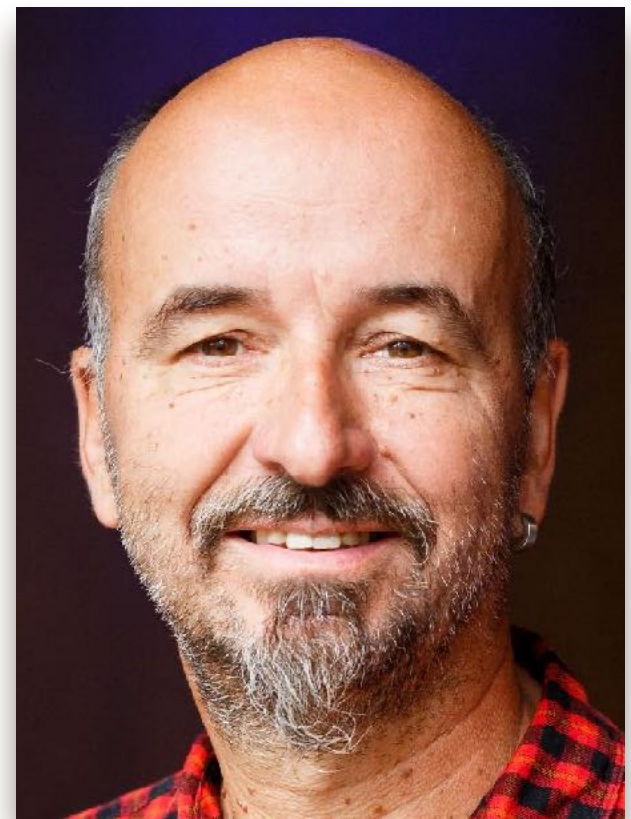


The Power of Simplicity

Crafting Durable Software Systems



Bertrand Delacrétaz

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Former Board Member, Apache Software Foundation

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grep.codeconsult.ch

*images: Adobe Stock & Firefly, unless otherwise mentioned
revision 2025-03-12C*



3
chapters

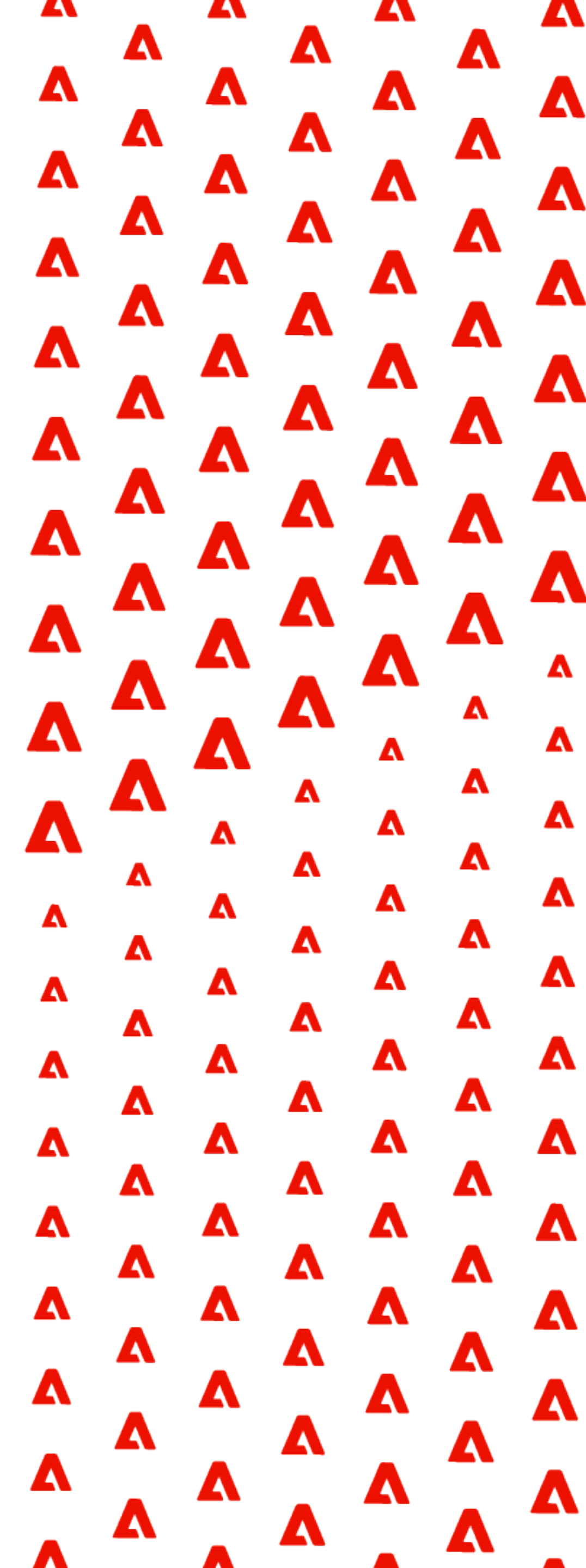
Beautiful Simplicity

Examples

But how?

1

Beautiful Simplicity





Beautiful & Obvious Simplicity

Nothing
to remove?



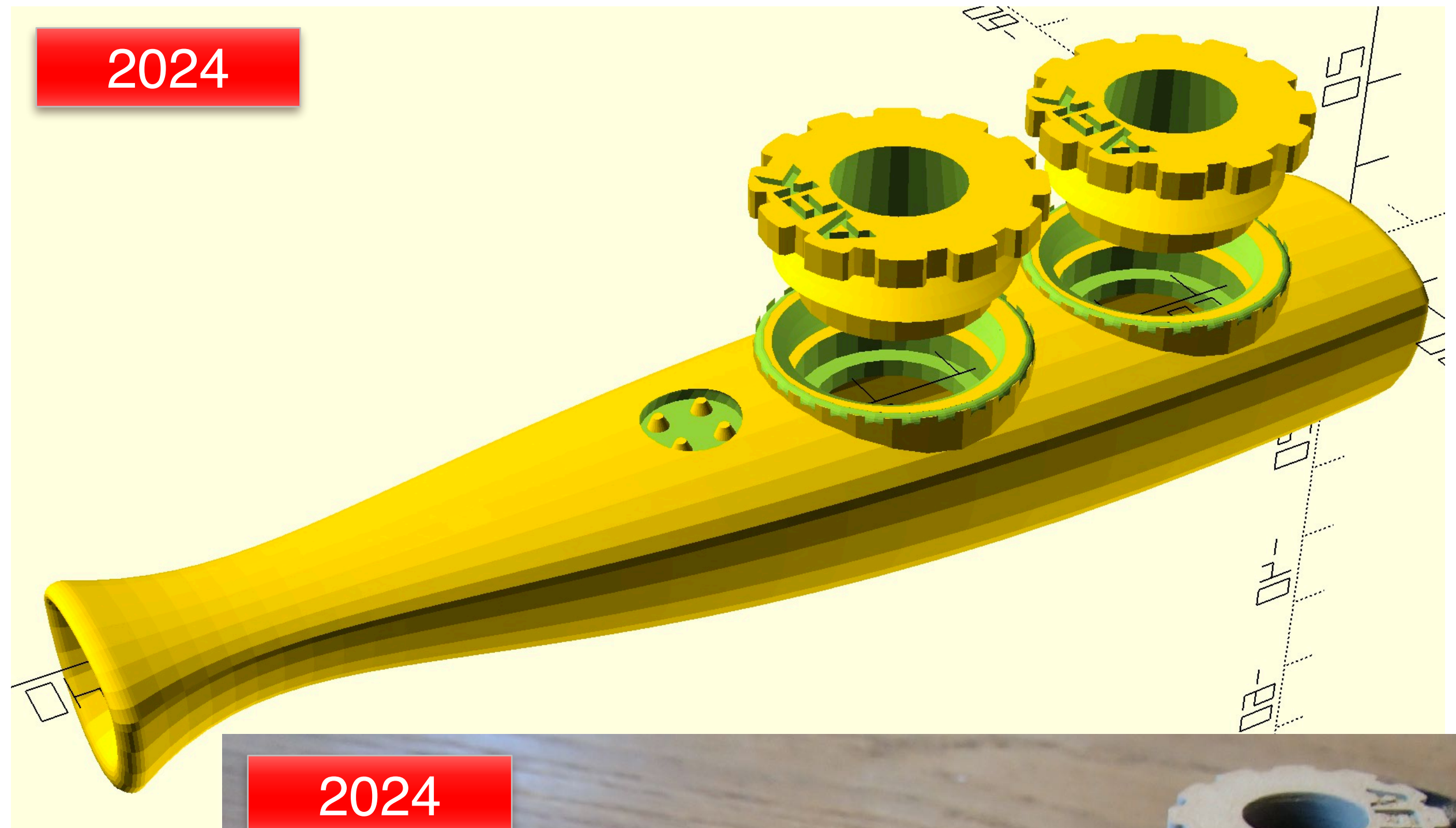


Kazoo Minimalist Effective

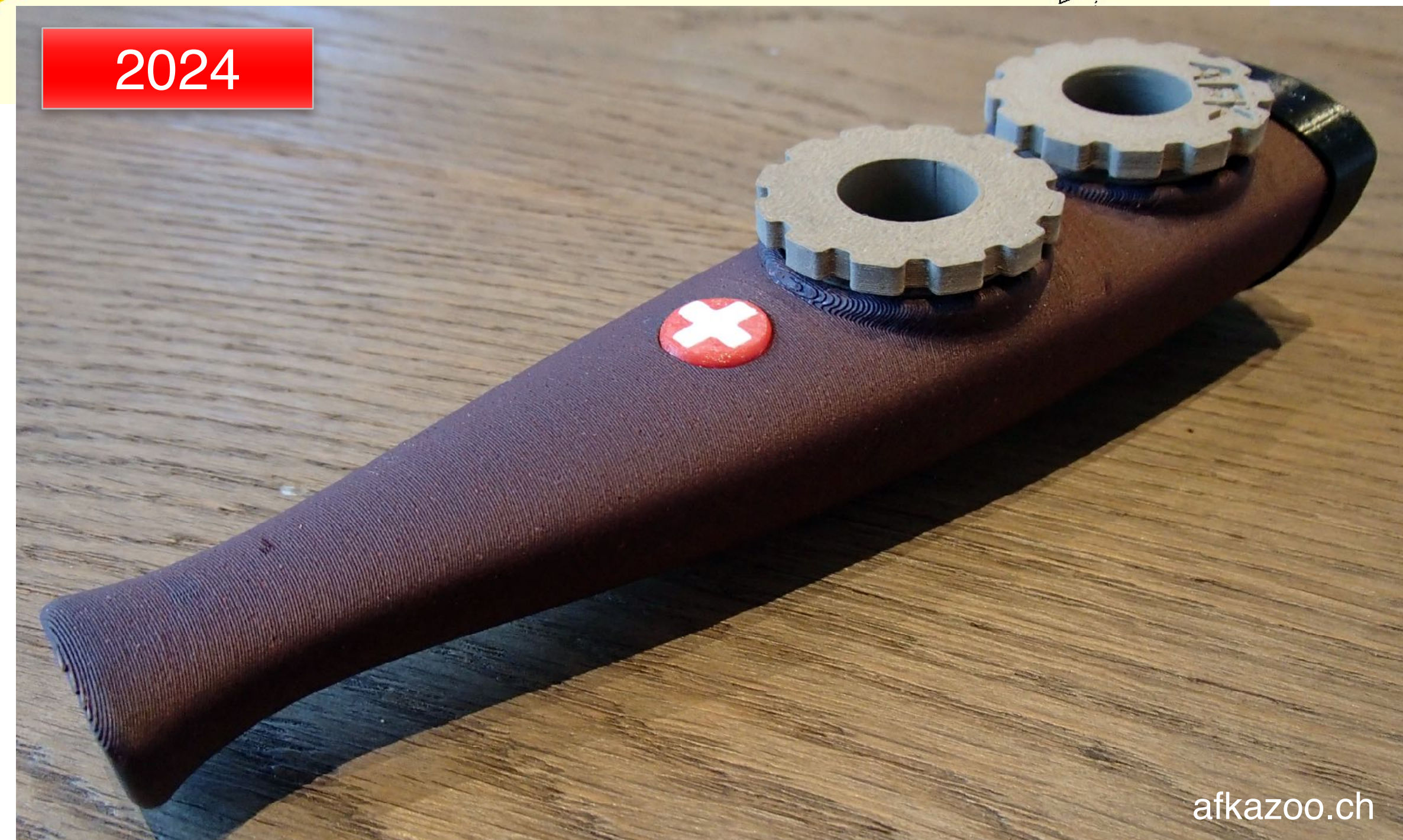
Simple, but not simplistic..



1930



2024



2024

Simple, but not simplistic!

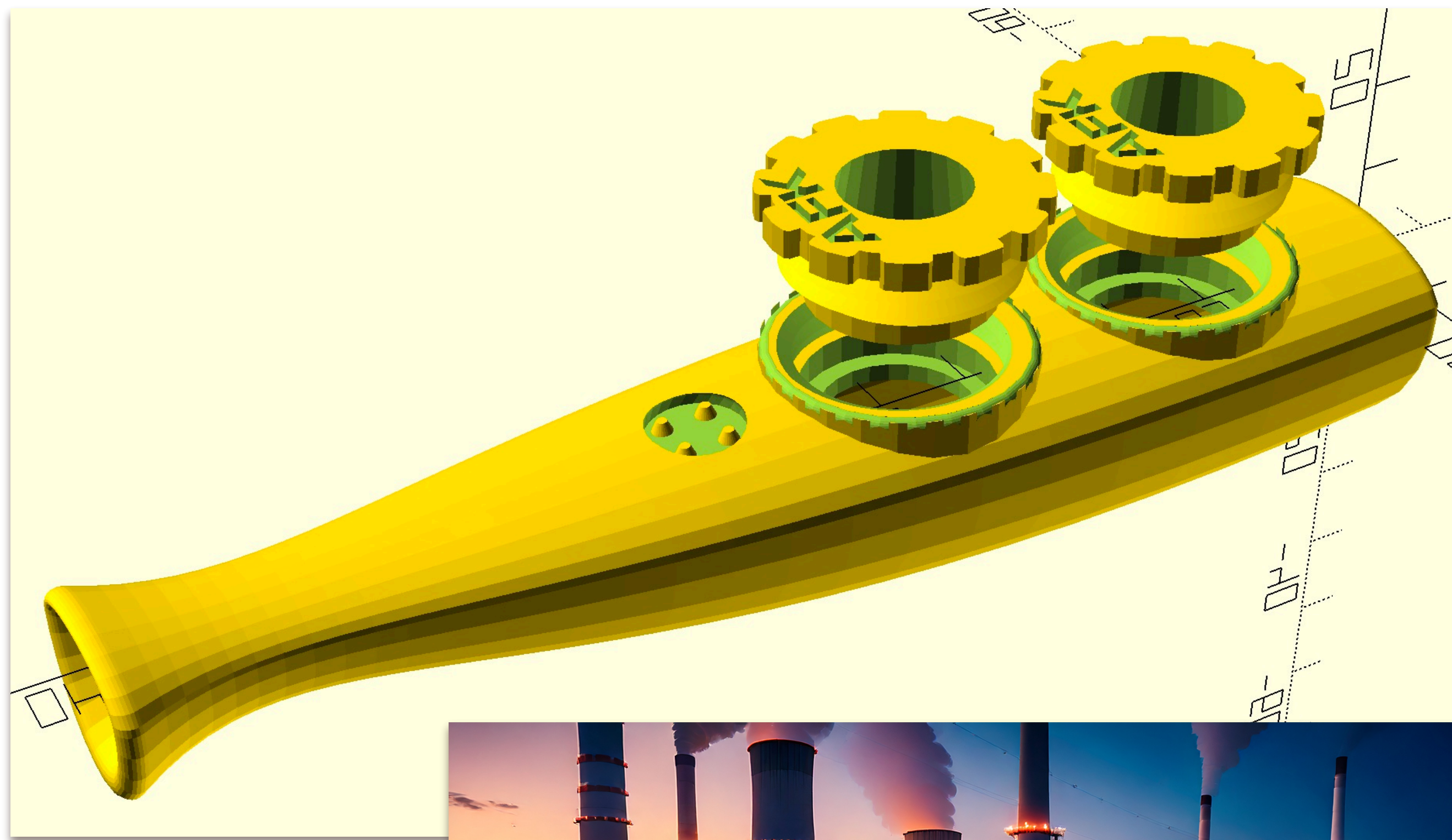
SPACE & PHYSICS

Fact or Fiction?: NASA Spent Millions to Develop a Pen that Would Write in Space, whereas the Soviet Cosmonauts Used a Pencil

**SCIENTIFIC
AMERICAN**



How much power do you need?



Splendid, efficient & appropriate simplicity

2

Examples

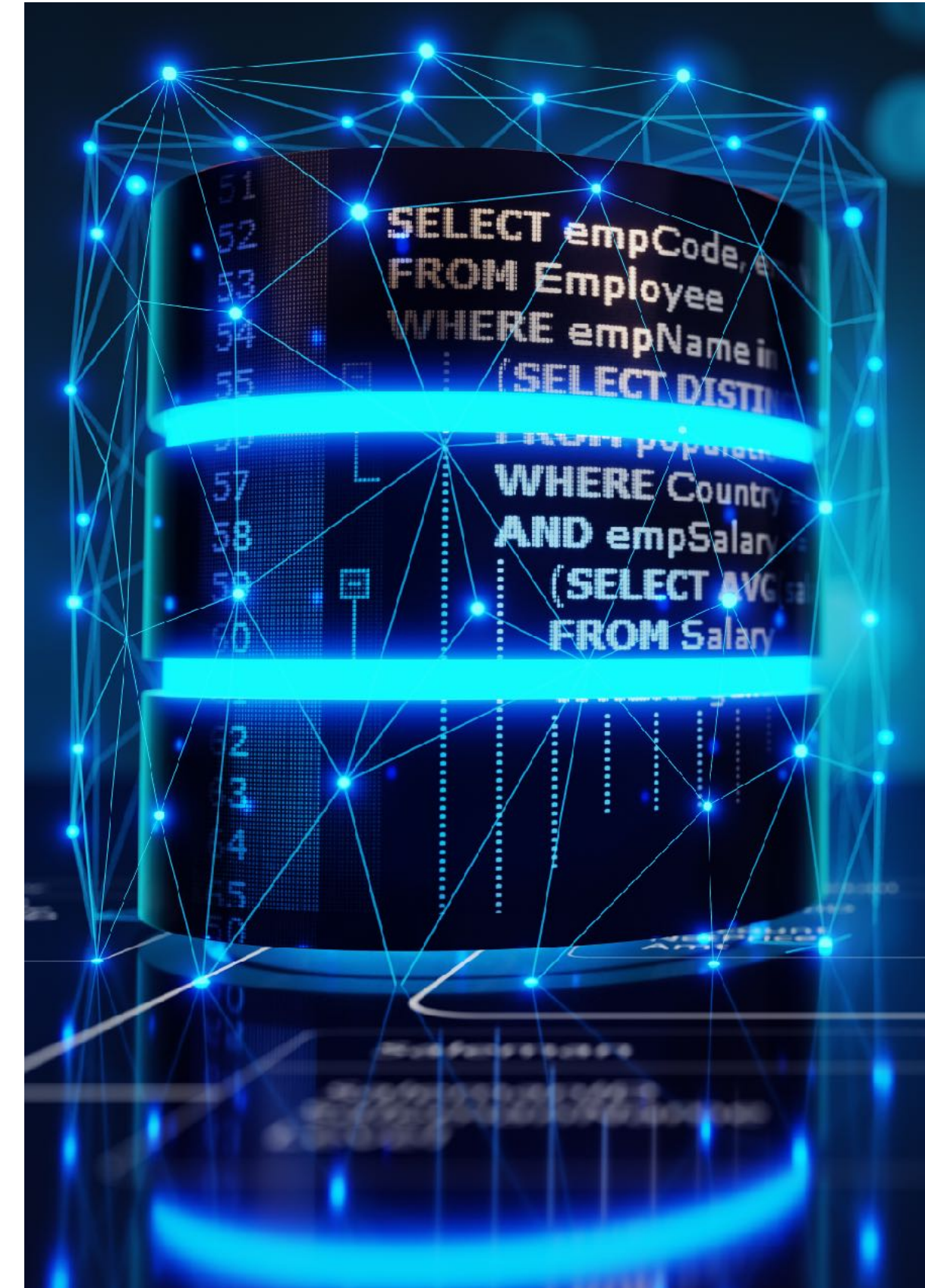


Continuous weather data acquisition?



A few hundred stations

continuous data



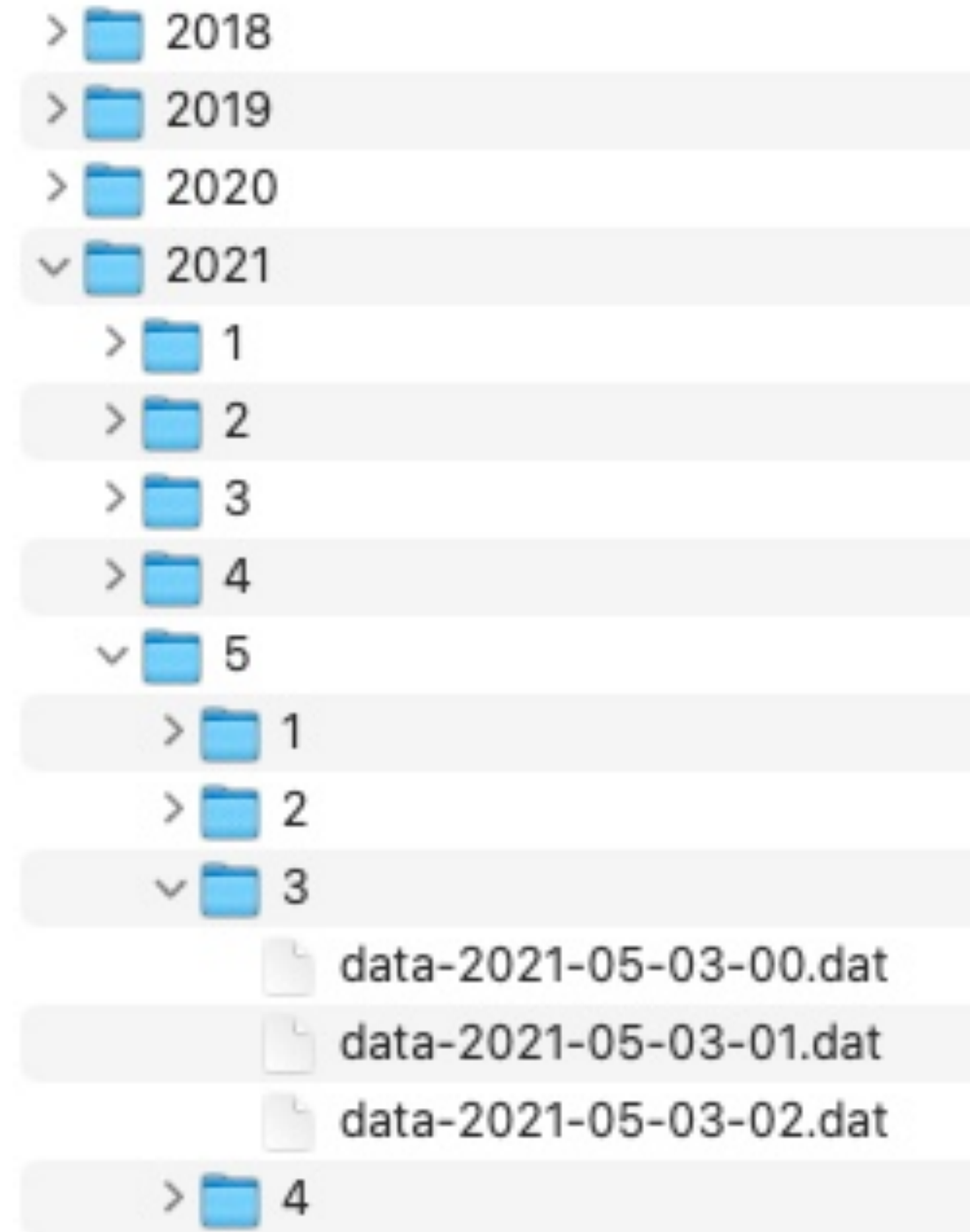
Simple storage & queries?

Continuous weather data acquisition!



A few hundred stations

continuous data



Simple storage and queries:
Chronological folders & files

Robust digital audio recording?

Back in 1999..



continuous audio recording
less than 15 seconds lost, whatever happens

Robust digital audio recording??

Back in 1999..

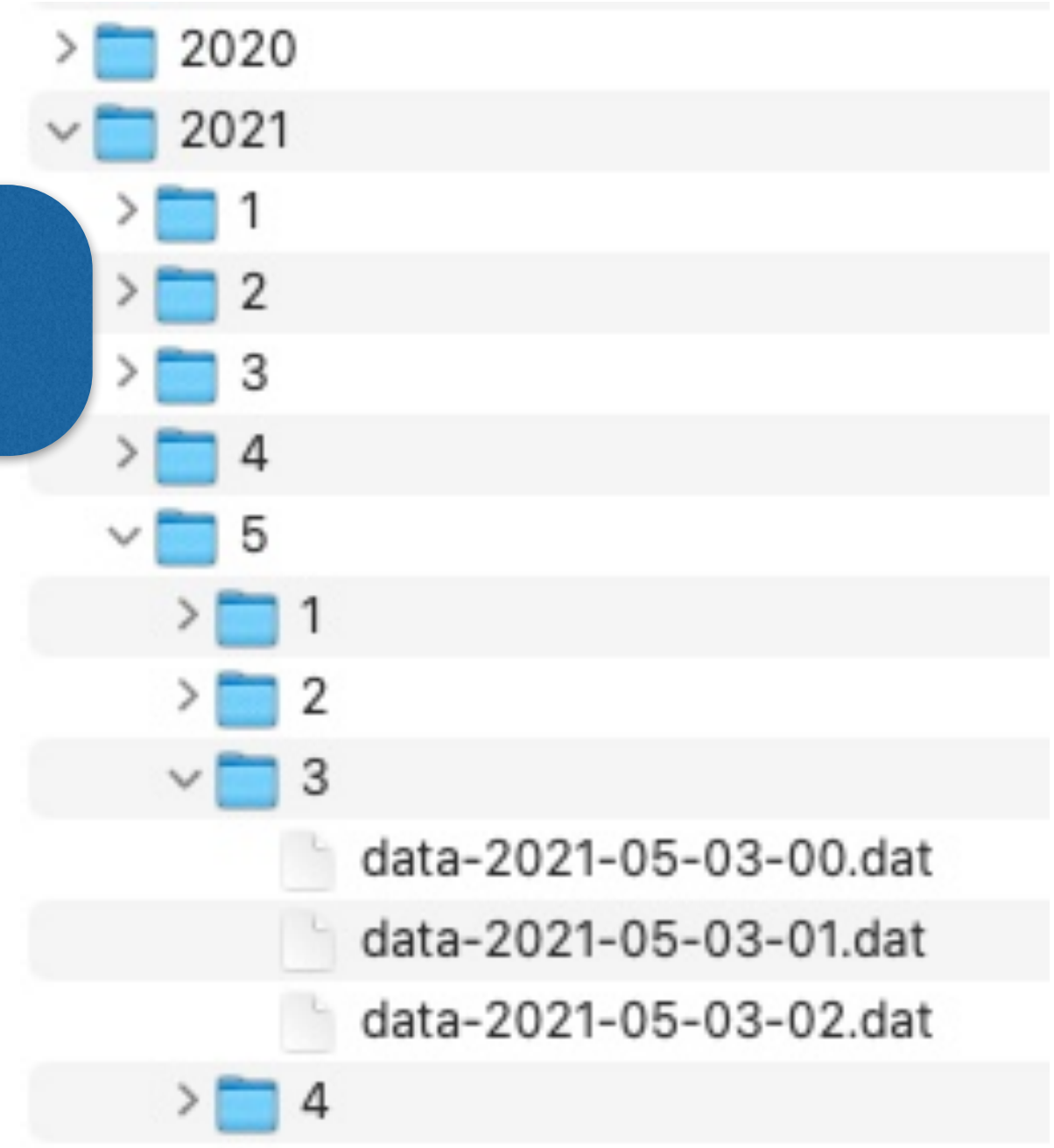
complicated?
really?

Robust digital audio recording!

86 lignes of code - 3 months of work!



```
s = UDP socket
While(s is open) {
  Wait for packet
  Packet matches our filter?
  If yes:
    Compute storage path from T
    Append packet to storage file
}
```



Web Components for a commerce page?

https://opensource.adobe.com/web-platform-zoo

Cart: 7 products, 38 items, USD 540 - [Cart contents](#)



Blue bottle

+ 3 -

USD 17: 3 in cart → USD 51

This one is really blue



Symmetric knife

+ 11 -

USD 21: 11 in cart → USD 231

Not really, it's just marketing



Fantastic bottle

+ 4 -

USD 19: 4 in cart → USD 76

This bottle is really fantastic



Super bread knife

+ 0 -

USD 8: 0 in cart → USD 0

Stainless steel, the works!



East white

+ 11 -

USD 5: 11 in cart → USD 55

Eastern is bestern



Soft South Red

+ 5 -

USD 15: 5 in cart → USD 75

Soft but not weak!



Kitchen knife

+ 2 -

USD 10: 2 in cart → USD 20

A must for every kitchen



White from the South









+ 0 -

USD 6: 0 in cart → USD 0

Web Components for a commerce page?

<https://opensource.adobe.com/web-platform-zoo>

STATUS Cart: 7 products, 38 items, USD 540 - [Cart contents](#)

IMAGE	PRODUCT	TITLE	SLIDER	PRICE	TEXT		
				Blue bottle	Symmetric knife	Fantastic bottle	Super bread knife
				+ 3 -	+ 11 -	+ 4 -	+ 0 -
				USD 17: 3 in cart → USD 51	USD 21: 11 in cart → USD 231	USD 19: 4 in cart → USD 76	USD 8: 0 in cart → USD 0
				<i>This one is really blue</i>	<i>Not really, it's just marketing</i>	<i>This bottle is really fantastic</i>	<i>Stainless steel, the works!</i>
				East white	Soft South Red	Kitchen knife	White from the South
				+ 11 -	+ 5 -	+ 2 -	+ 0 -
				USD 5: 11 in cart → USD 55	USD 15: 5 in cart → USD 75	USD 10: 2 in cart → USD 20	USD 6: 0 in cart → USD 0
				<i>Eastern is bestern</i>	<i>Soft but not weak!</i>	<i>A must for every kitchen</i>	

8 components?

Web Components for a commerce page!

https://opensource.adobe.com/web-platform-zoo









STATUS Cart: 7 products, 38 items, USD 540 - [Cart contents](#)

AI 1 Y STATUS (INVISIBLE)

simple but not simplistic!

INC-DEC

HTML TEMPLATE

 Blue bottle + 3 - USD 17: 3 in cart → USD 51 <i>This one is really blue</i>	 Symmetric knife + 11 - USD 21: 11 in cart → USD 231 <i>Not really, it's just marketing</i>	 Fantastic bottle + 4 - USD 19: 4 in cart → USD 76 <i>This bottle is really fantastic</i>	 Super bread knife + 0 - USD 8: 0 in cart → USD 0 <i>Stainless steel, the works!</i>
 East white + 11 - USD 5: 11 in cart → USD 55 <i>Eastern is bestern</i>	 Soft South Red + 5 - USD 15: 5 in cart → USD 75 <i>Soft but not weak!</i>	 Kitchen knife + 2 - USD 10: 2 in cart → USD 20 <i>A must for every kitchen</i>	 White from the South + 0 - USD 6: 0 in cart → USD 0

PRODUCT LIST

4 + 1 components !

HTTP 0.9, the Original Engine of the Web



Client

GET /index.html

TCP socket



Server

https://http.dev/0.9

The **HyperText Transfer Protocol (HTTP)** is a data communications protocol and acts as the foundation of the *World Wide Web*. It was released in 1991 and originally did not have a version number associated with it. Later, it was referred to as version 0.9 ([HTTP/0.9](#)) to distinguish it from future revisions.

Table of Contents

- [1. Request methods and usage](#)
- [2. Responses](#)
- [3. Example](#)
- [4. Takeaway](#)
- [5. See also](#)

Request methods and usage

The sole HTTP request method available was HTTP **GET**, which only included a path to the resource. Unlike future revisions of the protocol, the full **URL** was not included because the protocol version, server, and port were redundant and therefore unnecessary after a connection was made. There was no support for **HTTP header fields** in the HTTP request.

Responses

The HTTP response included only the requested resource, which was always a *Hypertext Markup Language (HTML)* file. There were no **HTTP header fields** in the HTTP response, and no **HTTP status codes** existed to indicate success, error, or otherwise. If an error occurred then the server will generate a situation-specific *HTML* file that the client will present to the user to describe the issue.

Example

In the following example, the client is assumed to have connected to a server and requests an *HTML* file. The server successfully processes the HTTP request and responds with the contents.

Request

```
GET /index.html
```

Response

```
<html>
Welcome to the example.re homepage!
</html>
```

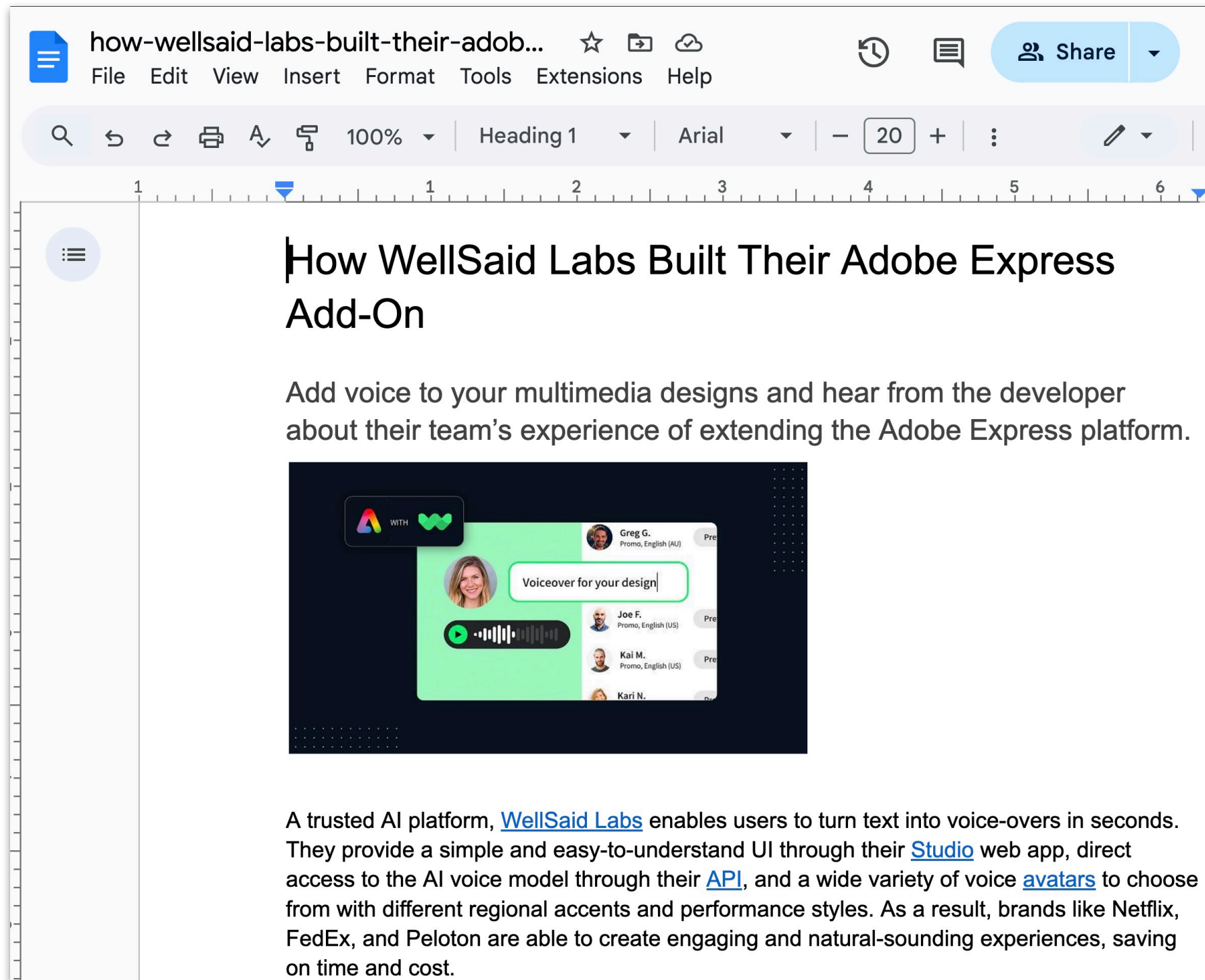
Takeaway

HTTP/0.9 was the original release and it was extremely simple, supporting only the HTTP **GET** method. Only *HTML* files were included in HTTP responses, there were no **HTTP headers**, and there were no **HTTP status codes**.

See also

- [HTTP/1.0](#)
- [HTTP/1.1](#)
- [HTTP/2](#)
- [HTTP/3](#)

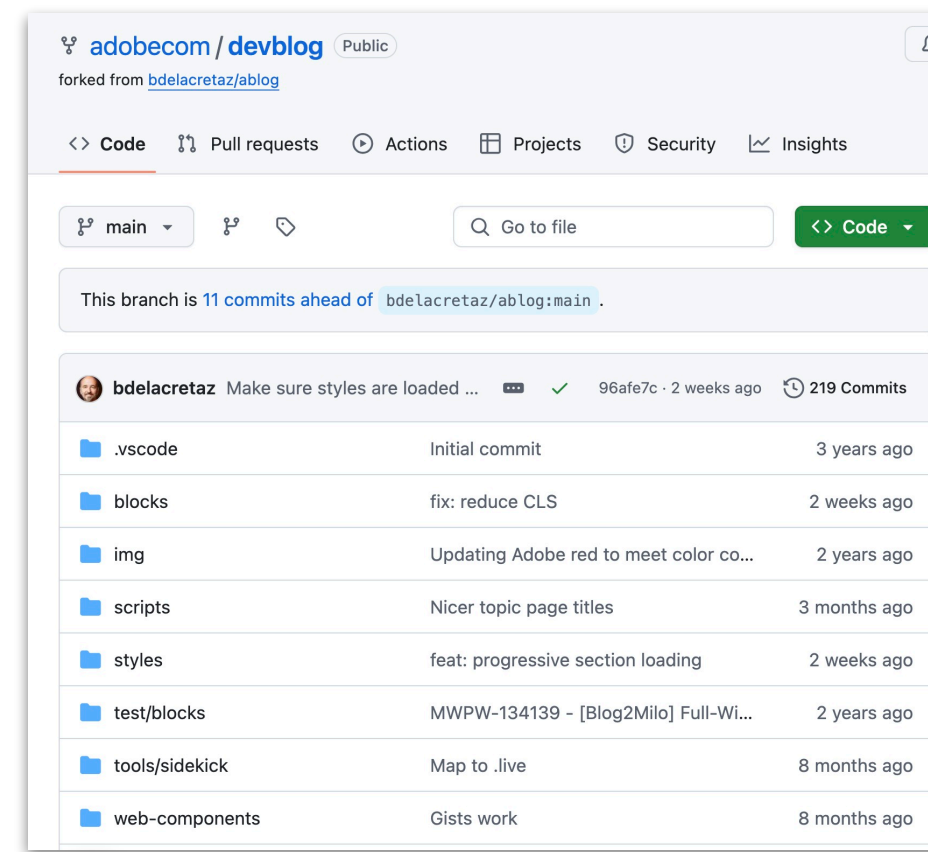
AEM (*) Edge Delivery Services



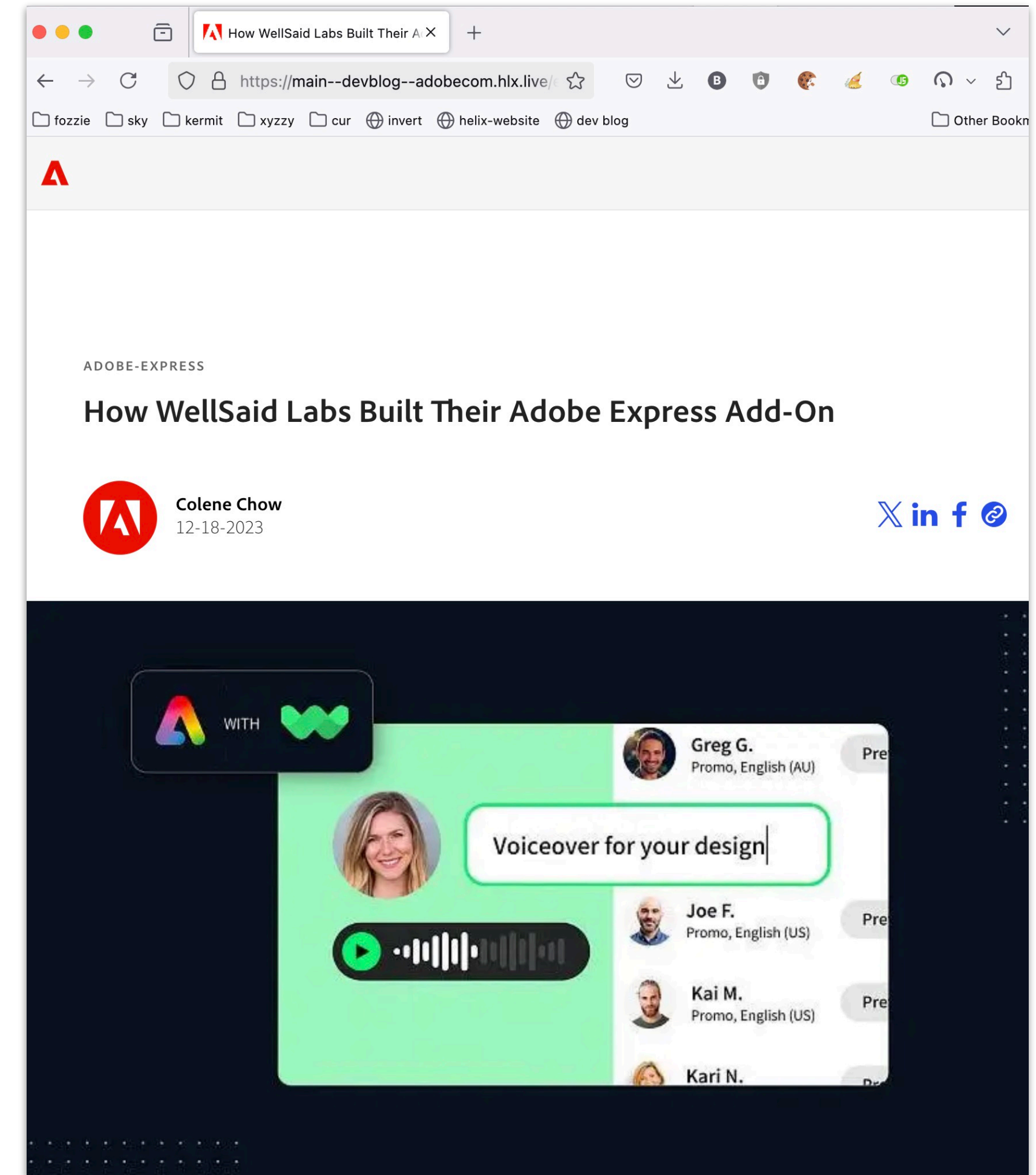
Familiar document editors



AEM Edge Delivery Services



Rendering code



Simple & Fast Website

3

But how?





**Simplicity
front & center**

The *quest* of simplicity..



Do not give up. Try again.



Measure & Evaluate



It seems that perfection is achieved not when there is nothing more to add, but when there is nothing more to take away.

Antoine de Saint-Exupéry

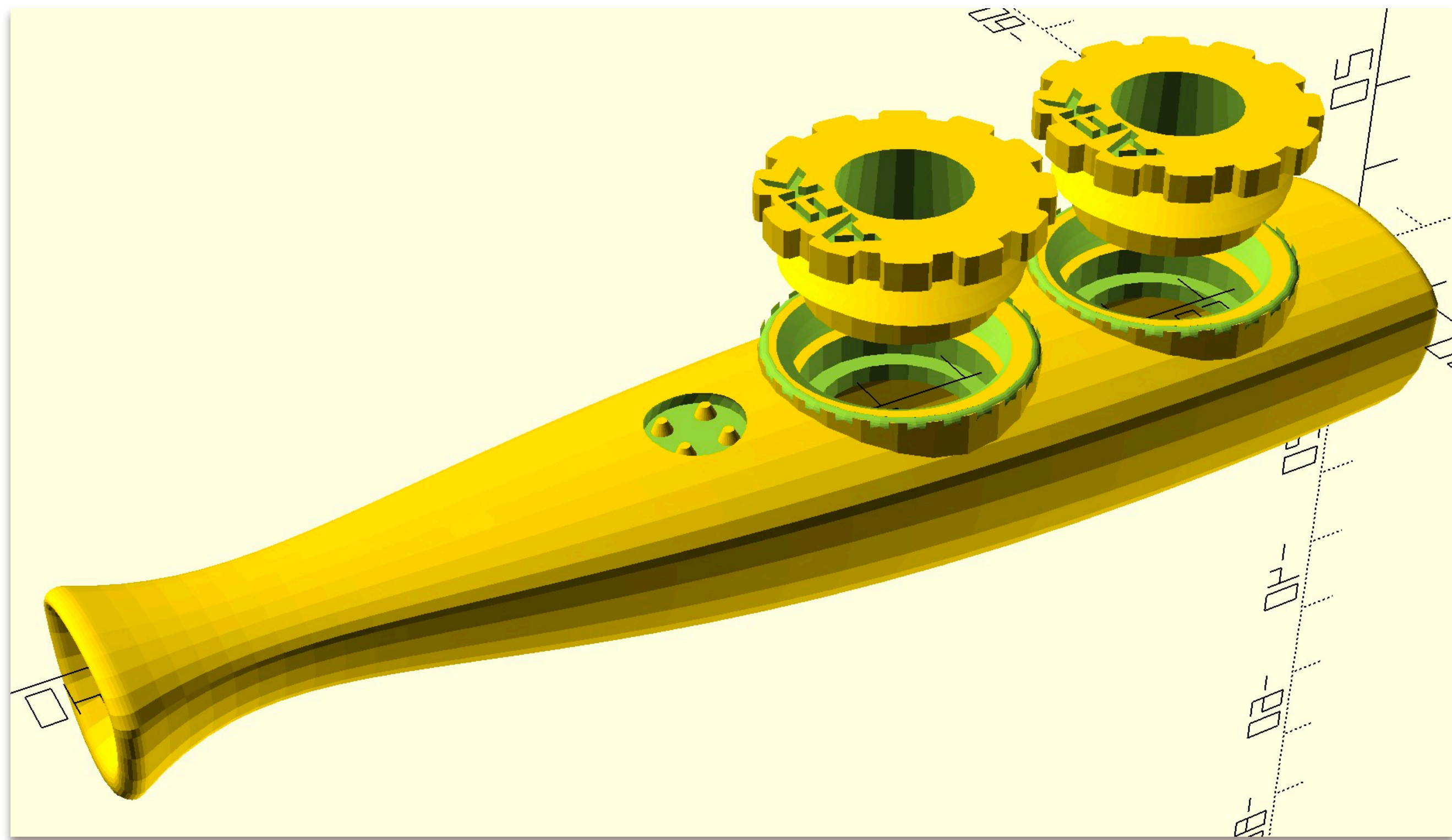
Definition of Done



Is there anything
left to remove?



Beautiful & Obvious Simplicity



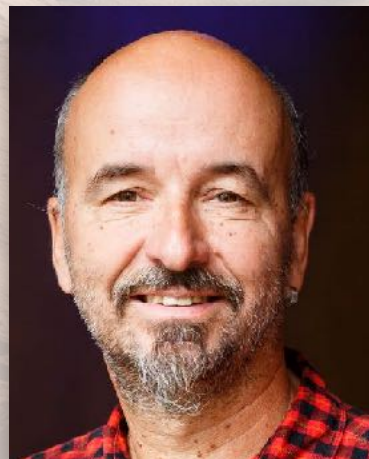
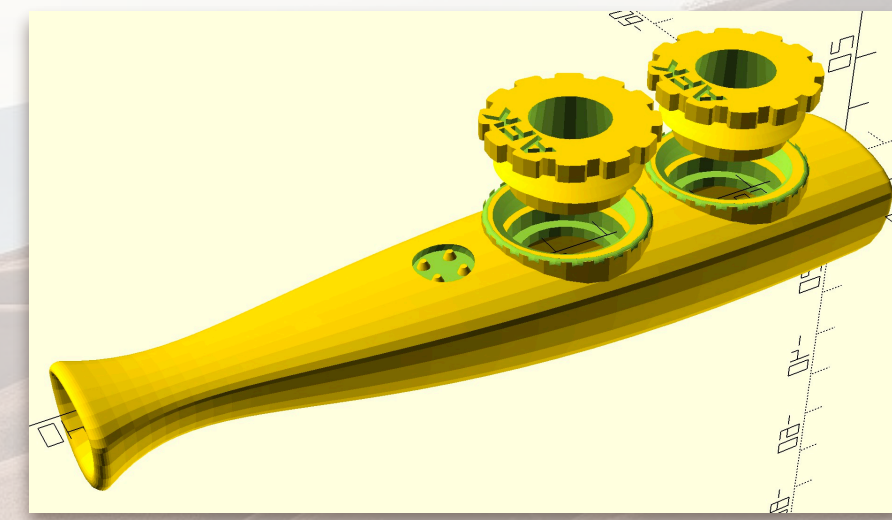
Simple, but not simplistic

4

Coda



SIMPLICITY? IMPORTANT, HARD, INTEGRABLE!



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grop.codeconsult.ch/



<https://grop.codeconsult.ch/2025/03/13/zh/>

The Power of Simplicity - devops days Zürich 2025:: Bertrand Delacrétaz

