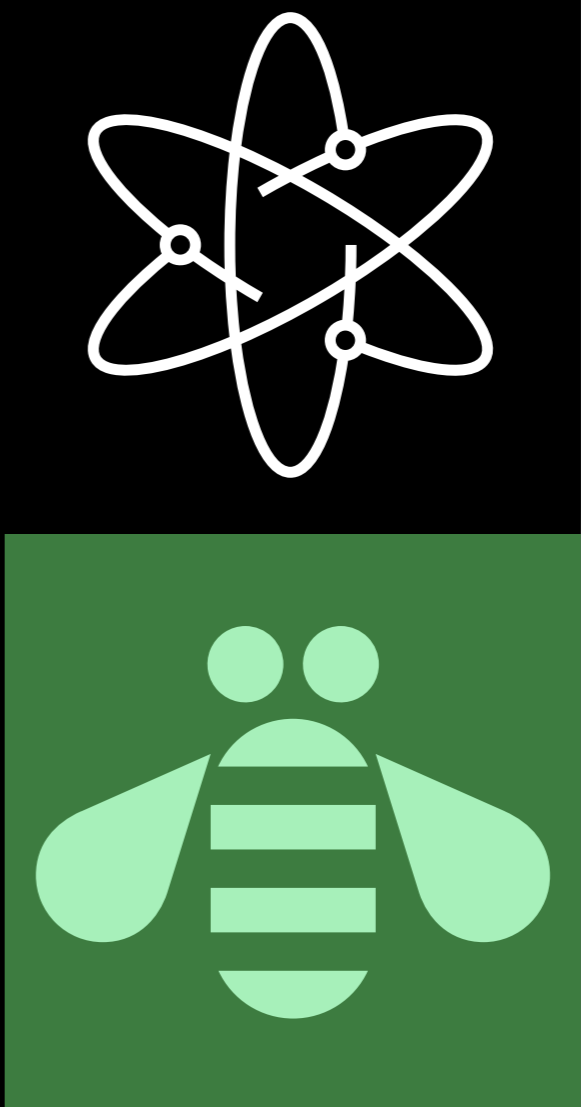


# Community Day

## From Punch Cards to VS Code

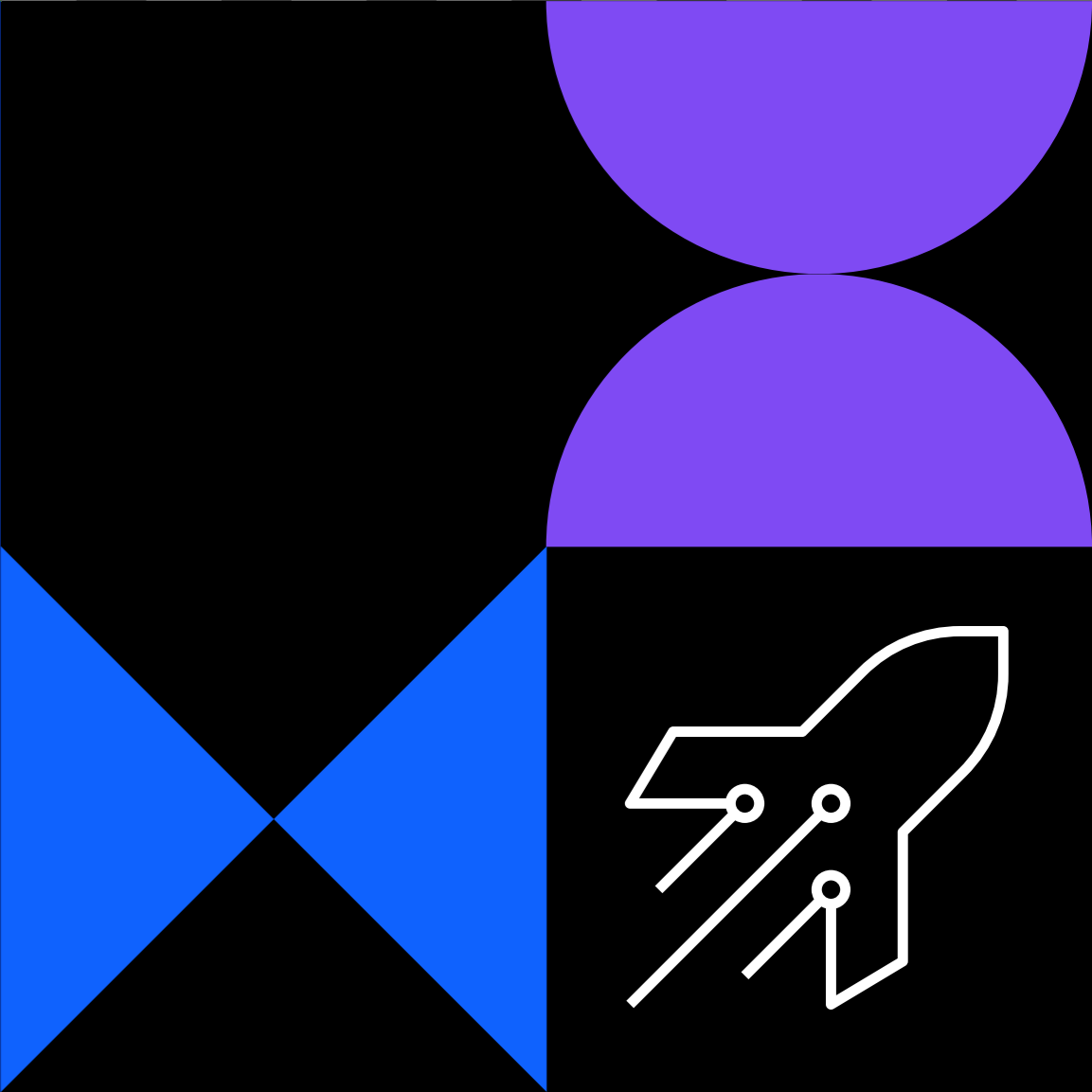
Wolfram Greis  
European Mainframe Academy AG

Orlando, FL  
October 6–9



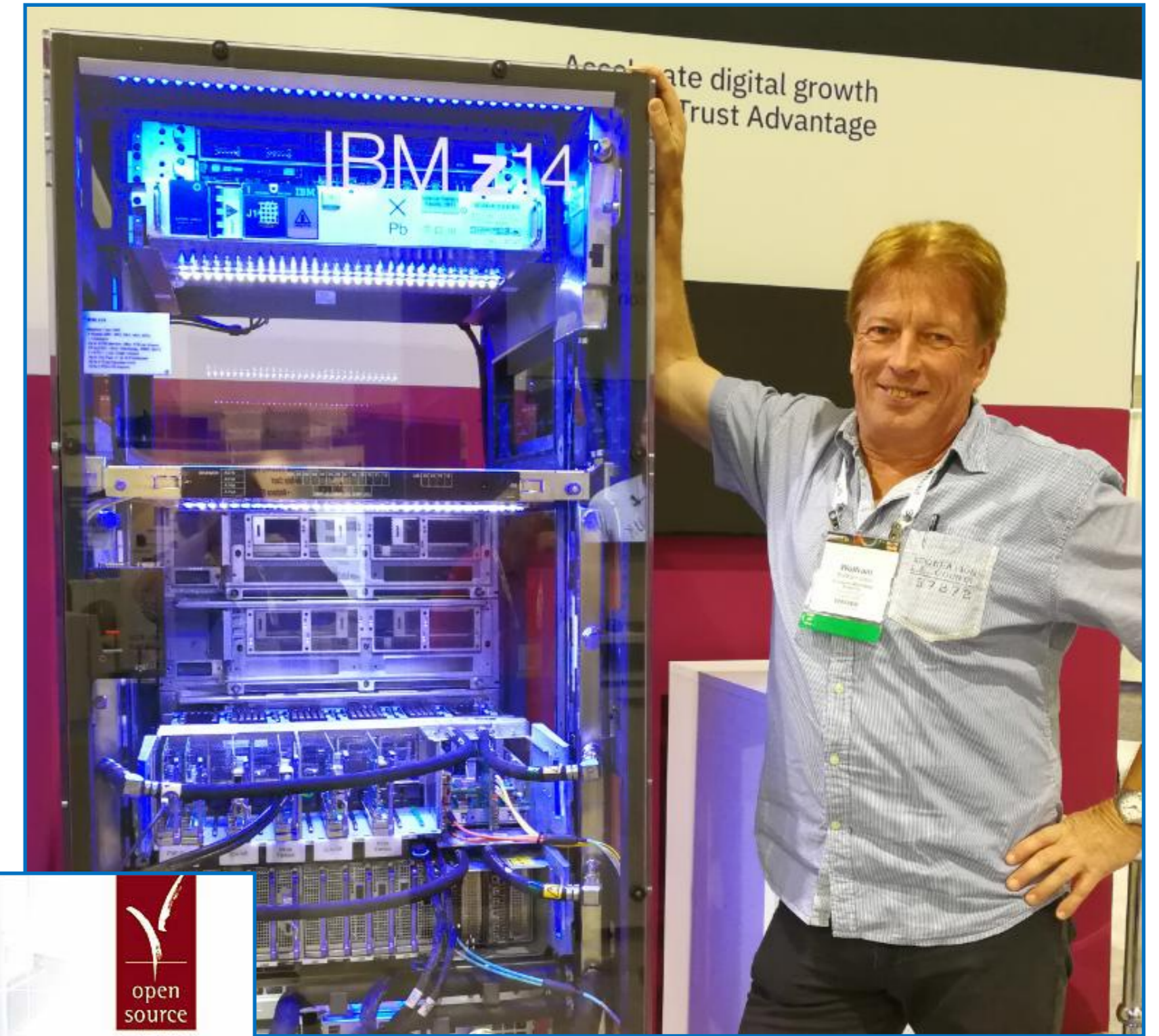
Explore.  
Build.  
Launch.

GO/



# Who is Wolfram Greis?

- **Mainframer“ since 1976** (started at Konstanz / Germany during study)
- 8 Y Siemens (PCM from Fujitsu)
- 12 Y Integrata (Partner)
- **Co-Founder and CEO of European Mainframe Academy in 2008**
- **President of Academic Mainframe Consortium e.V. [www.amc-ev.org](http://www.amc-ev.org)**
- Lectures at many Universities (and other academic institutions)  
Subject **always**: „Mainframe Topics“
- **IBM Champion since 2017**



Can you name the first computers?

Examples are:

Katherine Johnson

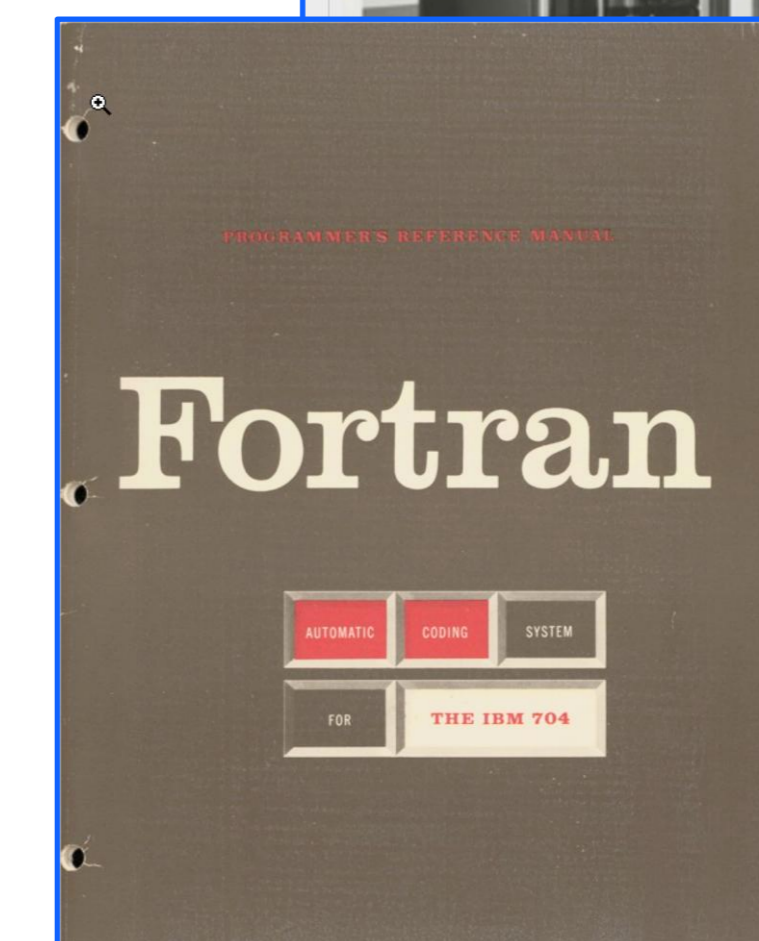
Dorothy Vaughan

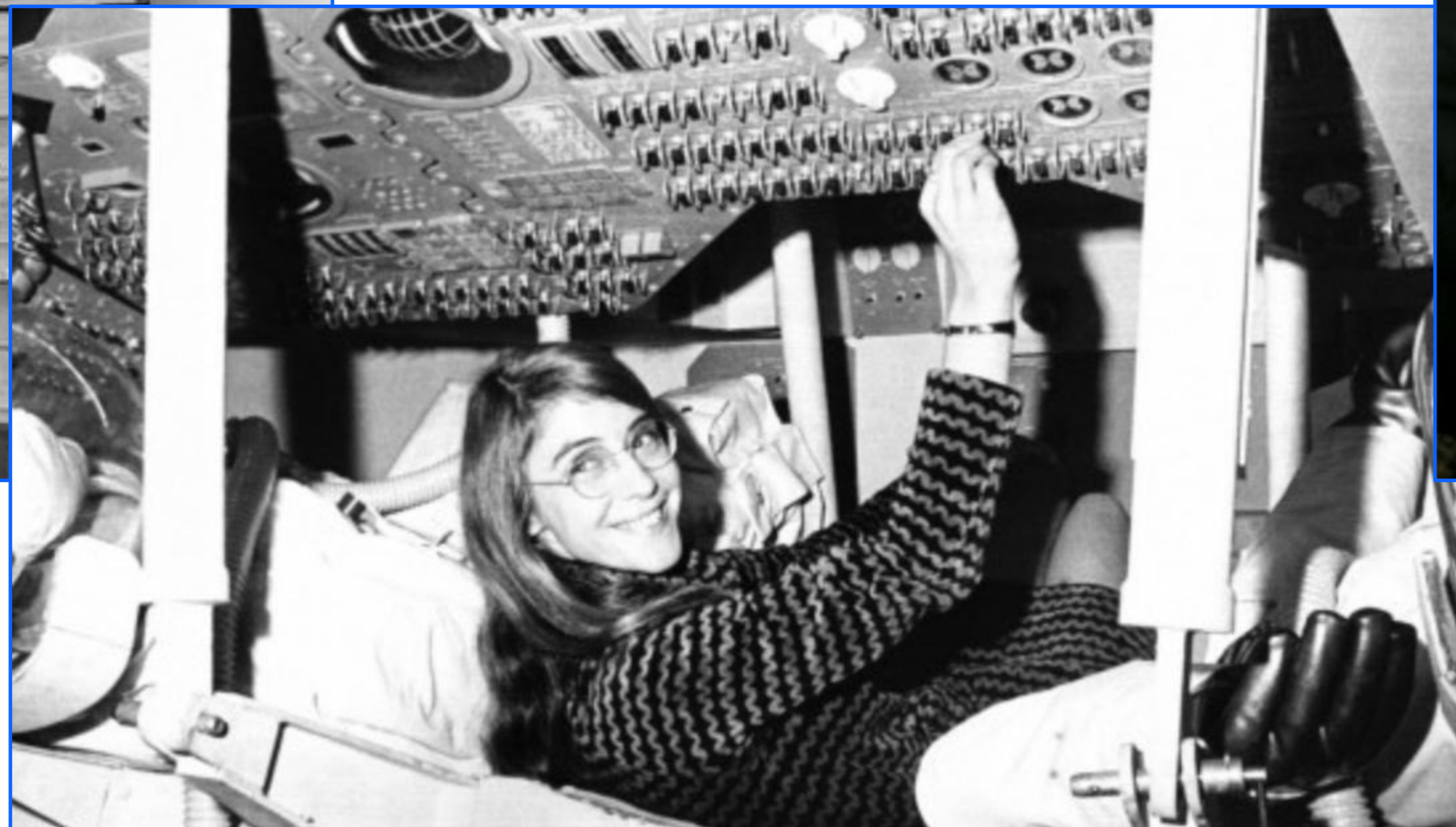
Mary Jackson

...



**IBM 7090 DATA PROCESSING  
SYSTEM**





**Hamilton steht für eine Generation öffentlich unbekannter Frauen, die dabei mithalfen, die Menschheit ins All zu bringen**  
Barack Obama

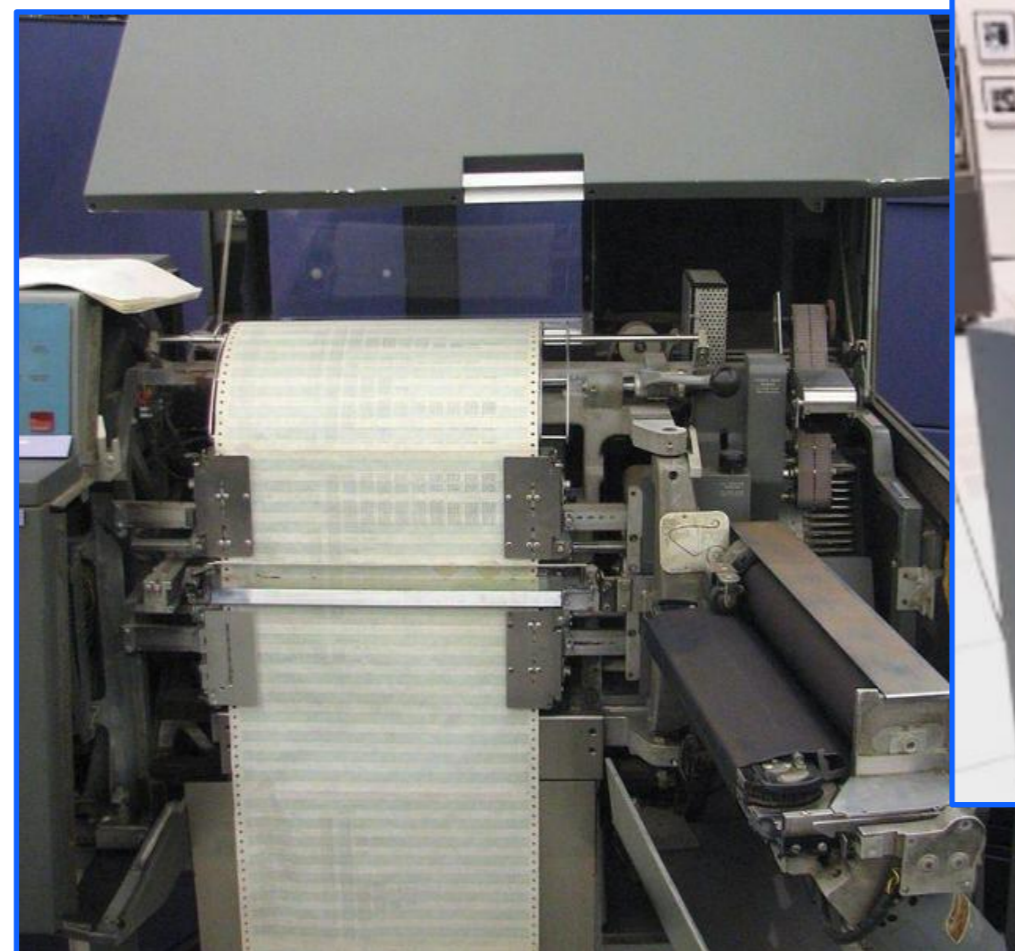
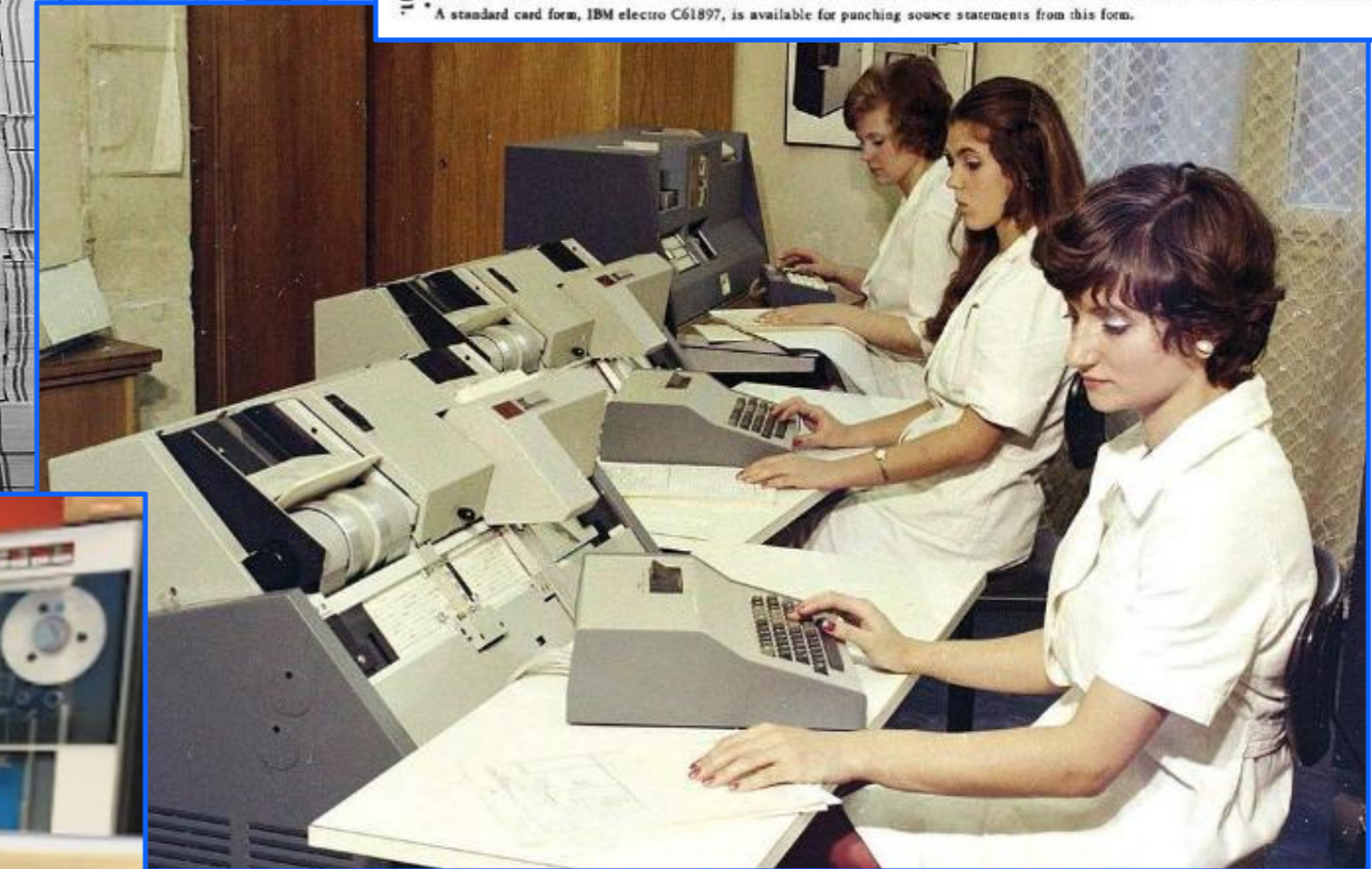


# Punch Cards, Punch Reader and Printer

The Term „batch“ refers to a stack of punch cards

Punched cards were fed via a card reader

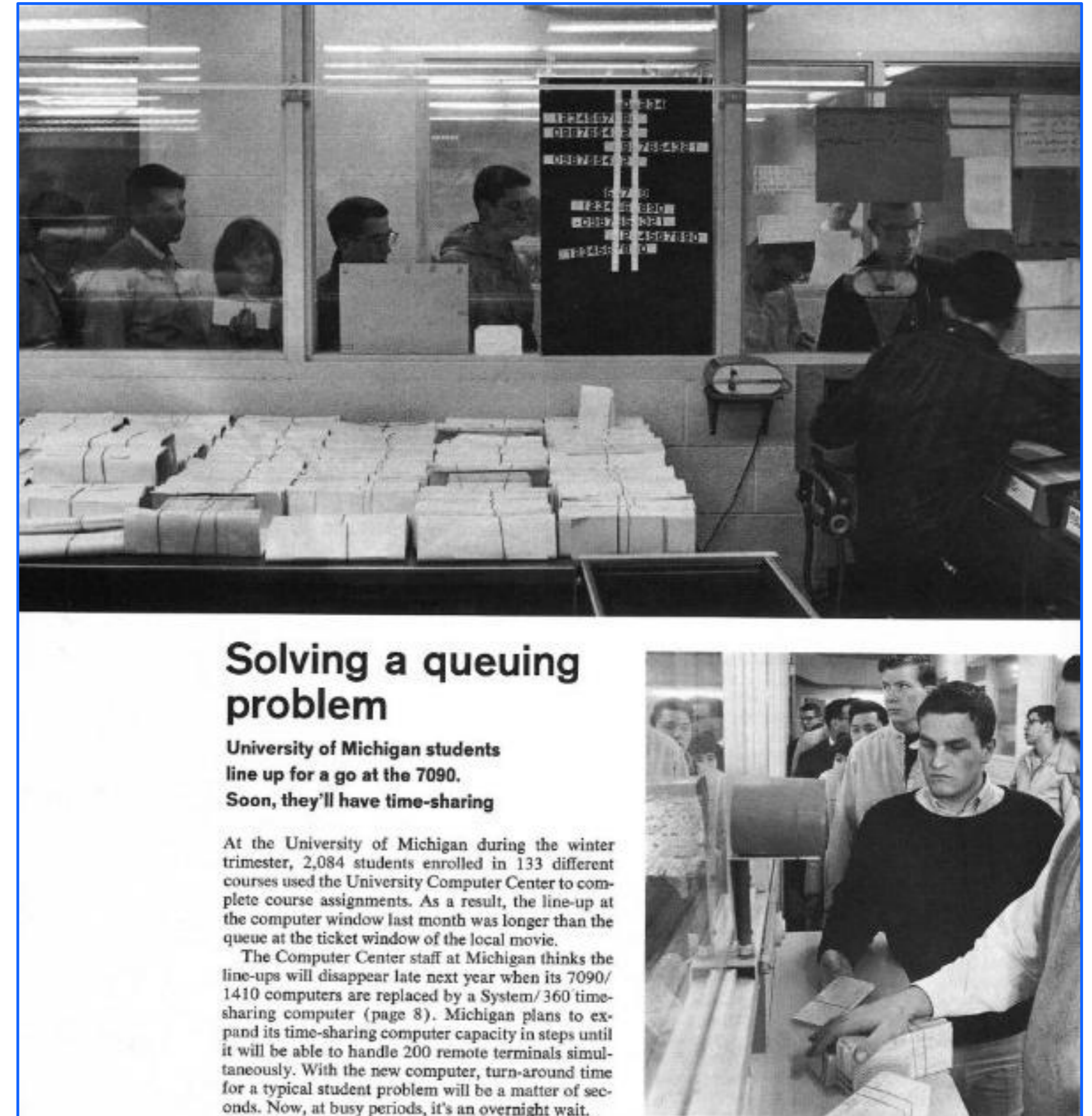
The output was often printed

[illegible]

# Solving a Queuing Problem

From batch and punch cards to time sharing at the **University Computer Center of Michigan University in 1972**

The line up at the computer center window was longer than the queue at the ticket window of the local movie



# TSO and 3270

- TSO is a base element of z/OS (no longer an „option“)
- Network
  - SNA or TCP/IP
  - Terminal or terminal emulation (Telnet 3270) / Virtel from SysperTec
- UserID
  - Entry in RACF database (or ACF2, Top Secret, ...)
- Alias entry in mastercatalog
- User data are registered in a user catalog
- Alias entry connects a HLQ to a user catalog



**3270 Terminal**  
**«Green Screen»**

- TSO and ISPF
- 3270 character-based interface
- No longer green screen

----- TSO/E LOGON -----

Enter LOGON parameters below:

userid ==> UWGR

Password ==> \_

Procedure ==> DBSPROCC

Acct Nmbr ==> ACCT#

Size ==> 1000000

Perform ==>

Command ==> ISPF

RACF LOGON parameters:

New Password ==>

Group Ident ==>

Enter an 'S' before each option desired below:

-Nomail -Nonotice S -Reconnect -OIDcard

PF3/PF15 ==> Logoff PA1 ==> Attention PA2 ==> Reshow  
fic help information by entering a '?' in any entry field

User ID . : UWGR

Time. . . : 10:59

Terminal. : 3278A

Screen. . : 1

Language. : ENGLISH

Appl ID . : ISR

TSO logon : DBSPROCC

TSO prefix: UWGR

System ID : S0W1

MVS acct. : ACCT#

Release . : ISPF 8.1

RHTVT002 RHTIM002 8,20

Menu Utilities Compilers Options Status Help

ISPF Primary Option Menu

Option ==> \_

0 Settings

1 View

2 Edit

3 Utilities

4 Foreground

5 Batch

6 Command

7 Dialog Test

9 IBM Products

10 SCLM

11 Workplace

M More

0 Other

Terminal and user parameters

Display source data or listings

Create or change source data

Perform utility functions

Interactive language processing

Submit job for language processing

Enter TSO or Workstation commands

Perform dialog testing

IBM program development products

SW Configuration Library Manager

ISPF Object/Action Workplace

Additional IBM Products

Additional other products and tools

Enter X to Terminate using log/list defaults

- **John Mertic** is director of program management for Linux Foundation's Open Mainframe Project  
[www.openmainframeproject.org](http://www.openmainframeproject.org)
- Bring **open source knowledge** to mainframe computing
- Thanks to **ZOWE**, a **green-screen 3270** is no longer **the only way** to access mainframe data
- You can use **SSH, REST APIs, JavaScript-powered desktops, IDEs ...**



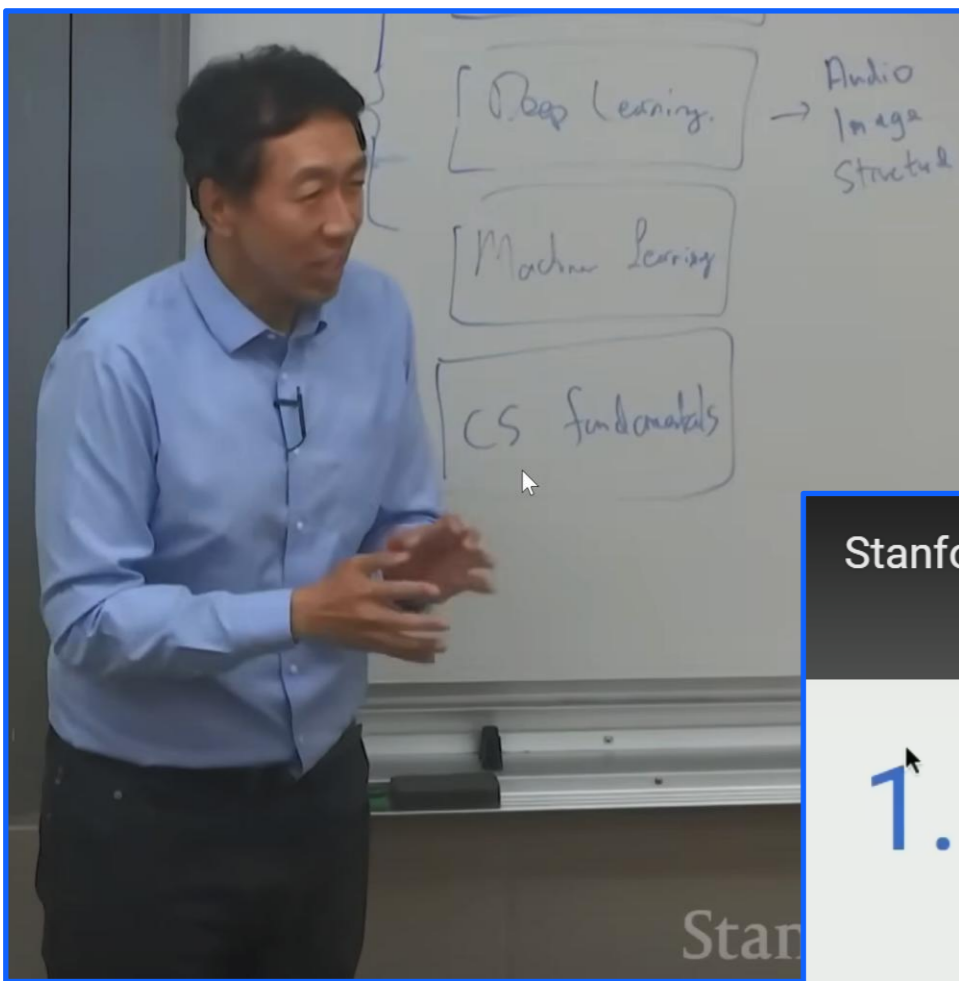
"Why would you want a mainframe?"



"Transportation, insurance, industry... really anywhere where you need computing that's extremely transactionable, highly scalable, top-end performance and immensely secure."

Source: Linux Format Summer 2020





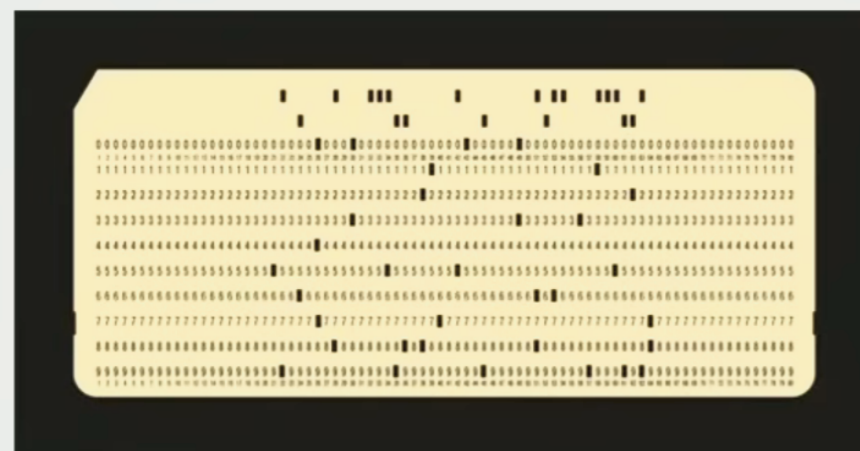
# Andrew Ng

## Prof. at Stanford University

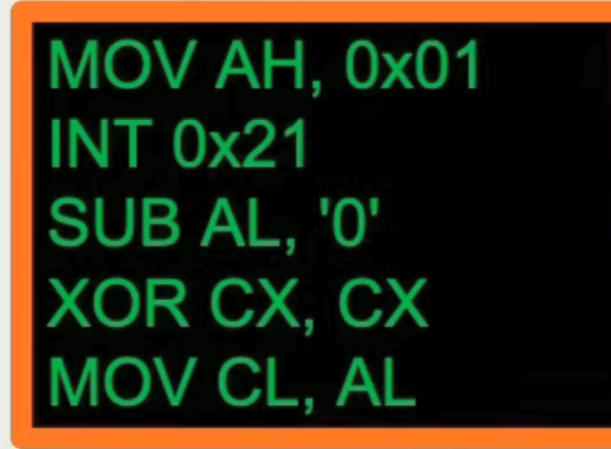
Stanford CS230 | Autumn 2025 | Lecture 1: Introduction to Deep Learning

### 1. AI coding assistance – making coding pervasive

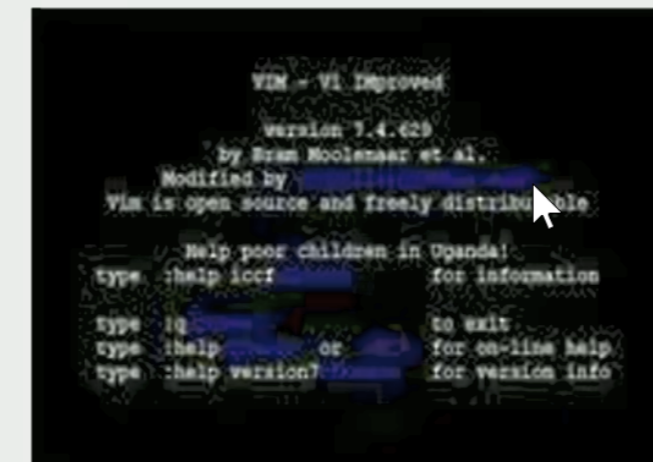
Some are advising people not to learn coding on the grounds AI will automate it. This is bad career advice.



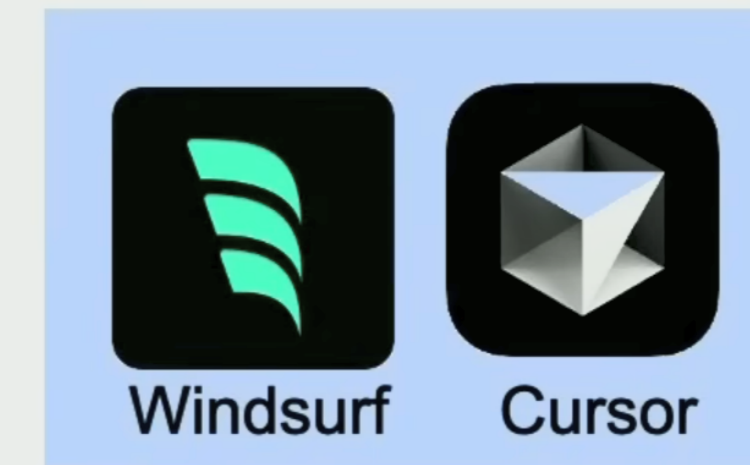
Punch cards  
→ Keyboard



Assembly  
→ Modern languages



Text editor  
→ IDE



AI coding  
assistance

As coding becomes easier, people should code a lot more!

For professional engineers, this is already significantly boosting efficiency.

Andrew Ng

# VS Code Extensions

## IBM Z Open Editor

- COBOL
- PL/I
- High Level Assembler
- REXX
- *JCL*

## Workflows4z

- Create and validate the z/OSMF workflow definition and action definition files  
<https://marketplace.visualstudio.com/items?itemName=broadcomMFD.workflows4z>

## COBOL Check – an Open Source Unit Testing Framework for COBOL

- Dave Nicolette, COBOL Check Chair  
<https://www.youtube.com/watch?v=APR9CT4Z25M>
- GitHub Site:  
<https://github.com/neopragma/cobol-unit-test>



# Links and Resources

Open Mainframe Website

<https://www.openmainframeproject.org/>

Open Mainframe Project Blog

<https://www.openmainframeproject.org/blog/>

GitHub

<https://github.com/openmainframeproject>

Open Mainframe Project in the Press

<https://www.openmainframeproject.org/news/press>

COBOL Programming Course

<https://www.openmainframeproject.org/all-projects/cobolprogrammingcourse>

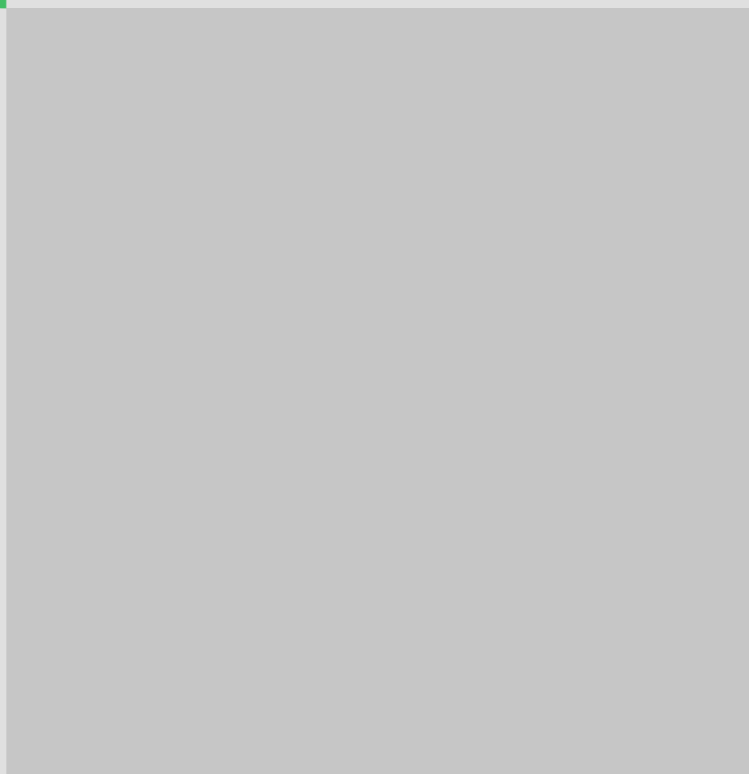
COBOL Working Group

<https://www.openmainframeproject.org/all-projects/cobol-working-group>

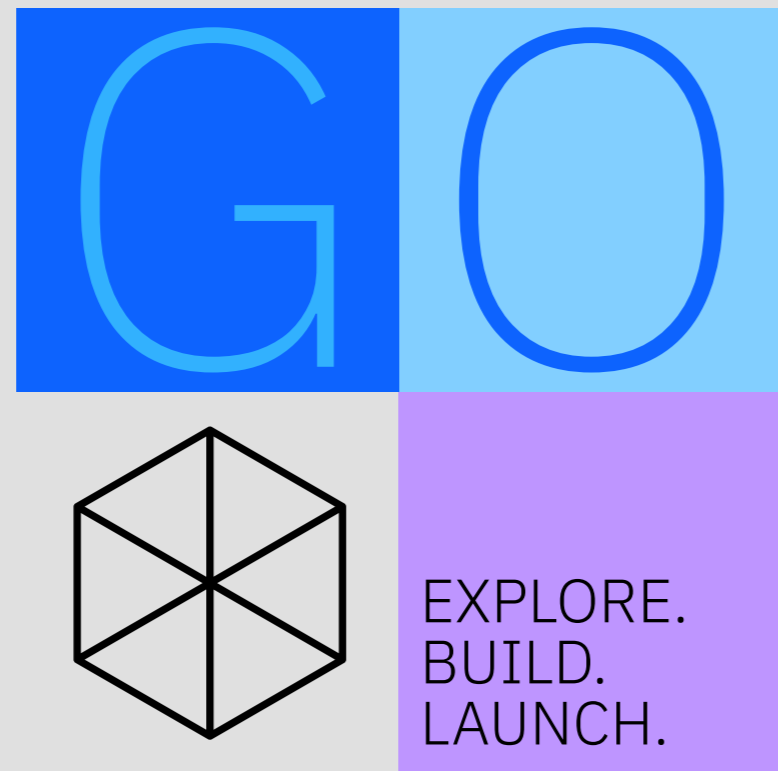
ZOWE Conformance Program

<https://www.openmainframeproject.org/all-projects/zowe/conformance>

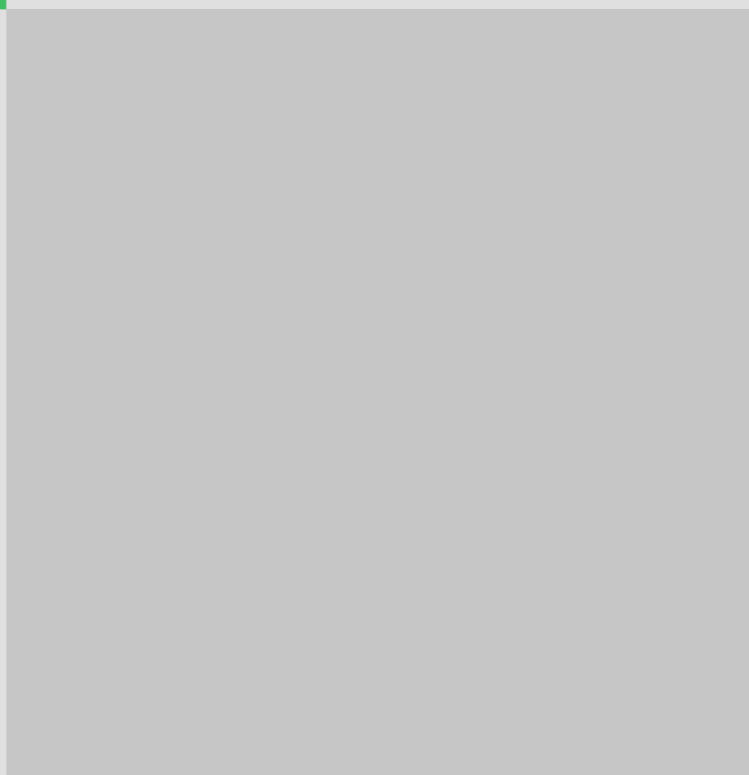
# It's Demo Time!



Wolfram Greis  
European Mainframe Academy  
[wolfram.greis@mainframe-academy.de](mailto:wolfram.greis@mainframe-academy.de)



# Q&A



Wolfram Greis  
European Mainframe Academy  
[wolfram.greis@mainframe-academy.de](mailto:wolfram.greis@mainframe-academy.de)

