

ELLYPUNK

Foundation

WEEKLY DIGEST / E101

14-20 September 2026



This week

14-20 September 2026

Available archived editions, in their original date order.

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ELLY EXPLAINS: WHAT IS AN API?

**API = Application
Programming Interface**

An API gives software
a defined way to use
another piece of
software.

FOR PEOPLE

You tap a button
in an app.

FOR SOFTWARE

The app uses an API
to ask for data
or an action.



OUR GOAL

Explain a request,
a response and
the rules between
them.

Think of a cafe menu;
it tells you what you
can ask for, not how
the kitchen works.

Cafe Menu

Espresso	
Latte	
Cappuccino	
Mocha	
Iced Coffee	



Not every API uses
the internet. This lesson
focuses on web APIs.



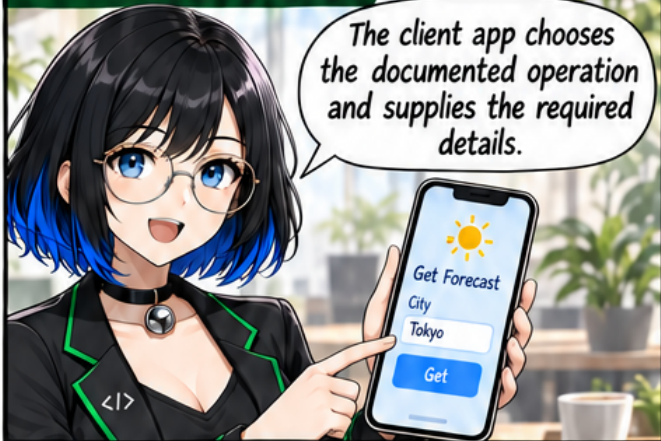
ONE REQUEST, ONE RESPONSE

Many web APIs use HTTP.

A response includes a status and may include data.

1 • CHOOSE

The client app chooses the documented operation and supplies the required details.



2 • REQUEST

It sends a request to the service. Here, it asks for a city's forecast.



3 • PROCESS

The service checks the request and permissions, then does the work it allows.



4 • RESPONSE

It returns a result or an error. The app decides how to show it.



OUR GOAL

An API is a defined interface—not unrestricted access to the whole system.



Many web APIs use HTTP. a response includes a status and may include data.



READ THE RULES FIRST

An API's documentation explains its contract.



OPERATION

What can I ask it to do, and where do I send the request?



INPUT

Which details are required? Check names, formats and units.



ACCESS

Does it require authentication? What is this caller allowed to do?



OUTPUT

What data or errors can come back? Are there usage limits?



SOME USEFUL WORDS



Endpoint: the address for an API operation.
Authentication: checking who is calling.
Authorisation: deciding what they may do.



Keep credentials private. Send only the data the task needs.



CHECK THE MEANING, NOT JUST SUCCESS

Even when an API succeeds, you need to check that the data means what you expect. Let's look at a weather example!

Good
Software
Brighter
Days
♥

FICTIONAL WEATHER EXAMPLE

PROBLEM

The app shows 200°C. That cannot be right for this forecast!

 **200°C**
Sunny

ACTION

The documentation says the temperature is already in Celsius.

API Documentation

Weather Data

Temperature
Returned in
Celsius (°C).

CHECK

The response says 20°C, but the app multiplied the value by ten.

✓ Successful response

 Temperature: 20
Unit: °C

IMPROVEMENT

Remove the extra multiplication. Display 20°C.

 **20°C**
Sunny

Correct unit,
useful result!

KEY TAKEAWAY

A successful status does not prove your app interpreted the data correctly.



SMALL REQUEST. CLEAR CONTRACT.



APIs connect software through defined rules. Some read data. Others change it—know which you are using.

YOUR FIRST API CHECKLIST

- 1 • Find the official documentation.
- 2 • Choose one small, allowed operation.
- 3 • Check inputs, access and usage limits.
- 4 • Check the response status, fields and units.
- 5 • Plan what the app shows when a request fails.

REQUEST → SERVICE → RESPONSE

REQUEST

SERVICE

RESPONSE



ELLY'S FINAL TIP



Don't just ask, 'Did it work?' Ask, 'Did we understand the answer?'



Further reading:
MDN API glossary ·
MDN HTTP overview ·
Microsoft API design



ELLY EXPLAINS:

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THREE ROLES, ONE DATA TEAM

Data engineers, data scientists and data analysts turn data into useful outcomes—with different main focuses.

DATA ENGINEER



Build reliable data systems.

DATA SCIENTIST



Investigate problems with statistics and models.

DATA ANALYST



Explain data to support decisions.

Roles overlap. Job titles vary by organisation.

NEXT: WHAT EACH ROLE DOES →

ELLY EXPLAINS:

WHAT EACH ROLE DOES

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DATA ENGINEER



QUESTION:

Can people trust and use the data?



WORK:

Connect sources, build pipelines, monitor quality.



OUTPUT:

Reliable datasets and data services.



All three need communication and data-quality skills.

DATA SCIENTIST



QUESTION:

What patterns can we test or model?



WORK:

Explore data, run experiments, evaluate models.



OUTPUT:

Tested findings, forecasts or models.



DATA ANALYST



QUESTION:

What does the data tell us?



WORK:

Define metrics, analyse trends, explain findings.



OUTPUT:

Reports, dashboards and recommendations.



NEXT: ONE CAFE, THREE CONTRIBUTIONS →

ELLY EXPLAINS:

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ONE CAFE, THREE CONTRIBUTIONS

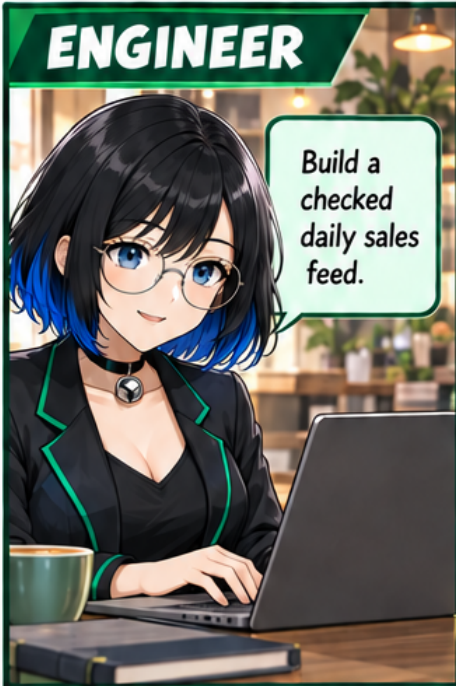
FICTIONAL EXAMPLE

GOAL: Plan how many cakes to bake.

PAST SALES

MONDAY:	20 cakes
TUESDAY:	30 cakes
TOTAL:	50 cakes

ENGINEER



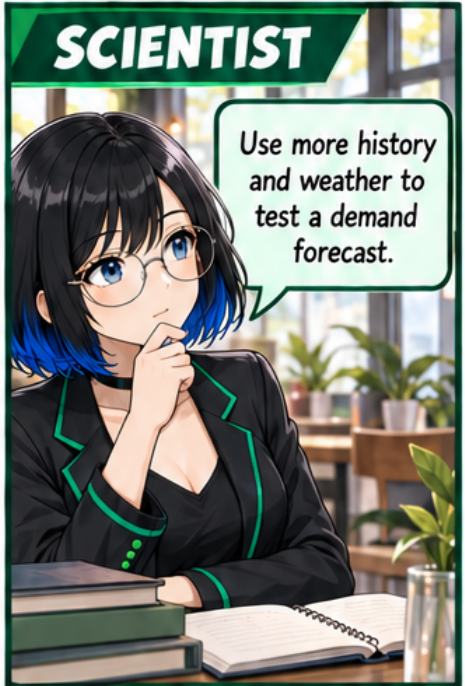
Build a checked daily sales feed.

ANALYST



Report 50 cakes sold across the two days.

SCIENTIST



Use more history and weather to test a demand forecast.



Two days alone do not justify a reliable forecast.

NEXT: HOW THEY WORK TOGETHER ➔

ELLY EXPLAINS:

DIFFERENT FOCUS, SHARED SKILLS

ENGINEER: DATA FOUNDATION



Make data available and dependable.

ANALYST: DECISION SUPPORT



Explain findings and their limits.

SCIENTIST: INVESTIGATION & MODELLING



Test ideas and measure uncertainty.

WORK TOGETHER



1 Agree the question.

2 Check data quality and privacy.

3 Share feedback and improve.

MYTH: THESE ARE THREE CAREER RANKS.



REALITY: Different specialties—not a ladder.

MYTH: ONLY SCIENTISTS USE STATISTICS.



REALITY: Skills and tools overlap across roles.

NEXT: RECAP AND CHECK →

ELLY EXPLAINS:

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YOUR DATA-TEAM CHEAT SHEET



ENGINEER:
BUILD THE
FOUNDATION



SCIENTIST:
TEST AND MODEL



ANALYST:
EXPLAIN AND INFORM



TINY GLOSSARY



Pipeline: steps that move and transform data.



Metric: a defined measure, such as daily sales.



Model: a simplified representation used to study a problem.



QUICK CHECK

The cafe needs a dependable daily sales feed.
Whose main focus fits best?

ANSWER: DATA ENGINEER

The whole team still checks quality and shares context.

Choose a role by the work you enjoy—not the title alone.



NEXT: KEEP EXPLORING →

ELLY EXPLAINS: WHAT IS A DATABASE?

A database is an organised collection of data.

Database software helps us store, find and change that data.

EVERYDAY DATA

A café needs to remember customers and orders.



ONE SHARED STRUCTURE

A relational database organises related data into tables.

CUSTOMERS			ORDERS		
Customer ID	Name	Email	Order ID	Customer ID	Item

OUR GOAL

Recognise a table, a row, a column and a key.

Cafe Menu

Espresso
Latte
Cappuccino
Mocha
Iced Coffee



Not all databases use tables. This lesson focuses on relational databases.



TABLES, ROWS AND COLUMNS

We can store information in a table. A table has rows and columns, like a spreadsheet.

ONE ROW = ONE DRINK

A column describes one kind of detail.

A row is one record.

Drink ID	Name	Size (ml)
1	Espresso	30
2	Latte	250
3	Tea	300

A value sits where a row and column meet.

DATA TYPES

Choose suitable types: text for names, numbers for quantities.

CLEAR MEANING

Give each column a clear name. Label measurement units.



These drink sizes are fictional example data.



Good Data Better Days





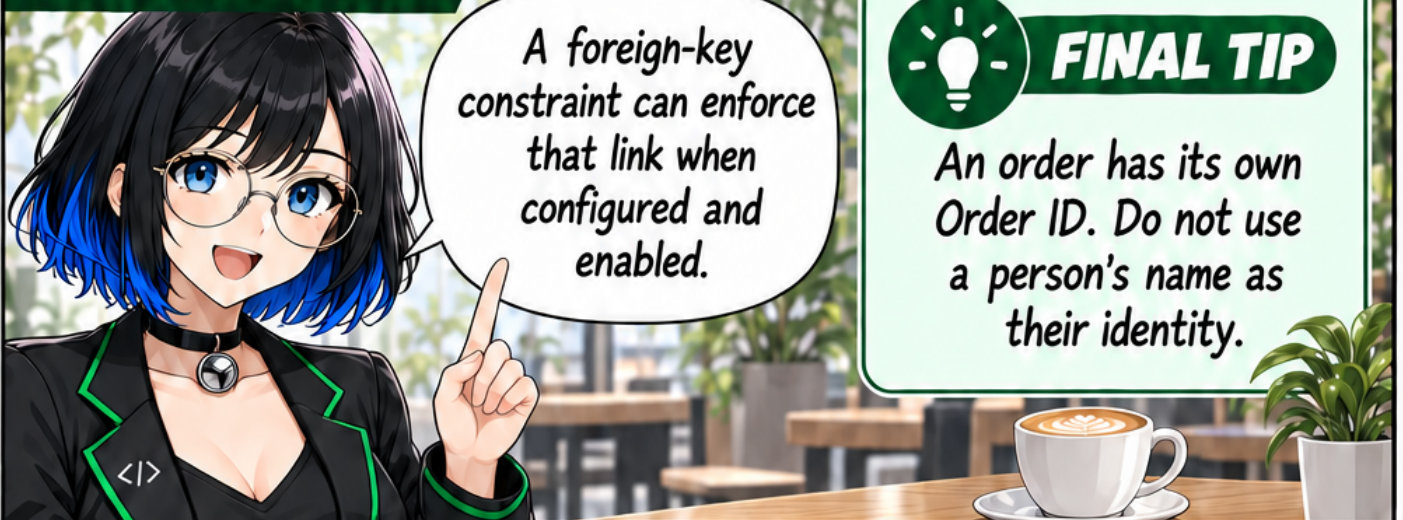
LINKING TABLES

CUSTOMERS		MATCHING IDs	ORDERS	
Name	Customer ID		Customer ID	Order ID
Mia	7	—	7	101
Mia	8		8	102

Customer ID is the primary key in Customers.

In Orders, Customer ID refers to a customer.

GUARDRAIL



TWO MIAS. ONE CORRECT ORDER.

People can have the same name.
A unique ID helps us know
exactly which one we mean.

1 • PROBLEM

Order 102 says
only 'Mia'.
Which customer
is it?

Order 102
Mia

2 • ACTION

Confirm the intended
customer, then store
Customer ID 8
with the order.

Order ID: 102
Customer ID: 8

3 • CHECK

Does Customer ID 8
exist in Customers?
Yes: Mia, ID 8.

Customer ID: 8
Name: Mia ✓

4 • IMPROVEMENT

Order 102 now points
to the intended customer,
even when names repeat.

ORDER 102
Customer ID: 8

CUSTOMER 8
Name: Mia

CHECK THE MEANING

A valid ID can still be
the wrong person's ID.
Confirm the real-world match.

Same Names
Different People
Use IDs
Check the Meaning
♥



GIVE DATA A CLEAR HOME

Tables organise records. Keys identify them and connect related facts.

Good Data
Brighter Days

YOUR FIRST DATABASE CHECKLIST

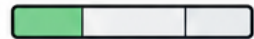
- 1 What does one row represent?
- 2 What does each column mean?
- 3 Which key identifies each row?
- 4 Which records link together?
- 5 Which rules protect those links?

RECAP: KEY IDEAS

TABLE

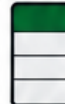
A collection of records.

ROW



One record.

COLUMN



One kind of detail.

PRIMARY KEY



Uniquely identifies a row.

A foreign key links to a referenced key.

ELLY'S FINAL TIP

Before choosing software, explain your data in plain English.



Further reading:

- Microsoft Learn: relational data
- PostgreSQL: concepts
- SQLite: foreign keys

Good Data
Builds
Better
Ideas

