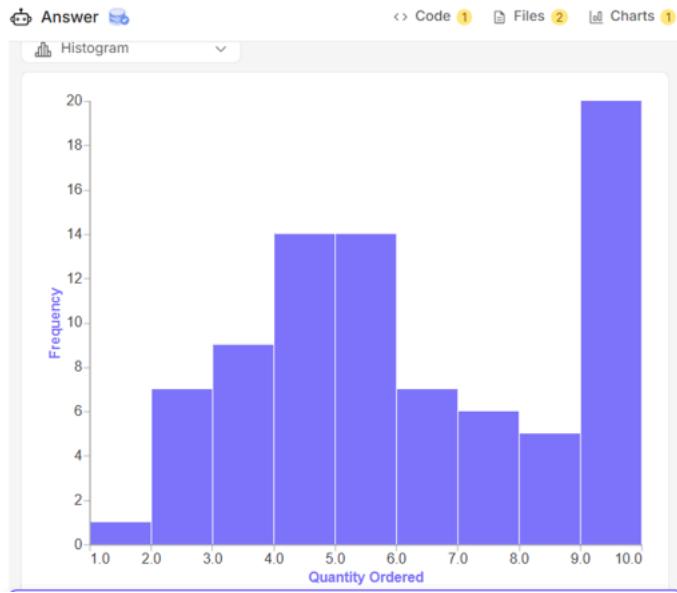
Prompt: How has the quantity ordered changed over time?

Answer Code 1 Files 2 Charts 1



Question 5: Determine typical order sizes by histogram of the distribution of order quantities.

Prompt: What is the distribution of order quantities?

**Question 6: Determine the count of orders placed for different quantities of items.****Prompt:** How many orders were placed for different quantities of items?

⌚ Task Steps ▾

Analyzing Conclusions

Number of Orders for Each Quantity of Items**Orders Count Analysis**

- **Quantity 1:** 10 orders
- **Quantity 2:** 13 orders
- **Quantity 3:** 10 orders
- **Quantity 4:** 13 orders
- **Quantity 5:** 11 orders
- **Quantity 6:** 7 orders
- **Quantity 7:** 6 orders
- **Quantity 8:** 4 orders
- **Quantity 9:** 6 orders
- **Quantity 10:** 10 orders

Question 7: Explain if there's a relationship between the quantity ordered and the price of each.**Prompt:** Are there any correlations between the quantity ordered and price each?

Are there any correlations between the quantity ordered and price each?

⌚ Task Steps ▾

Analyzing Conclusions

Correlation Analysis**Correlation Coefficient**

correlation_coefficient.csv

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- **Correlation Coefficient:** The Pearson correlation coefficient between 'Quantity Ordered' and 'Price Each' is **-0.06968**.

Question 8: Analyze sales patterns to identify the most profitable days.**Prompt:** Which day of the week has the highest sales?

Which day of the week has the highest sales?

The screenshot shows a user interface for generating insights from data. At the top, there are tabs for 'Answer' (selected), 'Code' (1), 'Files' (2), and 'Charts' (1). Below the tabs, a 'Task Steps' dropdown is open, showing 'Analyzing Conclusions'. A main heading 'Day with Highest Sales' is displayed, followed by a sub-section 'Sales Analysis'. A file browser window shows a CSV file named 'sales_by_day.csv'. Underneath, a bulleted list provides the analysis: 'Highest Sales Day: Tuesday' and 'Total Sales Amount on Tuesday: 11,894.95'.

Question 9: Describe the typical order size.

Prompt: What is the average order size?

What is the average order size?

The screenshot shows a user interface for generating insights from data. At the top, there are tabs for 'Answer' (selected), 'Code' (1), 'Files' (2), and 'Charts' (1). Below the tabs, a 'Task Steps' dropdown is open, showing 'Analyzing Conclusions'. A main heading 'Average Order Size Calculation' is displayed, followed by a sub-section 'Calculation Process'. A bulleted list provides the analysis: 'Total Number of Orders: There are 100 orders in total.', 'Total Quantity Ordered: The sum of all quantities ordered is 500.', and 'Average Order Size: The average order size is calculated by dividing the total quantity ordered by the total number of orders, resulting in an average order size of 5.' Below this, another section 'Conclusion and Insights' is shown with a bullet point: 'Average Order Size: The average order size is 5, indicating that on average, each order contains 5 items.'

Practice Q and A

1. Look for co-occurrence patterns to find goods commonly bought together.
2. Monitor a product's sales performance to spot trends and seasonality.

Conclusion

In this lab, you learned how to use generative AI to get insights into data through question answers using the **Powerdrill tool**.

Author(s)

Pratiksha Verma

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