

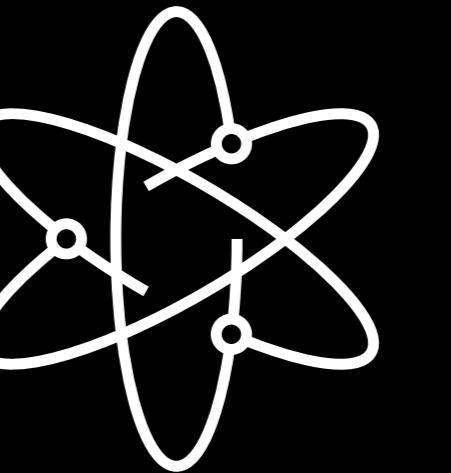
Community Day

From Punch Cards to VS Code

Wolfram Greis

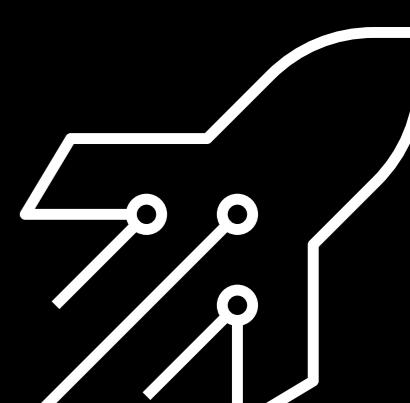
European Mainframe Academy AG

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**
- 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

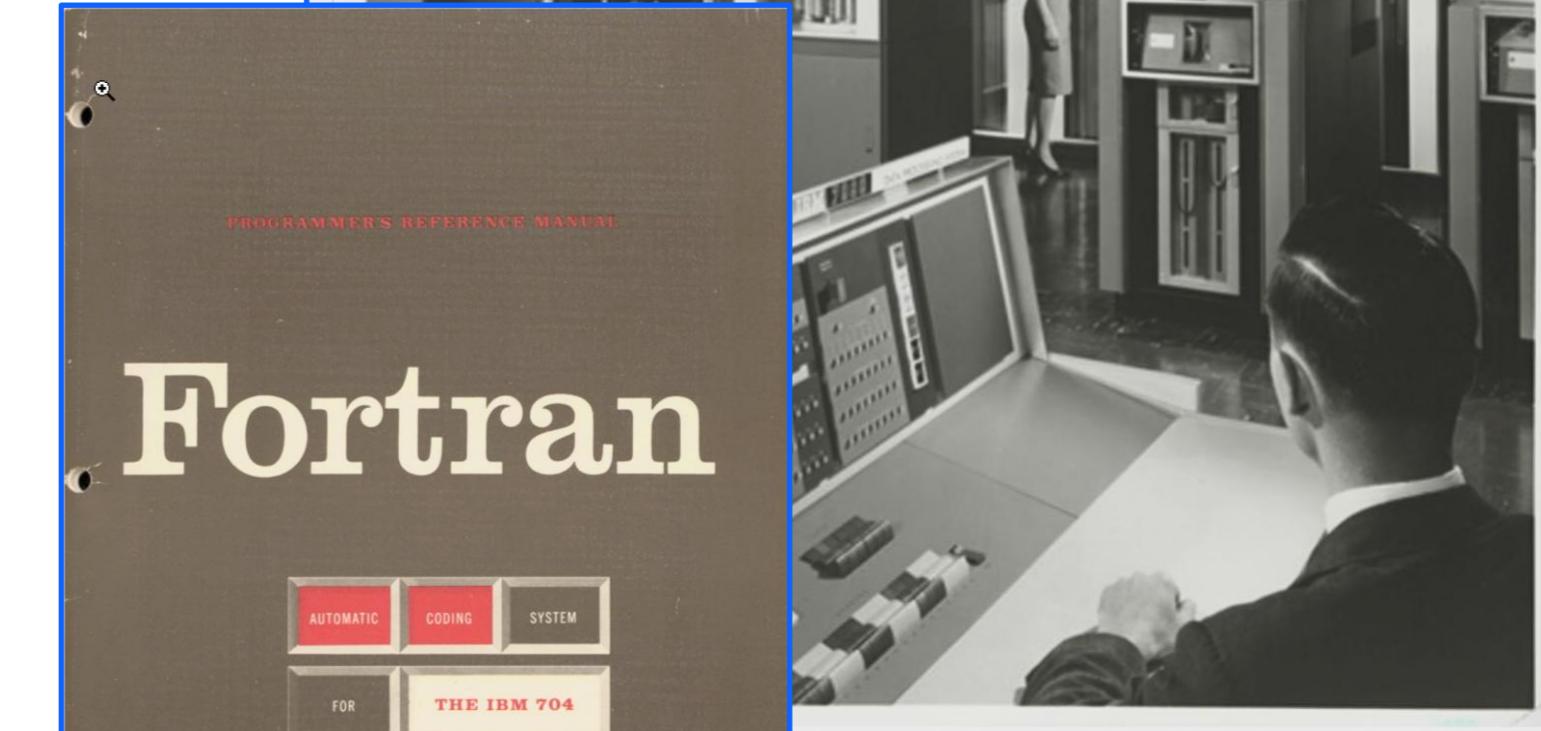
Dorothy Vaughan

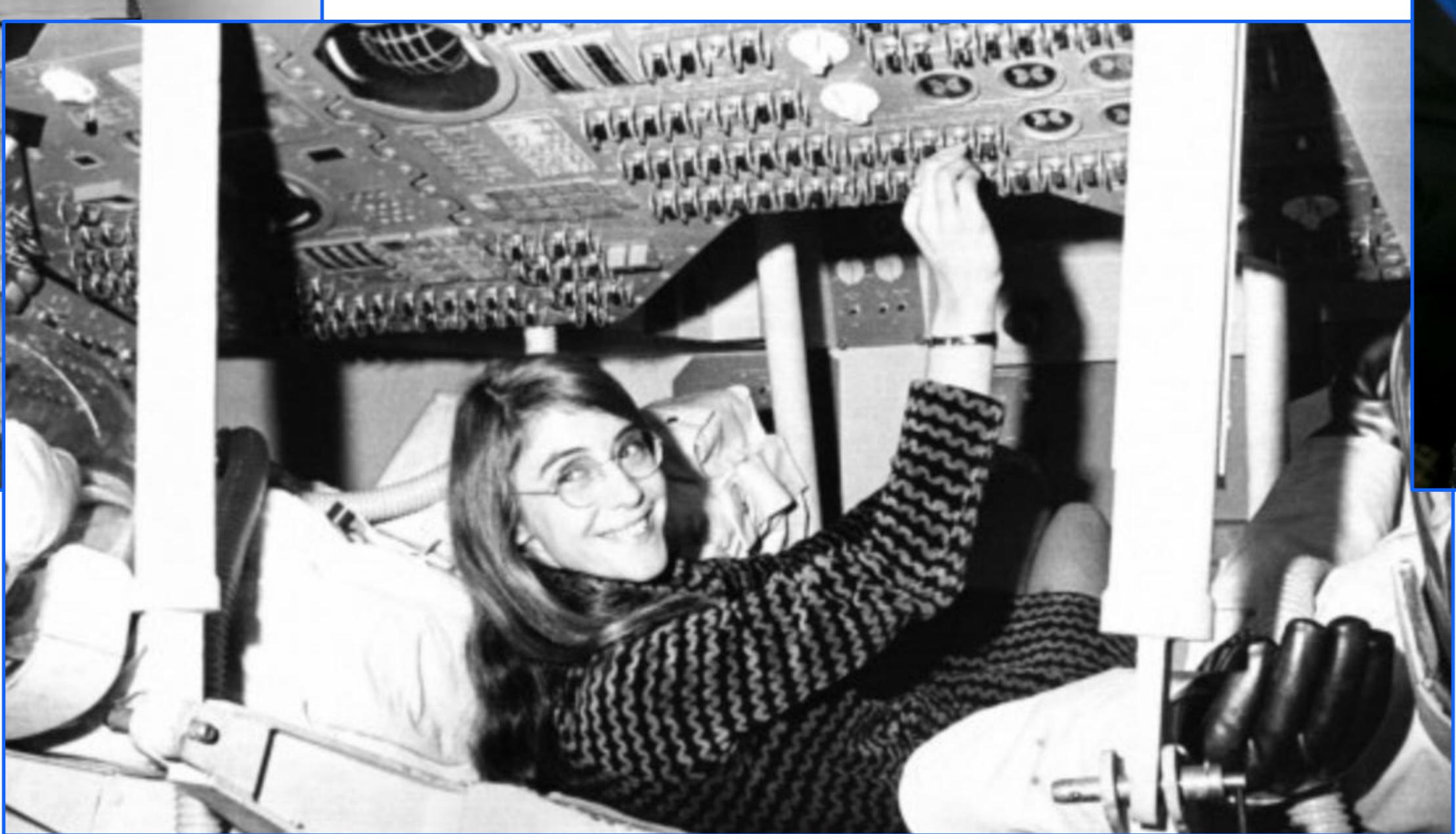
Mary Jackson

...



IBM 7090 DATA PROCESSING SYSTEM





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



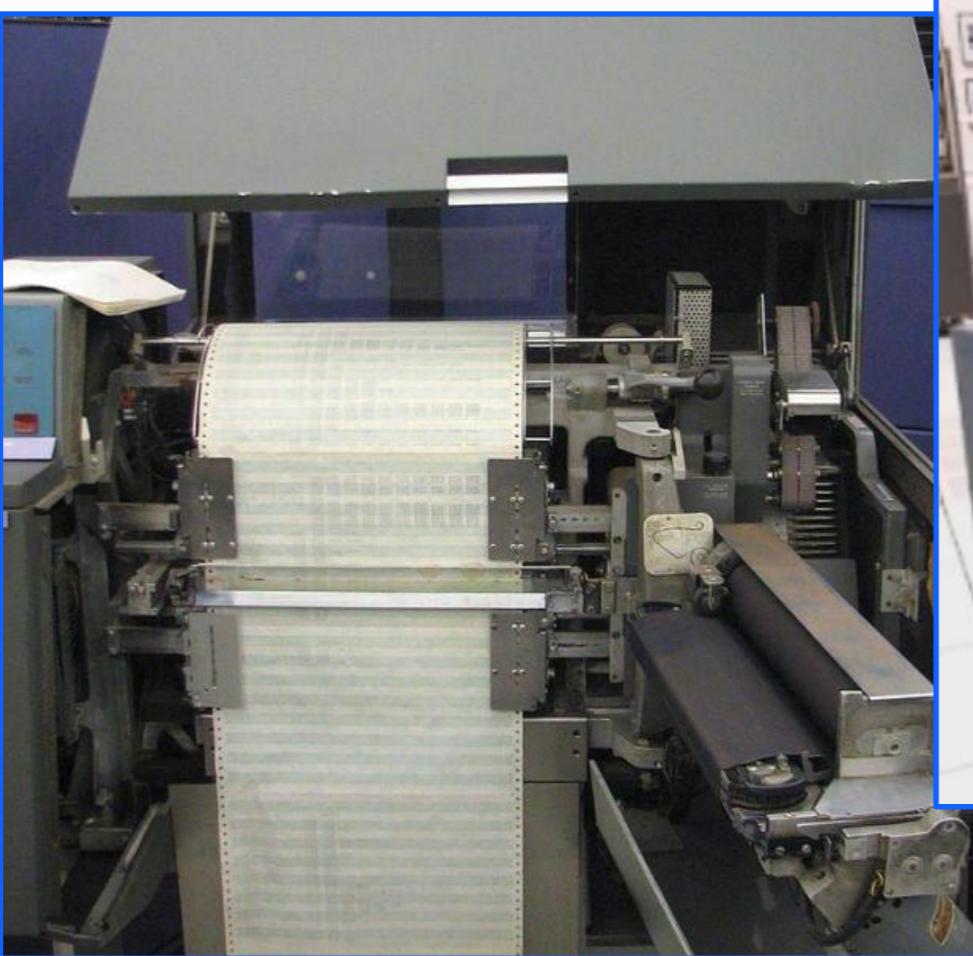
abc NEWS

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



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



Solving a queuing problem

University of Michigan students line up for a go at the 7090. Soon, they'll have time-sharing

At the University of Michigan during the winter trimester, 2,084 students enrolled in 133 different courses used the University Computer Center to complete course assignments. As a result, the line-up at the computer window last month was longer than the queue at the ticket window of the local movie. The Computer Center staff at Michigan thinks the line-ups will disappear late next year when its 7090/1410 computers are replaced by a System/360 time-sharing computer (page 8). Michigan plans to expand its time-sharing computer capacity in steps until it will be able to handle 200 remote terminals simultaneously. With the new computer, turn-around time for a typical student problem will be a matter of seconds. Now, at busy periods, it's an overnight wait.



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

RACF LOGON parameters:

New Password ===>

Group Ident ===>

Acct Nmbr ===> ACCT#

Size ===> 1000000

Perform ===>

Command ===> ISPF

Enter an 'S' before each option desired below:

-Nmail

-Nonotice

S -Reconnect

-OIDcard

<p>Menu Utilities Compilers Options Status Help</p> <hr/> <p>ISPF Primary Option Menu</p> <p>Option ===> =</p> <table border="0"> <tr> <td>0 Settings</td> <td>Terminal and user parameters</td> <td>User ID . : UWGR</td> </tr> <tr> <td>1 View</td> <td>Display source data or listings</td> <td>Time. . . : 10:59</td> </tr> <tr> <td>2 Edit</td> <td>Create or change source data</td> <td>Terminal. : 3278A</td> </tr> <tr> <td>3 Utilities</td> <td>Perform utility functions</td> <td>Screen. . : 1</td> </tr> <tr> <td>4 Foreground</td> <td>Interactive language processing</td> <td>Language. : ENGLISH</td> </tr> <tr> <td>5 Batch</td> <td>Submit job for language processing</td> <td>Appl ID . : ISR</td> </tr> <tr> <td>6 Command</td> <td>Enter TSO or Workstation commands</td> <td>TSO logon : DBSPROCC</td> </tr> <tr> <td>7 Dialog Test</td> <td>Perform dialog testing</td> <td>TSO prefix: UWGR</td> </tr> <tr> <td>9 IBM Products</td> <td>IBM program development products</td> <td>System ID : S0W1</td> </tr> <tr> <td>10 SCLM</td> <td>SW Configuration Library Manager</td> <td>MVS acct. : ACCT#</td> </tr> <tr> <td>11 Workplace</td> <td>ISPF Object/Action Workplace</td> <td>Release . : ISPF 8.1</td> </tr> <tr> <td>M More</td> <td>Additional IBM Products</td> <td></td> </tr> <tr> <td>O Other</td> <td>Additional other products and tools</td> <td></td> </tr> </table> <p>Enter X to Terminate using log/list defaults</p>		0 Settings	Terminal and user parameters	User ID . : UWGR	1 View	Display source data or listings	Time. . . : 10:59	2 Edit	Create or change source data	Terminal. : 3278A	3 Utilities	Perform utility functions	Screen. . : 1	4 Foreground	Interactive language processing	Language. : ENGLISH	5 Batch	Submit job for language processing	Appl ID . : ISR	6 Command	Enter TSO or Workstation commands	TSO logon : DBSPROCC	7 Dialog Test	Perform dialog testing	TSO prefix: UWGR	9 IBM Products	IBM program development products	System ID : S0W1	10 SCLM	SW Configuration Library Manager	MVS acct. : ACCT#	11 Workplace	ISPF Object/Action Workplace	Release . : ISPF 8.1	M More	Additional IBM Products		O Other	Additional other products and tools		<p>?F3/PF15 ==> Logoff PA1 ==> Attention PA2 ==> Reshow</p> <p>For help information by entering a '?' in any entry field</p> <hr/> <p>RHTVT002 RHTIM002 8,20</p>
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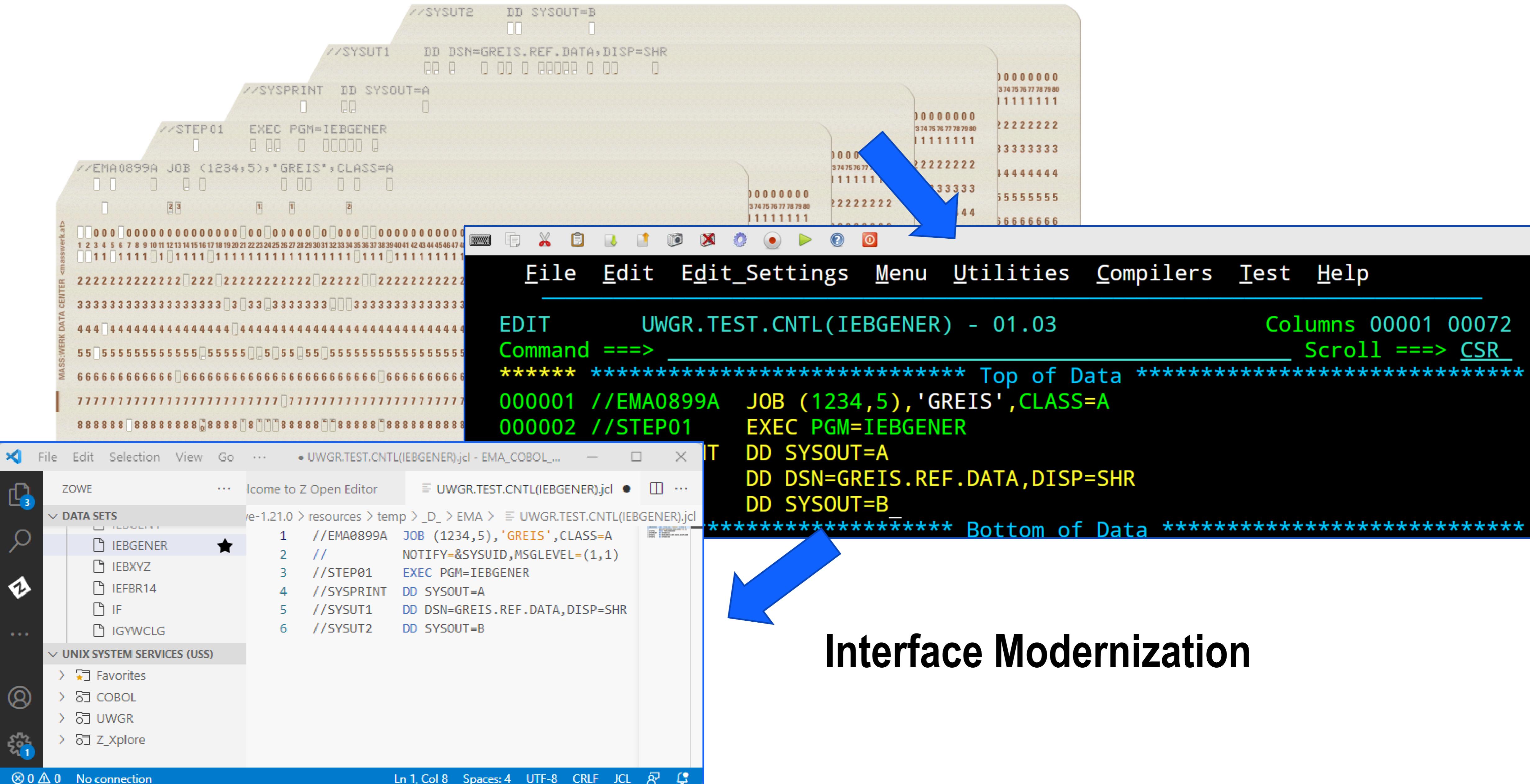
- **John Mertic** is director of program management for Linux Foundation's Open Mainframe Project
www.openmainframeproject.org
- Bring **open source knowledge** to mainframe computing
- Thanks to **ZOWE**, a **green-screen 3270** is no longer **the only way** to access mainframe data
- You can use **SSH, REST APIs, JavaScript-powered desktops, IDEs** ...

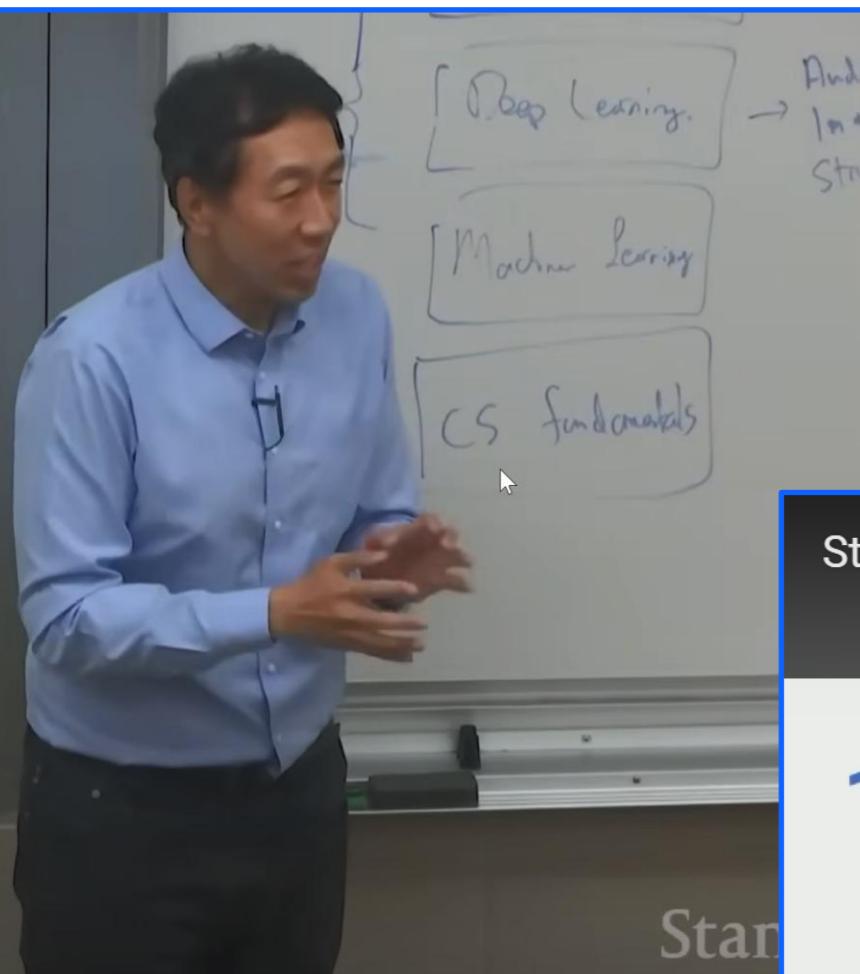


“Why would you want a mainframe?”



Source: Linux Format Summer 2020





Andrew Ng

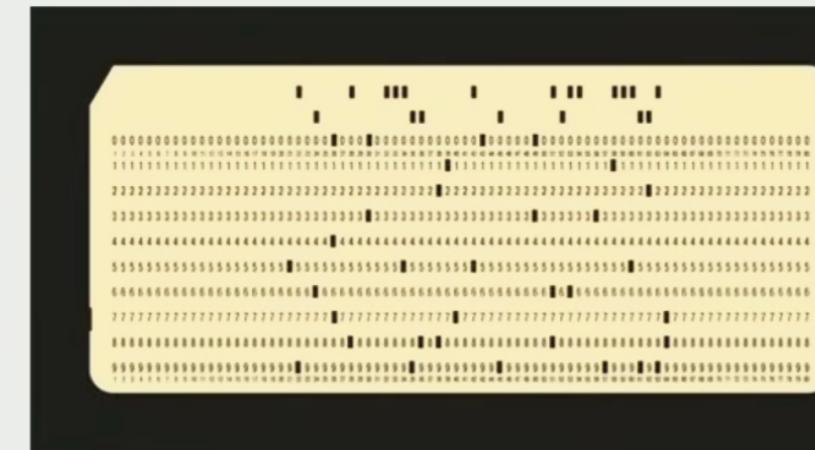
Prof. at Stanford University

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

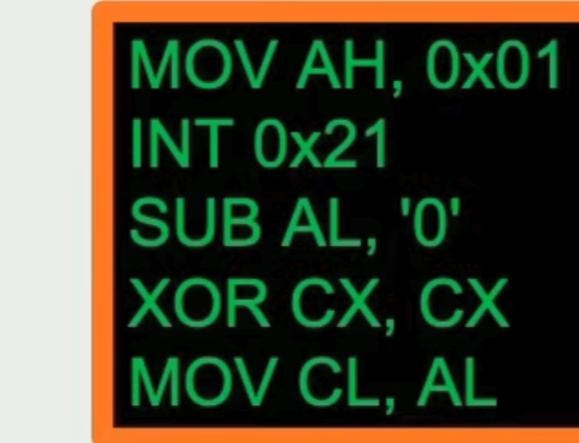


1. AI coding assistance – making coding pervasive

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>

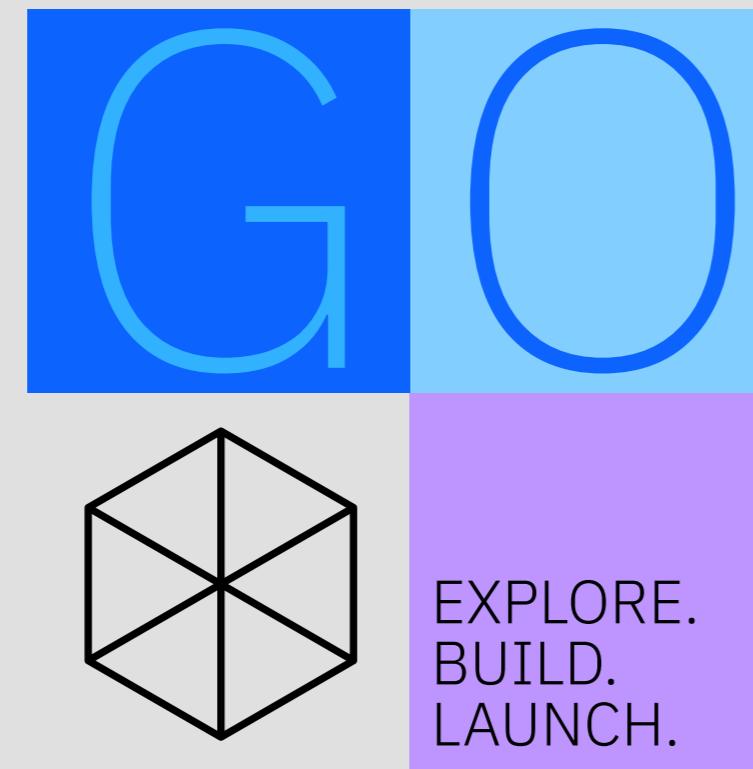
ZOWE Conformance Program

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

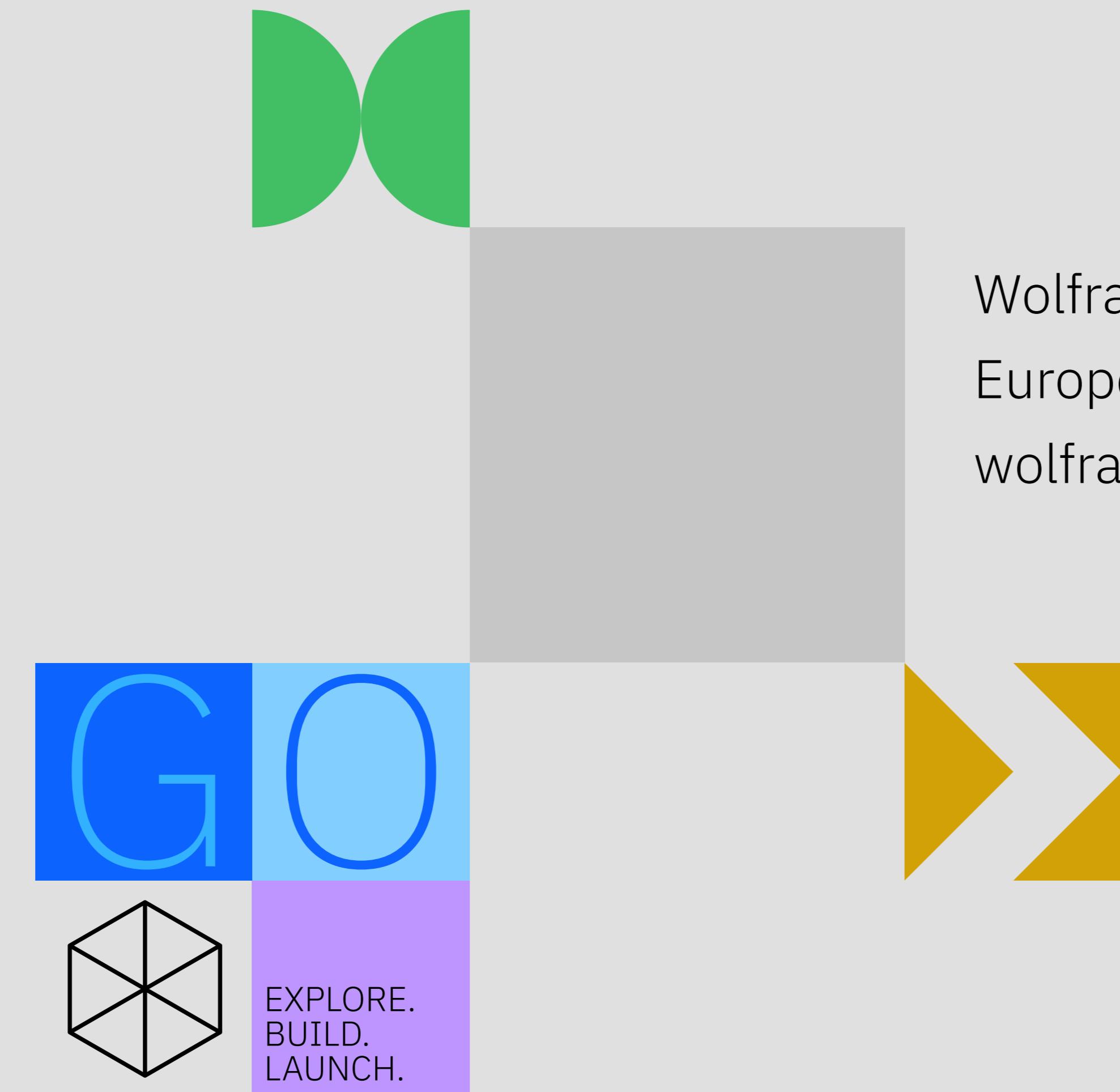
It's Demo Time!



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European Mainframe Academy
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Q&A



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