

Empowering NextGen Developers: Mastering Easytrieve in VS Code – Essential Tips, Tricks, and Real-World Demo

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Who Are We?

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What is this Session about?

- The industry is always changing. New business challenges and demands emerge constantly. Having the ability to solve and address them in a timely matter is crucial to your business's success.
- We will show how NextGen Developers can tackle, overcome, and solve these challenges using a popular interface, Microsoft Visual Studio Code.
- We will take you through a business problem, introducing you to Easytrieve.

Agenda

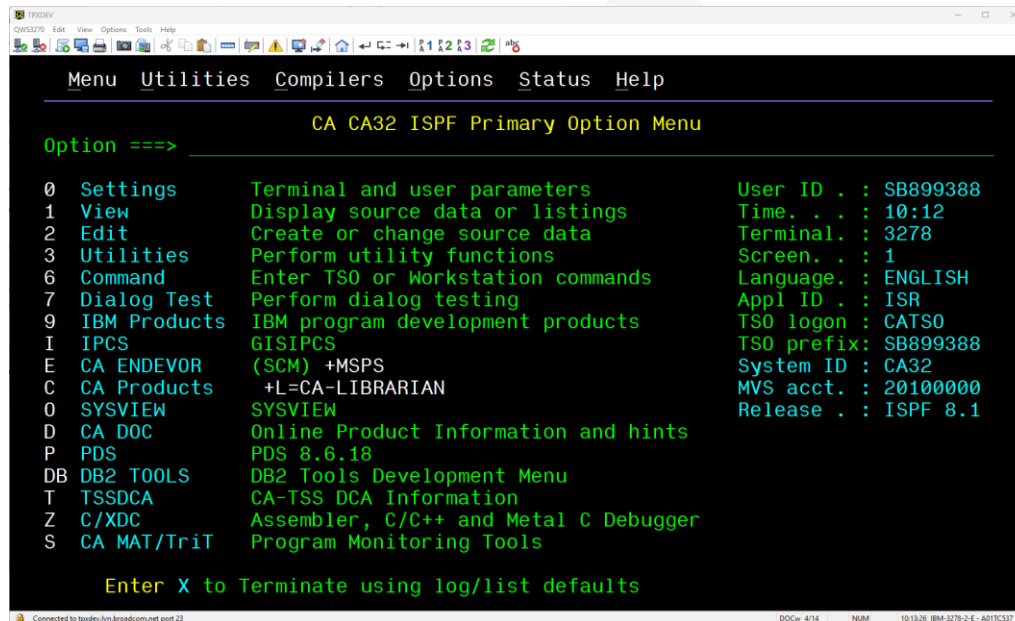
- The Business Challenge
- Mainframe NextGen Developers
- Adaptable Attitude
- Why Easytrieve?
- Introducing you to Easytrieve



THE BUSINESS CHALLENGE

The Business Challenge

- Getting new programmers introduced to the mainframe environment
- Bridging the UI gap
- Mental shift from Object Oriented to Procedural Logic
- I've never heard of Easytrieve



The screenshot shows a terminal window titled "CA CA32 ISPF Primary Option Menu". It displays a list of options for the user to select, including Settings, View, Edit, Utilities, Command, Dialog Test, IBM Products, IPCS, CA ENDEVOR, CA Products, SYSVIEW, CA DOC, PDS, DB2 TOOLS, TSSDCA, C/XDC, and CA MAT/TriT. The user's ID is SB899388, and the system is CA32. The terminal also shows the user's terminal and screen numbers, and the release version of the ISPF software.

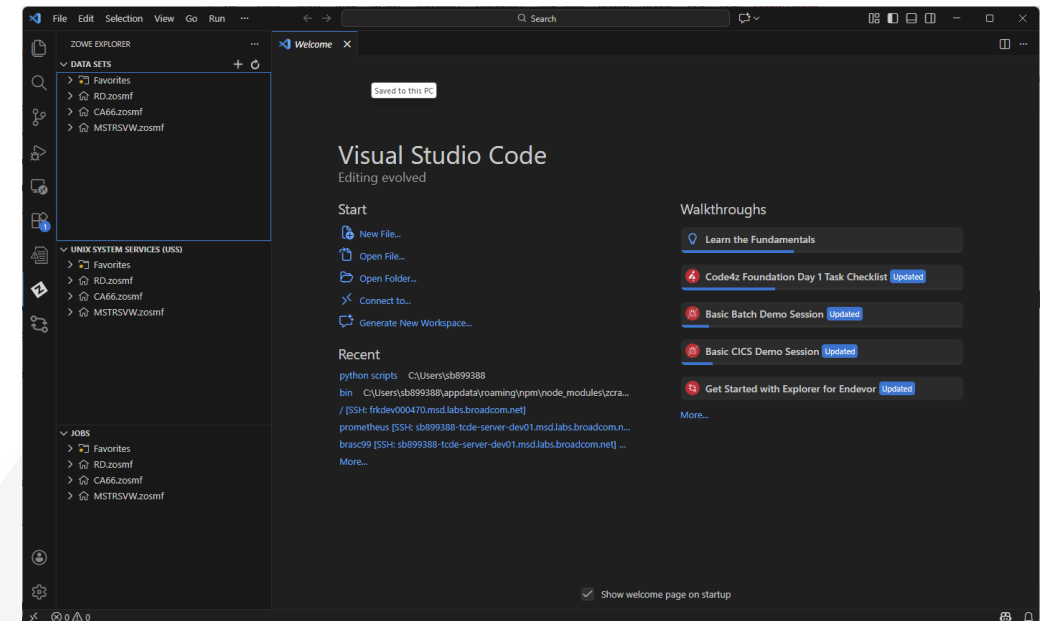
```
Menu Utilities Compilers Options Status Help

CA CA32 ISPF Primary Option Menu

Option ==>

0 Settings      Terminal and user parameters      User ID . : SB899388
1 View          Display source data or listings    Time. . . : 10:12
2 Edit          Create or change source data       Terminal. : 3278
3 Utilities     Perform utility functions         Screen. . : 1
6 Command       Enter TSO or Workstation commands  Language. : ENGLISH
7 Dialog Test   Perform dialog testing            Appl ID . : ISR
9 IBM Products  IBM program development products  TSO logon : CATSO
I IPCS          GISIPCS                           TSO prefix: SB899388
E CA ENDEVOR    (SCM) +MSPS                       System ID  : CA32
C CA Products   +L=CA-LIBRARIAN                   MVS acct. : 20100000
0 SYSVIEW      SYSVIEW                           Release .  : ISPF 8.1
D CA DOC        Online Product Information and hints
P PDS           PDS 8.6.18
DB DB2 TOOLS    DB2 Tools Development Menu
T TSSDCA        CA-TSS DCA Information
Z C/XDC         Assembler, C/C++ and Metal C Debugger
S CA MAT/TriT   Program Monitoring Tools

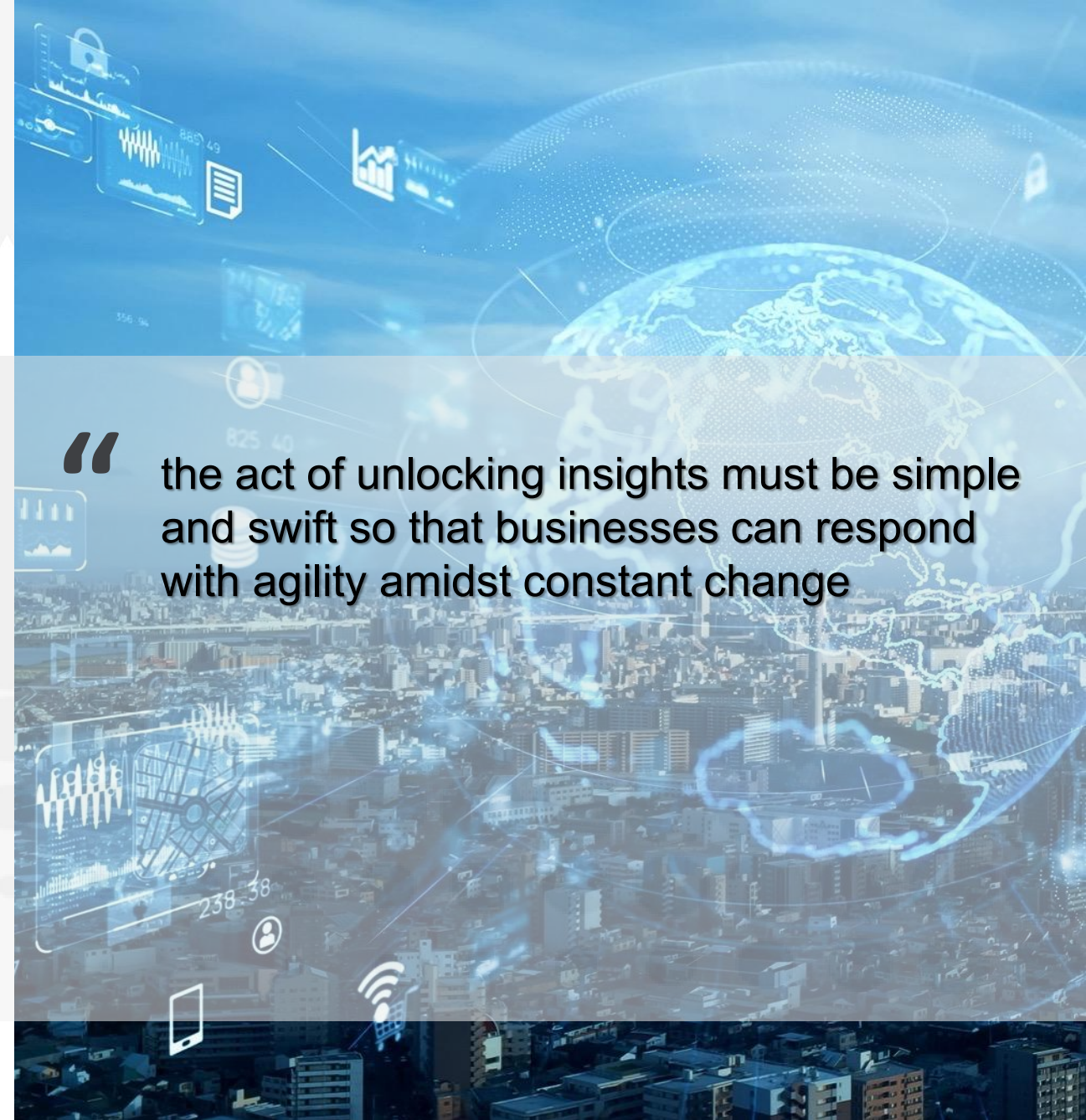
Enter X to Terminate using log/list defaults
```



Achieving the Gold Standard

Unlock Greater Data Insights Today

- ✓ **Generate robust reports in real time** to improve availability of critical business data
- ✓ **Access data residing across all platforms**, including the mainframe, to deliver a comprehensive and accurate perspective
- ✓ **Leverage modern programming frameworks** to empower the next generation of application developers



“ the act of unlocking insights must be simple and swift so that businesses can respond with agility amidst constant change

What framework are we talking about?

Tools in Place

**Programming
Language**

User Experience



MAINFRAME NEXTGEN DEVELOPERS

The Open-First approach drives highly visible benefits



AUTOMATED CI/CD
pipelines are the new normal

<1hr

Lead time to deployment



**DEVELOPER
PRODUCTIVITY**
fueled by choice of tools

90+%

Time spent coding



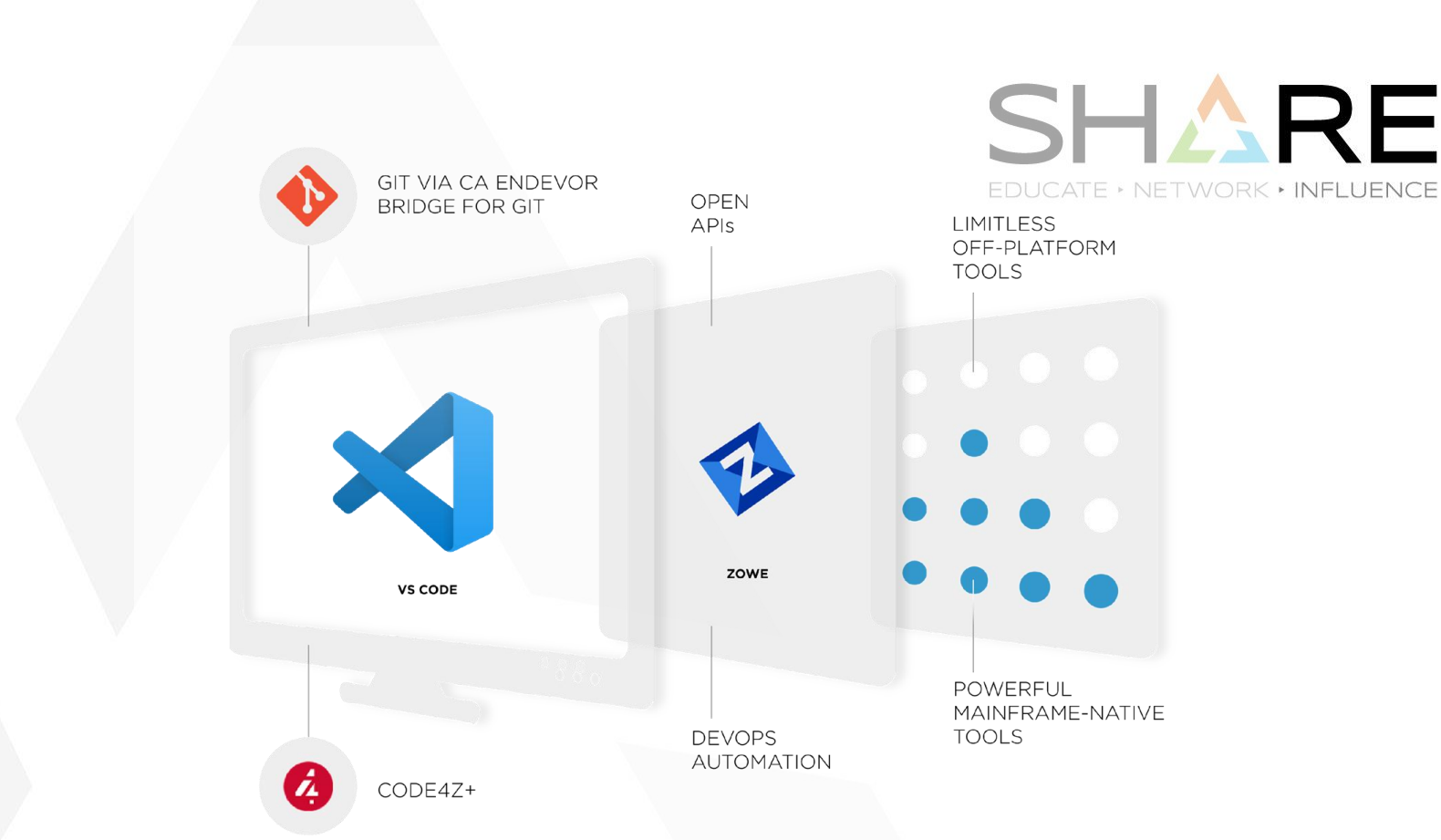
EMPOWERING
next generation

87%

of developers use
open-source tools

Modern Mainframe Cockpit

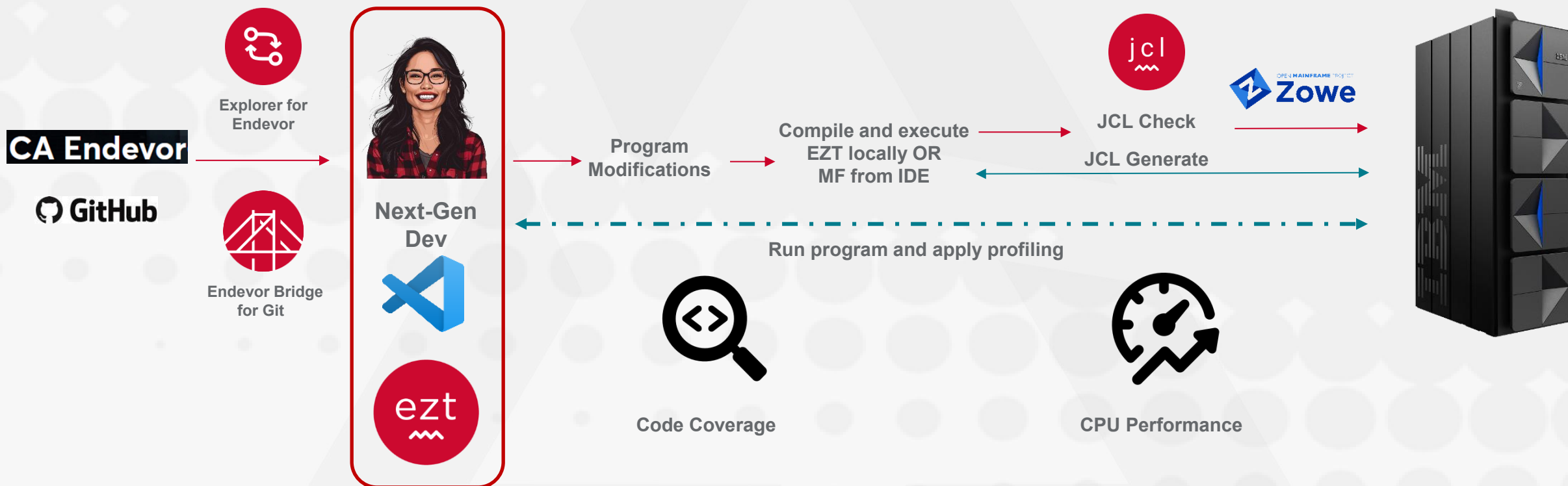
- Open source-enabled
- Simple, familiar experience
- Best of mainframe-native & off-platform tooling



Scenario:

- Millennial Application (Easytrieve) Developer
- Code resides in CA Endevor; prefers VS Code and Git
- Access to mainframe for submitting and executing JCLs
- Shift-left - get insights into Performance and Code Coverage

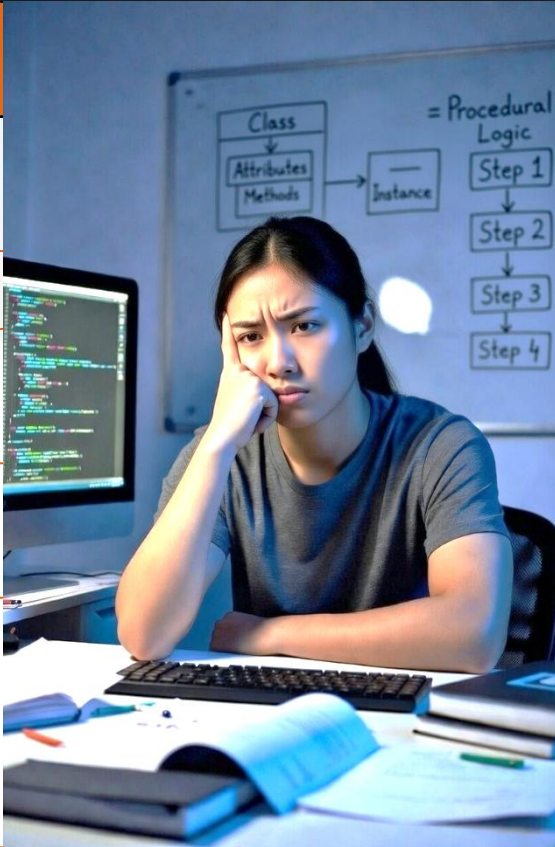
Striving Towards a Modern Dev Experience





ADAPTABLE ATTITUDE

Object-Oriented -vs- Procedural Programming

Object-Oriented		Procedural Programming
Divided into small parts called objects		Divided into small parts called functions or procedures
Follows a bottom-up approach		Follows a top-down approach
Emphasis on "what" (entities and their interactions)		Emphasis on "how" to do the task (steps and algorithms)
Reusability through <i>inheritance</i>, <i>polymorphism</i>, and <i>composition</i>		Reusability achieved mainly through <i>functions</i> and <i>libraries</i>
Use Cases: GUI applications, enterprise software, simulations, games, systems with complex interactions		Use Cases: Scripts, algorithms, performance-critical low-level code, embedded systems

These differences reflect fundamental shifts in thinking: Procedural Programming focuses on **actions** and **sequence**, while OOP emphasizes **entities**, **responsibilities**, and **relationships**.

Programming Languages

The screenshot shows the Visual Studio Marketplace interface. At the top, there's a navigation bar with 'Visual Studio' and 'Visual Studio Code' tabs. Below it, a search bar contains 'Programming Language' with a magnifying glass icon. To the right of the search bar, it says '8322 Results' (circled in red). Further right, there are filters for 'Target Platform: All', 'Showing: All categories', and 'Sort By: Installs'. The main area displays a grid of extension cards. Each card includes an icon, the extension name, publisher, download count, a brief description, a star rating, and a 'FREE' label. The extensions shown are: Jupyter, rust-analyzer, Apex, Rust (deprecated), Apex Interactive Debugger, Haskell Syntax Highlighter, CodeGeeX: AI Coding, C# Snippets, VS Code Counter, axe Accessibility Linter, Modern Fortran, Ren'Py Language, Ren'Py Language (Official), Claude Opus 4.5, GPT, Zig Language, Just Print It, VSMarketplace Badge, and Groovy.

Extension Name	Publisher	Downloads	Rating	Price
Jupyter	Microsoft	101M	4.5 stars	FREE
rust-analyzer	The Rust Programming Language	5.7M	5 stars	FREE
Apex	Salesforce	2.1M	4.5 stars	FREE
Rust (deprecated)	The Rust Programming Language	1.9M	4.5 stars	FREE
Apex Interactive Debugger	Salesforce	1.7M	4.5 stars	FREE
Haskell Syntax Highlighter	Justus Adam	1.3M	5 stars	FREE
CodeGeeX: AI Coding	Zipu AI	1.1M	4.5 stars	FREE
C# Snippets	Jorge Serrano	1M	5 stars	FREE
VS Code Counter	Kentaro Ushiyama	757K	5 stars	FREE
axe Accessibility Linter	Deque Systems	618K	4.5 stars	FREE
Modern Fortran	The Fortran Programming Language	557K	4.5 stars	FREE
Ren'Py Language	LuqueDaniel	295K	5 stars	FREE
Ren'Py Language (Official)	Ren'Py	293K	4.5 stars	FREE
Claude Opus 4.5, GPT	Sixth	228K	5 stars	FREE
Zig Language	ziglang	217K	5 stars	FREE
Just Print It	KamaoKat	202K	5 stars	FREE
VSMarketplace Badge	KamaoKat	172K	4.5 stars	FREE
Groovy	Mellow Marshmall	166K	5 stars	FREE



Programming Languages

The screenshot shows the Visual Studio Marketplace interface. At the top, there's a navigation bar with 'Visual Studio | Marketplace' and a 'Sign in' button. Below this, a search bar contains the text 'broadcom'. The results are displayed in a grid of 12 items, each with a red circular icon, a title, a description, a star rating, and a 'FREE' label. The items are: Workflows4z, HLASM Language Support, Code4z Foundation, Debugger for Mainframe, OPS/REXX Language Support, Explorer for Endeavor, Data Editor for Mainframe, Database Manager for Db2, Rexx Language Support, JCL Language Support, Bridge For Git Explorer, and Easytrieve Language Support. The 'Easytrieve Language Support' item is highlighted with a red border. To the right of the screenshot, there is a large gray icon representing a code editor with angle brackets and a slash.

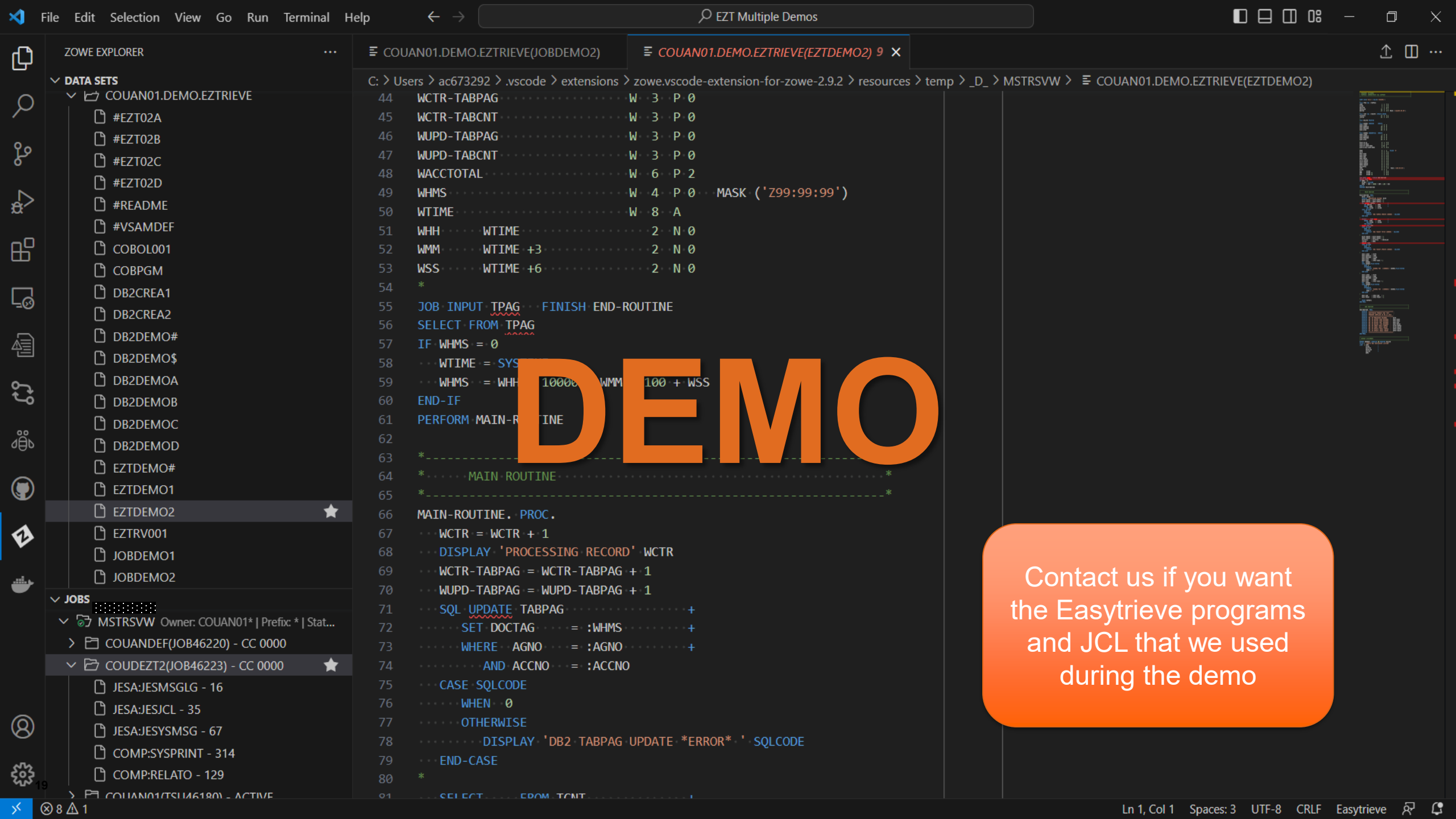
Icon	Name	Downloads	Rating	Price
Workflow icon	Workflows4z	1.4K	★★★★★	FREE
asm icon	HLASM Language Support	28.4K	★★★★★	FREE
Code4z icon	Code4z Foundation	16.4K	★★★★★	FREE
Debugger icon	Debugger for Mainframe	152K	★★★★★	FREE
ops rexx icon	OPS/REXX Language Support	859	★★★★★	FREE
Explorer icon	Explorer for Endeavor	21.1K	★★★★★	FREE
Data Editor icon	Data Editor for Mainframe	15.1K	★★★★★	FREE
Db2 icon	Database Manager for Db2	195	★★★★★	FREE
rexx icon	Rexx Language Support	9.6K	★★★★★	FREE
jcl icon	JCL Language Support	14.5K	★★★★★	FREE
Bridge icon	Bridge For Git Explorer	2K	★★★★★	FREE
ezt icon	Easytrieve Language Support	1.6K	★★★★★	FREE



WHY EASYTRIEVE?

What is Easytrieve?

- High-level programming language originally developed in the early 1970s
- Allows users to retrieve large volumes of data from many different sources: VSAM, QSAM, Db2, IMS, Oracle, IDMS, Datacom, etc.
- Designed to be an English-like language
- Built-in report generation and data manipulation
- Simplified file and record access
- On average, uses 91% less code than COBOL



DEMO

Contact us if you want
the Easytrieve programs
and JCL that we used
during the demo

Easytrieve vs COBOL vs Python

Number of Statements Comparison

Easytrieve 11.6 has **93** statements

IBM COBOL 6.4 has **225** statements

Python 3.14.2 has **~132** statements*
+735,130 projects in PyPI**

* 39 keywords + 70 built-in functions + 23 statements = 132

** As of February 2, 2026

Easytrieve vs COBOL - Average 91% Less Code

Lines of Code Comparison

	Easytrieve	Generated COBOL	Less Code Ratio %
DEMODB2A	107	942	88.6%
DEMODB2B	23	361	93.6%
DEMODB2C	30	304	90.1%
DEMOESY1	40	1,148	96.5%
DEMOESY2	1,528	8,446	81.9%
DEMOESY3	34	1,130	97.0%

<https://www.ibm.com/support/pages/code-samples-showing-generated-cobol-vs-ca-easytrieve-plus%C2%AE>

Easytrieve can access many data sources

Reporting and ETL on multiple data sources

- **VSAM** and **Sequential** files
- **DB2**
- **IMS**
- **IDMS** and **Datacom**
- **Oracle** and other **SQL/ODBC** databases
- Some legacy databases like **Total** and **Supra**

Join a Mainframe Technical Exchange

Apr. 21-23, 2026

European MTE
Prague, Czech Republic

June 23-25, 2026

Virtual MTE
Held Virtually

Oct. 20-22, 2026

North American MTE
Plano, TX



- Network with peers and Mainframe technical experts
- Participate in technical how-to sessions and hands-on workshops
- No registration fee!



Questions?

Ask away!

Our Thanks!

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Submit a session evaluation for each session you attend:

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-or-

www.share.org/evaluation

