

Mike Fechner



35 years of experience in Progress (from Version 5 to OpenEdge 12)

Active member of the OpenEdge community and speaker at international conferences

Expert in software architecture, objectoriented design, and web technologies

Modernization in Focus



Modernization of Legacy OpenEdge Applications



Deep Technical Expertise



Global IT Partner with Local Presence



More than
Consulting – We
Deliver Tools &
Solutions

Other Al presentations

- Windsurf IDE & Co: AI Coding Assistants for OpenEdge
 - Monday 14:15
- Modernizing OpenEdge Applications with the SmartComponent Library
 - Tuesday 11:00
- Implementing MCP servers with OpenEdge
 - Wednesday 11:00



Gen Al and OpenEdge?

- "I have tried Chat GPT last year and the FOR EACH Customer is generated didn't even compile"
- "There's not enough open-source ABL code available to train LLM's"
- "ABL applications are too complex for an AI to understand"
- **...**



GenAl

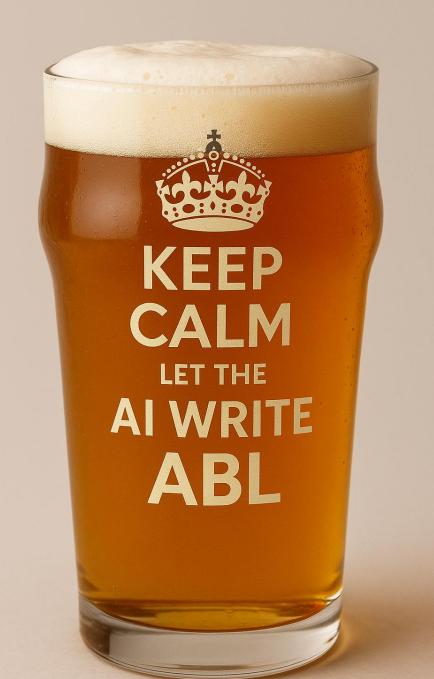
"Generative artificial intelligence (generative AI, GenAI, or GAI) is artificial intelligence capable of generating text, images, videos, or other data using generative models, often in response to prompts. Generative AI models learn the patterns and structure of their input training data and then generate new data that has similar characteristics."

"Generative AI has uses across a wide range of industries, including software development, healthcare, finance, entertainment, customer service, sales and marketing, art, writing, fashion, and product design."

https://en.wikipedia.org/wiki/Generative_artificial_intelligence







the full stack modernization framework

SmartComponent Library

GenAl in Software development

- Supporting of developers while writing code
- More intelligent proposals while coding
- Chat: "write me a method that solves XYZ ", "write me a unit test for this method "), Boiler Plate Code – the new kind of wizards
- Explanation of Code, proposal for comments
- Refactoring of Code
- Understanding of the context
 - Programming languages
 - Frameworks
 - Application model / Terms, e.g. Database schema

1 Windsurf

Codeium / Windsurf

- Rebranded to "Windsurf" end of 2024/early of 2025
- Al Assistant for Software developer
- Used at Consultingwerk since end of March 2024
- Resulting proposals improved day by day
- 70 programming languages no ABL support out of the box ⊗
- 40 IDE's (including VS Code and Eclipse), works well in PDSOE 12.8





Windsurf IDE

- Tailored version of VS Code
- Windsurf AI Extension built in
- More access to resources in the IDE than what Microsoft supports in the language server protocol
- Alternatives: VS Code with Copilot or Cursor or ...

Windsurf

- Amazing results in code completion for OpenEdge after just a few days
- Excellent understanding of ABL code
 - ABL is a very verbose programming language almost readable with knowledge of English
 - Descriptive identifiers in the code are helpful
- Programming Context
 - Framework code
 - Legacy application
 - Modernized application
- Valuable support when working with unfamiliar codebases



software architecture and development

```
define variable cCustomerName as character no-undo. define variable i as integer no-undo. define variable iCount as integer no-undo. define variable deAverage as decimal no-undo. define variable deAverage
```

00000

software architecture and development

```
/**
* Purpose: Adds additional fields specified by the caller to the current Business Ent
* Notes : This is a stub implementation and can be extended to parse and add fields
* @param pcAdditionalFields A comma delimited list of additional fields to add
* @param phDatabaseDataset The handle to the dataset with the schema information
*/
method protected void AddAdditionalFields (pcAdditionalFields as character,
                                           phDatabaseDataset as handle):
   define variable i as integer no-undo .
    define variable iCount as integer no-undo .
                                                      You, 36 seconds ago • Uncommitted
                             iCount = num-entries (pcAdditionalFields, ",":U) .
end method.
                            do i = 1 to iCount:
/**
* Purpose: Returns a
                             end.
* Notes:
* @param pcTableName
                         end method.
 + Operam petudoveialde The comma delimited list of field names
```

00000

```
method public void ProcessOrder (piOrderNum as integer):
     define variable oOrder as OrderDatasetModel no-undo.
     define variable oCustomer as CustomerDatasetModel no-undo.
     oOrder = new OrderDatasetModel().
     oOrder:Order:Filter:Ordernum:EQ(piOrderNum):Run().
     if not oOrder:Order:Available then
        undo, throw new AppError("Order not found", 0). <
     oCustomer = new CustomerDatasetModel().
     oCustomer:Customer:Filter:CustNum:EQ(oOrder:Order:CustNum):Run().
if not oCustomer:Customer:Available then
         undo, throw new AppError("Customer not found", 0).
```

```
WHEN JsonDataType:NUMBER THEN DO:
IF JsonHelper:IsIntegerProperty (poJson, cProperty) THEN DO: ←
...poJson:GetInteger (cProperty)),
DYNAMIC-PROPERTY (ENTRY (1, cProperty, ":":U),
ENTRY (2, cProperty, ":":U)) = poJson:GetInteger (cProperty) .
· · · · END ·
ELSE IF JsonHelper: IsInt64Property (poJson, cProperty) THEN DO:
IF LOG-MANAGER:LOGFILE-NAME <> ? OR SESSION:REMOTE OR SESSION:CLIENT-TYPE = "WEBSPEED":U THEN
.....cProperty,
poJson:GetInt64 (cProperty)),
"Startup":U) • 4
DYNAMIC-PROPERTY (ENTRY (1, cProperty, ":":U),
ENTRY (2, cProperty, ":":U)) = poJson:GetInt64 (cProperty) .
· · · · END ·
····ELSE·DO:
IF LOG-MANAGER: LOGFILE-NAME <> : OR SESSION: REMOTE OR SESSION: CLIENT-TYPE == "WEBSPEED": U THEN
LOG-MANAGER:WRITE-MESSAGE (SUBSTITUTE ("### Setting '&1' to INTEGER '&2'":U,
poJson:GetDecimal (cProperty)),
"Startup":U) · .
DYNAMIC-PROPERTY (ENTRY (1, cProperty, ":":U),
ENTRY (2, cProperty, ":":U)) = poJson:GetDecimal (cProperty) . <
· · · · END · ←
```

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```
WHEN JsonDataType:NUMBER THEN DO:
          IF JsonHelper:IsIntegerProperty (poJson, cProperty) THEN DO:
        ····LogManager:WriteFormattedMessage("### Setting '&1' to INTEGER '&2'":U,
              cProperty,
              poJson:GetInteger (cProperty),
           ····DYNAMIC-PROPERTY (ENTRY (1, cProperty, ":":U), <
        ENTRY (2, cProperty, ":":U)) = poJson:GetInteger (cProperty) .
       • • • • END • ←
       ELSE IF JsonHelper:IsInt64Property (poJson, cProperty) THEN DO:
       ····LogManager:WriteFormattedMessage("###-Setting-'&1'-to-INTEGER-'&2'":U, <
           cProperty,
                                poJson:GetInt64 (cProperty),
          ···· NEW MessageSubSystem("StaticProperties":U)) · . ←
       ... DYNAMIC-PROPERTY (ENTRY (1, cProperty, ":":U), <
       ENTRY (2, cProperty, ":":U)) = poJson:GetInt64 (cProperty) . 
       ····END. ←
       · · · · ELSE · DO : ←
       LogManager:WriteFormattedMessage("### Setting '&1' to DECIMAL '&2'":U,
                                      cProperty.
                                     poJson:GetDecimal (cProperty),
                                     NEW MessageSubSystem("StaticProperties":U)) .
        ····IF LOG-MANAGER:LOGFILE-NAME <> .? OR SESSION:REMOTE OR SESSION:CLIENT-TYPE = "WEBSPEED":U THEN
           LOG-MANAGER:WRITE-MESSAGE (SUBSTITUTE ("### Setting '&1' to INTEGER '&2'":U,
           poJson:GetDecimal (cProperty)),
       ····DYNAMIC-PROPERTY (ENTRY (1, cProperty, ":":U), <
            ENTRY (2, cProperty, ":":U)) = poJson:GetDecimal (cProperty) .
                                                                                    ization framework
© 2025 Cons
                                                                                    onent Library
        ····END. ←
```

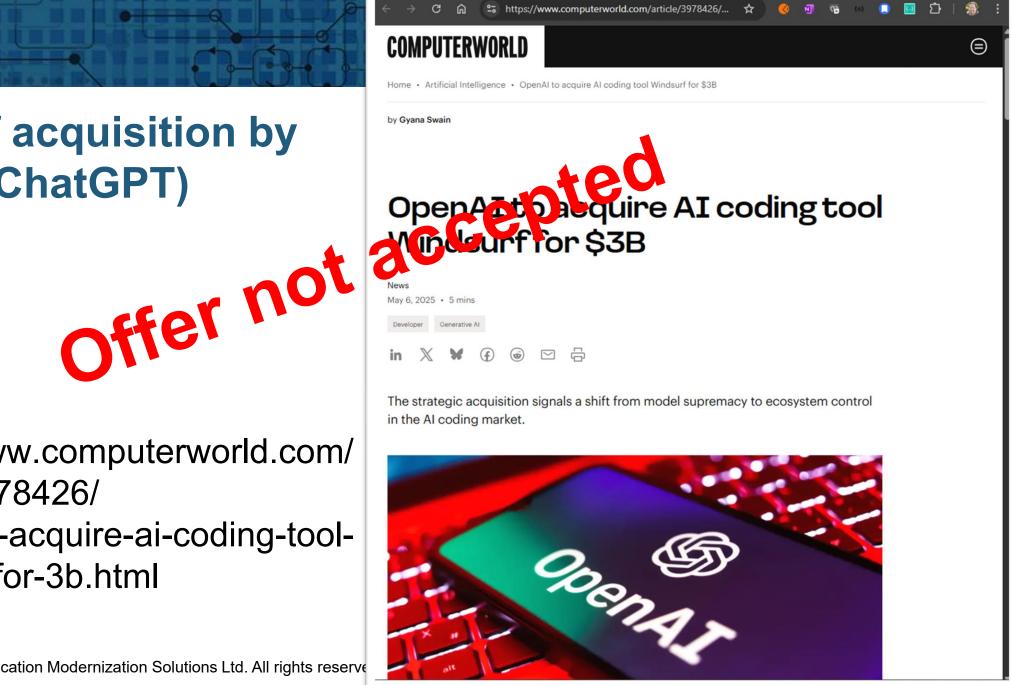
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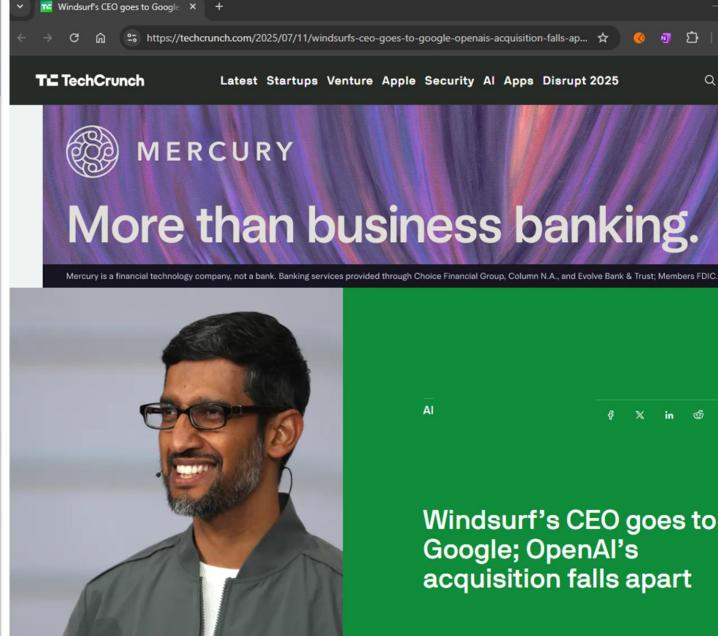
Windsurf acquisition by **OpenAl (ChatGPT)**

Source: https://www.computerworld.com/ article/3978426/ openai-to-acquire-ai-coding-toolwindsurf-for-3b.html



CW OpenAl to acquire Al coding to X +





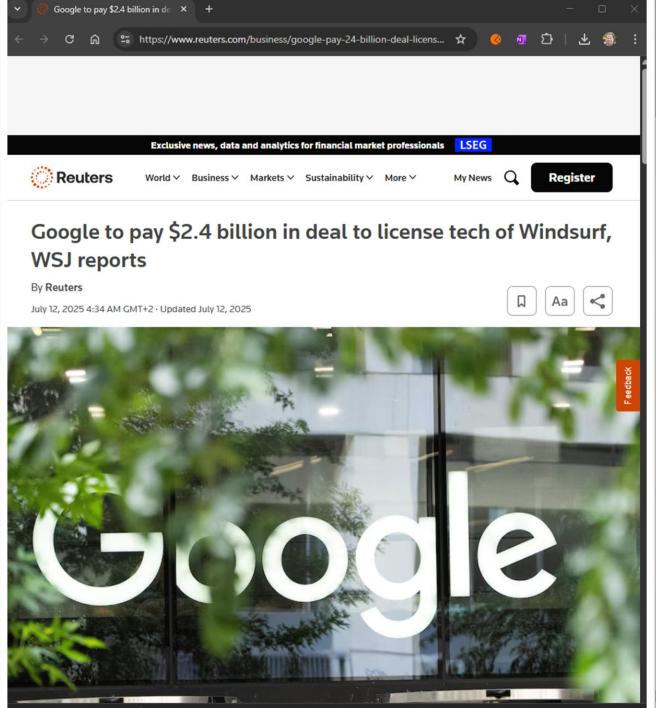
Windsurf's CEO goes to Google; OpenAl's acquisition falls apart

Source: https://techcrunch.com/ 2025/07/11/windsurfsceo-goes-to-googleopenais-acquisitionfalls-apart/



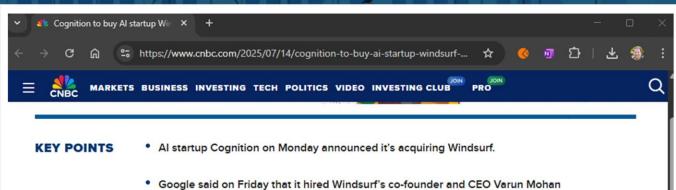
Source:

https://www.reuters.com/business/google-pay-24-billion-deal-license-tech-windsurf-wsj-reports-2025-07-12/





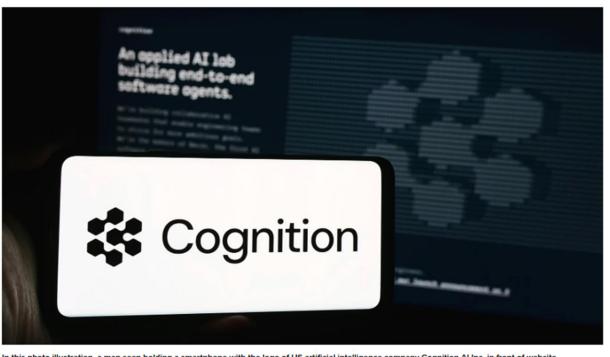
 Source: https://www.cnbc.com/2025/ 07/14/cognition-to-buy-aistartup-windsurf-days-aftergoogle-poached-ceo.html



Cognition said it will purchase Windsurf's IP, product, trademark, brand and

talent, but the company did not disclose terms of the deal.

and other senior employees.



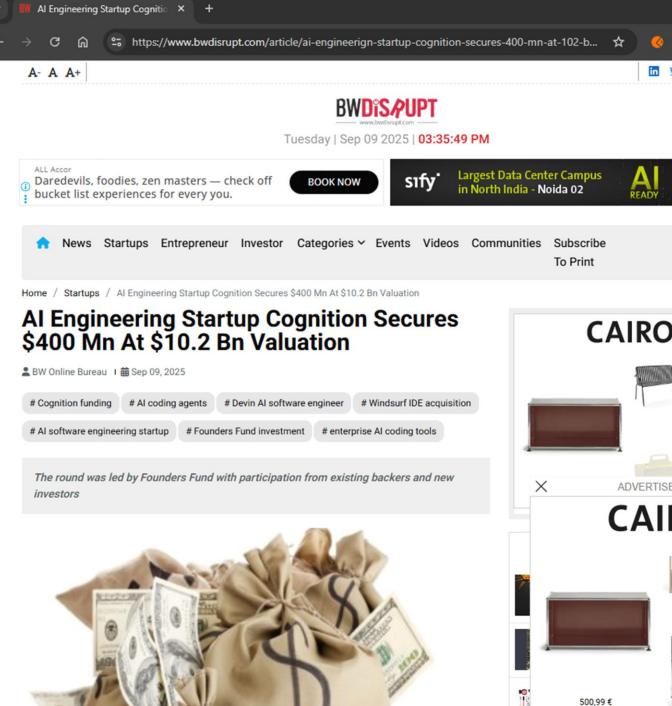
In this photo illustration, a man seen holding a smartphone with the logo of US artificial intelligence company Cognition Al Inc. in front of website.

Timon Schneider | SOPA Images | Sipa USA | AP

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 https://www.bwdisrupt.com/ article/ai-engineerign-startupcognition-secures-400-mn-at-102-bn-valuation-570698





Cognition (Windsurf) Named a Leader in the 2025 Gartner® Magic Quadrant™ for AI Code Assistants

 https://windsurf.com/blog/ gartner-windsurf-cognitionmagic-quadrant-ai-codingassistants

Figure 1: Magic Quadrant for AI Code Assistants





Windsurf now part of Cognition

- Startup Cognition developer of Devin.ai
- Development ongoing
- Windsurf and Devin growing together
- First Devin features appear in Windsurf

Demo Windsurf

- Intelligent auto-completion
- Tab-to-jump
- Cascade, prompt-based development
- OpenEdge syntax
- SmartFramework MCP Server

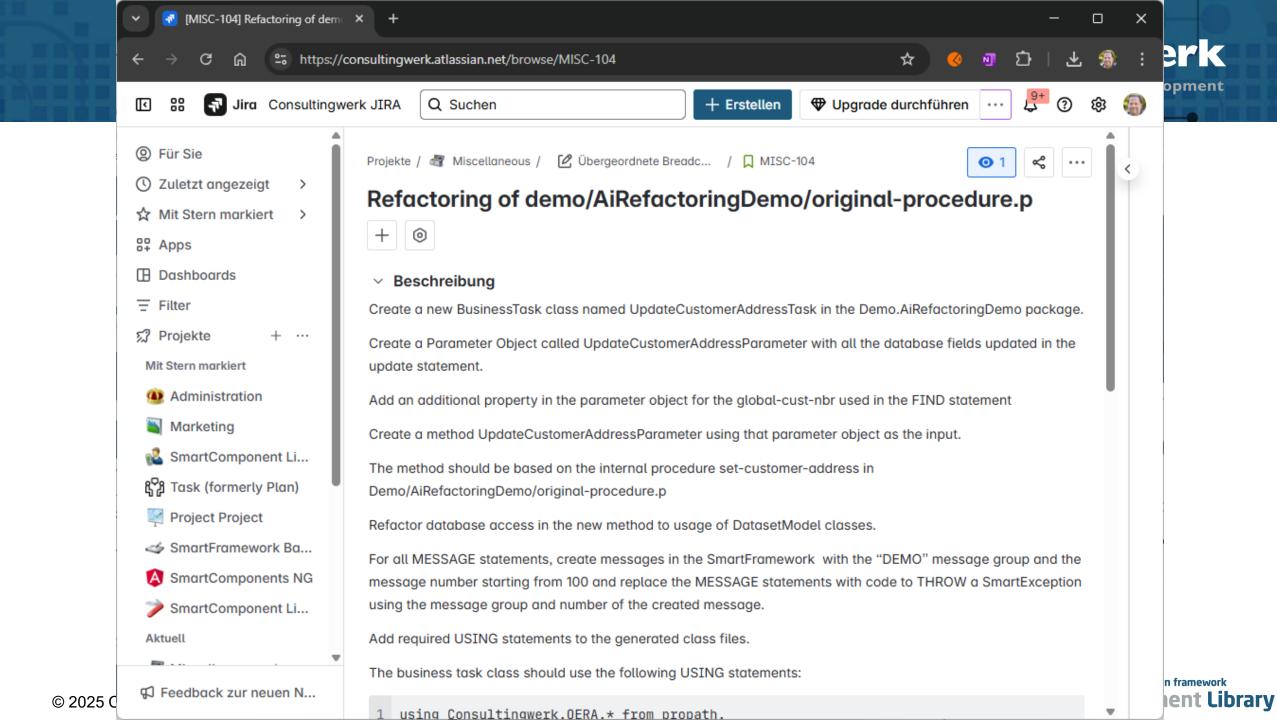
Sample prompts

- Create an Enum of Workdays
- Create a parameter object DateRangeParameter with a DateFrom and DateTo property.
- Then create an Interface IWorkdayCalculator with a method CalculateWorkdays that receives the parameter object instance and returns in Integer - the number of workdays. Create implementation class WorkdayCalculator

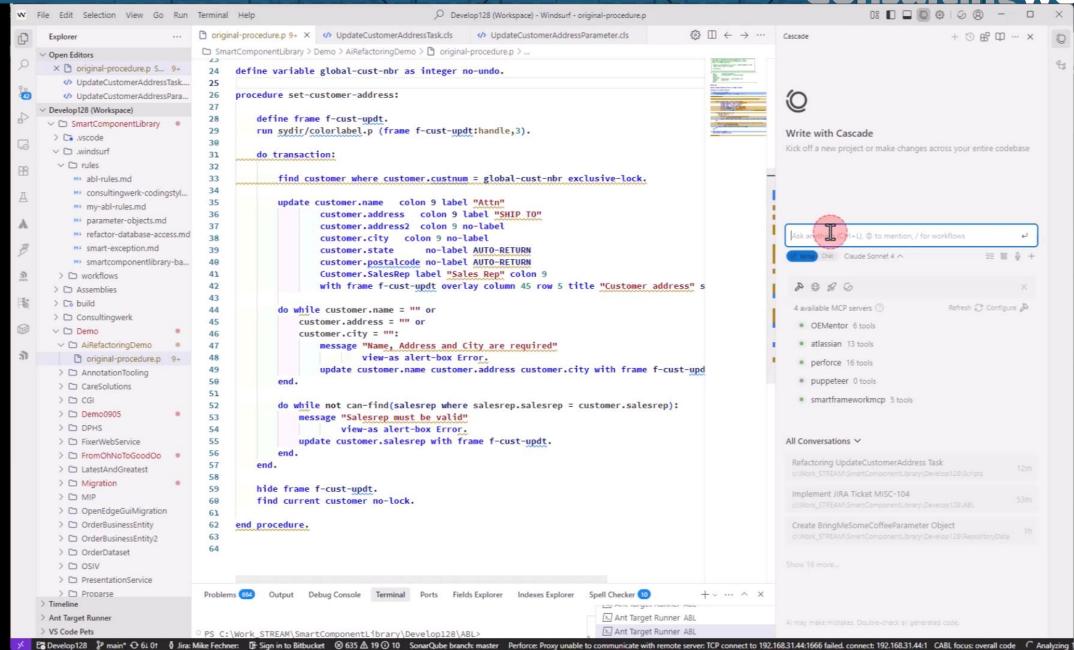
Refactoring sample

- Simple sample based on real world code of a customer
- Legacy code
- Demo video
- Refactored code

"Look at JIRA ticket MISC-104 and implement as required"



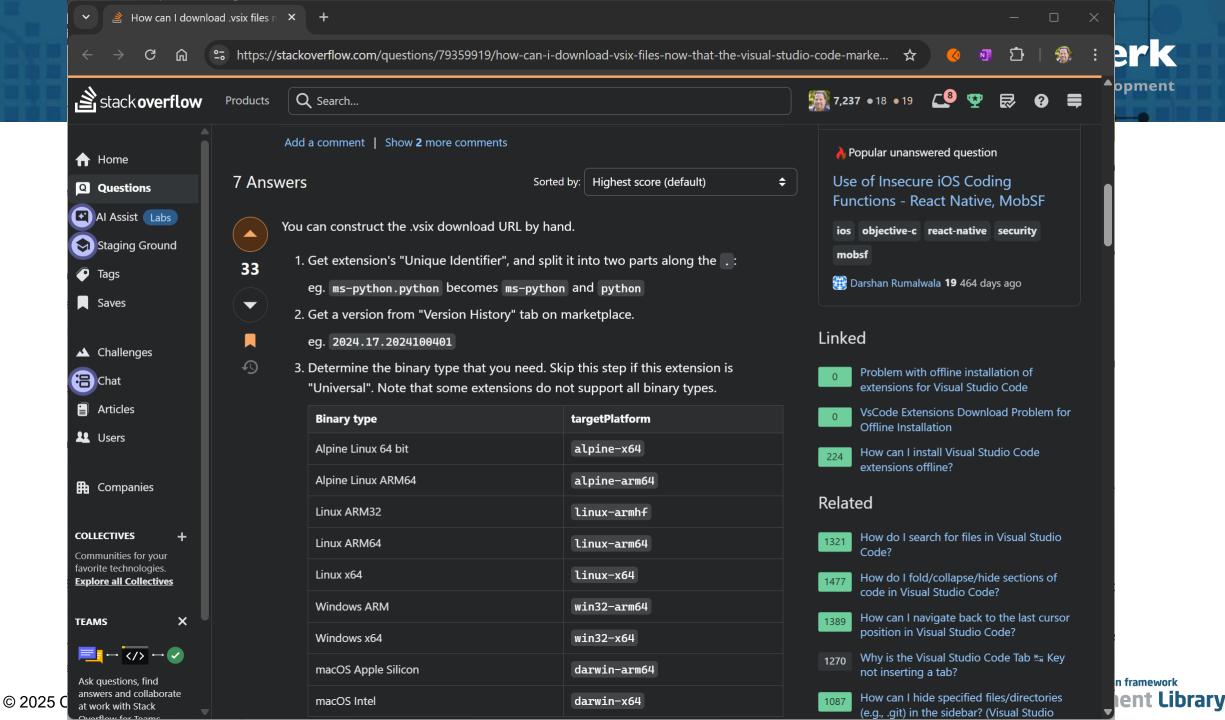
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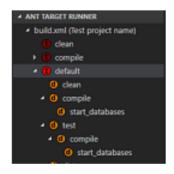


SmartComponent Library

VS Code Extensions in Windsurf

- Microsoft does only allow true VS Code to use their Extension Store
- Many not all extensions are published to open-vsx.org
- Windsurf uses a mirror of open-vsx.org
- Requires extension vendor to publish twice
- Extensions not found on open-vsx.org
 - Speak to publisher and ask to publish it there some did
 - Rebuild .vsix file from Github repository
 - Download from Microsoft store
 - https://stackoverflow.com/questions/79359919/how-can-i-download-vsix-files-now-that-the-visual-studio-code-marketplace-noThe full stack modernization framework





Ant Target Runner

Run Ant targets, manually & automatically, with colorized Ant output.









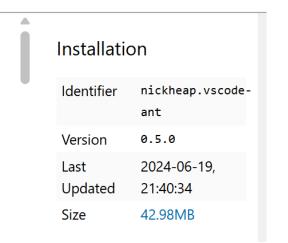
DETAILS

FEATURES

CHANGELOG

Ant Target Runner for Visual Studio Code

An ant extension that parses build.xml in the root directory (but you can configure it to look elsewhere) and allows you to easily run the targets or reveal their definitions. Ant build output can be colorized, environment variables can be set and targets can be automatically run on changes in the file system.



https://marketplace.visualstudio.com/ apis/public/gallery/publishers/nic kheap/vsextensions/vscode-ant/0.5.0/vspackage



ture and development

Windsurf customization options

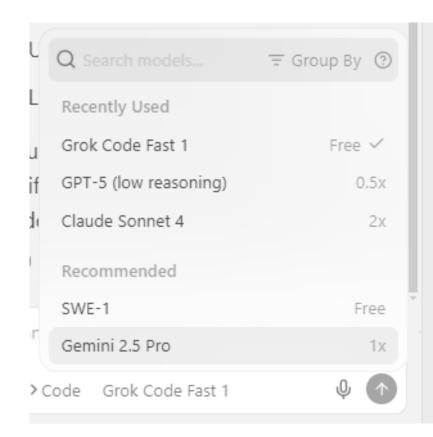
- Rules (global and project based)
- Workflows
- MCP Servers

Al Agents and the LLM

- An Al agent is a Program that connects users, tools and the LLM
- LLM receives prompt from agent
 - System prompt "you are a useful developer agent specialized in refactoring existing code", here are relevant rules ...
 - User prompt "write Enum for Weekdays"
- Al agent can provide list of "tools" with prompt
- LLM then analyses the prompt (letter by letter) and returns answer or suggested tools
- All agent can execute tools and call into LLM again with tool result

Al Agents and the LLM

- LLM's are stateless services
- "Trained" on data a few weeks or months old
- LLM's don't have memory, they don't remember what they did for you a minute ago
- Agents can add memory, RAG, tools
- LLM API mostly compatible to OpenAI's GPT API (Chat GPT, 2022+)
- Different LLM's have different strengths



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software architecture and development



Devin – the step-brother of Windsurf

- Cloud based Al development environment
- Designed to run larger tasks in the Cloud
- Code-Wiki
- Devin Machine
- VS Code in the browser
- https://devin.ai/
- "Develop in Al"

Devin

- Devin Setup
- Devin Deep Code Wiki where is VAT calculated in the Beckelmann Application?
- Devin JIRA Task execution
- Devin Pull-Requests

JIRA Ticket samples

- https://consultingwerk.atlassian.net/browse/SCL-4965
- https://consultingwerk.atlassian.net/browse/SCL-4961
- https://consultingwerk.atlassian.net/browse/SCL-4958

Live coding

- https://consultingwerk.atlassian.net/browse/MISC-109
- https://app.devin.ai/sessions/673b3d55a2c940e6a3c08829d821fb7f

Testing code developed by Devin

- Install OpenEdge in Devin machine?
- As soon as PR is issued, Integration build on Jenkins is started
- ~ 20.000 Unit Tests executed
- Checkout branch locally to modify code and test
- **-** ...

CLI based tooling

- Tools running locally, but outside the IDE
- Use your favorite IDE, even vi or Emacs
- Claude Code, Google Gemini CLI, Atlassian Rovo Dev Agent, ...
- All supporting MCP servers



Claude Code can now be used with your Cla based on API usage through your Console a

Select login method:

- >1. Claude account with subscription Starting at \$20/mo for Pro, \$100/mo for pricing
 - 2. Anthropic Console account
 API usage billing

Gen Al in Application Modernization

- Currently large focus of our R&D
- Interpretation of existing code
- Transition to new application architecture
- Separation of UI and backend code, refactoring of source code

- Combination of Windsurf / Cascade / Devin with Proparse and XREF
- Proparse and compiler XREF are deterministic
- MCP Protocol Model Context Protocol, Tools and Resources
- Improving the interpretation of source code
- Integration of the SmartFramework UI Repository
- Windsurf "Rules" and "Workflows" for routine tasks
 - Programming rules for source code creation
 - Instructive (natural language) and through example code

Github

- Github (not just Git) seems to be the winner of the SCM tool battle
- Tools like Devin only support Github, Windsurf has some features that require Github
- Consultingwerk moved from Perforce to Github ⊗
- Because we're using an exotic programming language we don't need to make our life harder by using an exotic SCM tool too

Microsoft Devtunnel / NPM/NPX localtunnel

- Offers a secure HTTP/HTTPS tunnel from the cloud onto your developer PC
- Make PASOE accessible to the client
- Integration with inhouse build systems
- Integration with inhouse MCP servers (localtunnel)
- https://learn.microsoft.com/en-us/azure/developer/devtunnels/overview
- https://theboroer.github.io/localtunnel-www/

Lessons learned

- It works with OpenEdge!
- Choose the right tool for the job
- Need to accept source code (or parts of it) in the cloud
- LLM's are typically in the cloud
- No need to be a data-scientist to train AI coding assistants! Senior programmers or software-architects can do this!

Lessons learned

- Al tooling changes fast every second week a new LLM
- Al tooling become fashion ware expect to change it frequently
- No more sticking around with the same IDE for 20 years (PDSOE)
- CLI based tools also interesting but only played with them yet
- Different IDE's/Tools for different tasks or jump on a new horse if the current one gets passed

The role of a programmer is changing

- Describing a solution becomes more important than try-and-error coding
- Al will fail more likely in completely new structures, new solutions
- Requires some experience to decide what is a good task for AI
- Junior programmers challenged by wrong code generated by Al
- Testing, Code-Review, Refine Requirements
- Importance of natural language if you can express the task well enough in English (or German) the AI can implement it for you

The importance of frameworks is increasing

- Frameworks define architecture, standards, best-practices
- Frameworks define guardrails
- Frameworks provide code-sample
- Frameworks reduce code that needs to be generated
- Frameworks provide tooling that can be integrated
- Without Frameworks Gen AI is a great way to produce lots of unmaintainable code fast

Invest in QA tooling

- Unit Tests, many unit tests
- Code quality checks, CABL (SonarSource) or SIG
- Currently upgrading our very outdated Jenkins installation to enable visibility CI-job status in Github pull-requests

Monitor costs

- Devin says it's your new junior programmer it's on the payroll too
- Thinking about billing models with customers
- Windsurf licenses
- Devin subscription
- OpenAI (Chat GPT) subscription
- Claude (Anthropic) subscription
- Copilot in Office 365, Git Kraken AI, JIRA AI
- Motion



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Join Our Next Webinars



- October 9th Implementing MCP Servers With OpenEdge
- Integrate Chatbots Into OpenEdge Applications
- Using Windsurf IDE As An Al Coding Assistant For OpenEdge

UPCOMING WEBINARS

Questions



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