

Module 3:

Generating Foundational Visuals

Mastering the Art of AI-Driven Data Storytelling

The Visual Dictionary

Selecting the right chart for your data patterns

MATCHING PATTERNS TO CHARTS



Trends Over Time

Use **Line Charts** for temporal data. AI recognizes patterns like "month-over-month" to suggest continuous flows.



Category Splits

Use **Bar Charts** for discrete labels. Perfect for comparing departments, regions, or product types.



Relationships

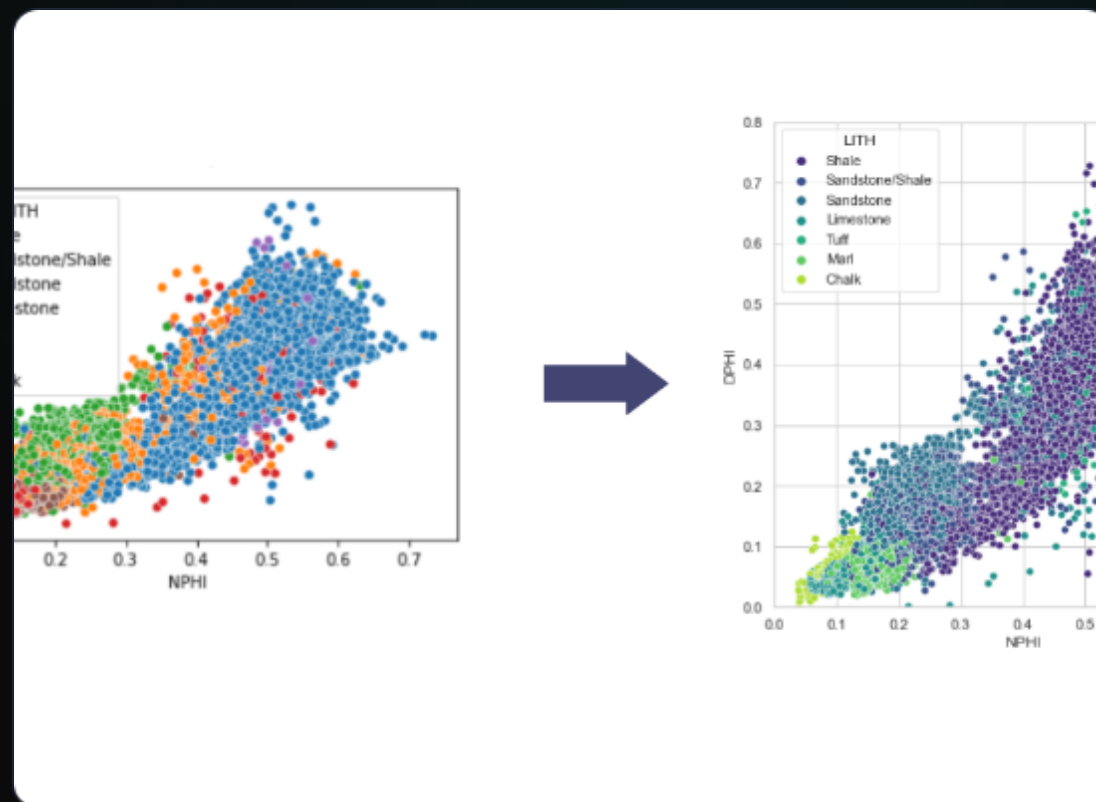
Use **Scatter Plots** to identify correlations between two numerical variables (e.g., Price vs. Demand).

SEABORN & MATPLOTLIB VIA AI

Automating Aesthetics

Asking AI to use **Seaborn** automatically applies professional color palettes and statistical styling that would take dozens of manual code lines.

- 🎨 Default color mapping for categories
- 📊 Built-in multi-plot capabilities (Faceting)
- ⚙️ High-level interface for statistical plots



STANDARD VISUALIZATION TYPES

Foundational Plots

AI excels at writing boilerplate code for:

- Histograms for distributions
- Box plots for outlier detection
- Heatmaps for correlation matrices

Advanced Refinement

Once the base plot is generated, prompt for:

- Custom HEX color codes
- Axis label rotation and font sizing
- Interactive legends and titles

Prompt Optimization

Strategies for the free AI tier limitations

MANAGING PROMPT LIMITS

1
MESSAGES /
HOUR
0

Efficiency is Key

Free AI tiers often have strict hourly caps. To avoid being locked out mid-analysis, your prompts must be surgical. One "Perfect" prompt is worth five "Corrective" prompts.

CONCISE PROMPTING STRATEGIES

Inefficient Strategy	Elite AI Strategy	Impact
Fixing one error at a time	Provide the error + full code	Saves 3-4 messages
Generic "Make a chart"	"Plot Col A vs Col B using Seaborn"	Zero hallucinations
Pasting full datasets	Paste column names & head(3) only	Preserves token context

Hands-On Exercise

Building a Sales Performance Dashboard

SALES BAR CHART

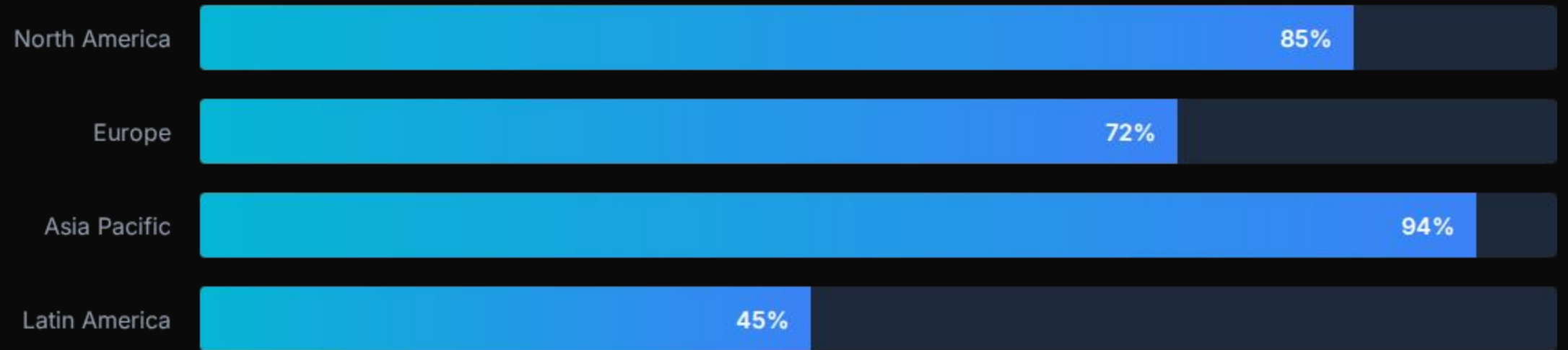
The Challenge

Instruct the AI to generate a **clean, labeled bar chart** that shows sales performance across different regions.

Requirements:

- Use Seaborn aesthetics
- Rotate x-axis labels by 45 degrees
- Add a meaningful title and axis labels

EXAMPLE: REGIONAL PERFORMANCE



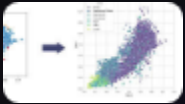
Expected output: A clean, communicative visualization identifying leading market segments.

Questions?

Next Steps: Moving to Advanced Formatting

ai-training-portal.internal | support@datacorp.com

IMAGE SOURCES



<https://towardsdatascience.com/wp-content/uploads/2022/09/1SogzmZufTBnkymvjEIU-8Q.png>

Source: towardsdatascience.com



<https://slidemodel.com/wp-content/uploads/22195-01-sales-performance-dashboard-powerpoint-template-16x9-1.jpg>

Source: slidemodel.com