



mibuso.com

Collaborating on Business Central's open-source platform

Jesper Schulz-Wedde & Maria Zhelezova
MICROSOFT

10 YEAR ANNIVERSARY
10 YEAR ANNIVERSARY

www.bctechdays.com

Agenda

- Why Open Source?
- Universal Code (and how it relates)
- How do I contribute? A technical walkthrough...
- Current Status
- What's next?
- What's in it for you?
- Wrap up & Q&A

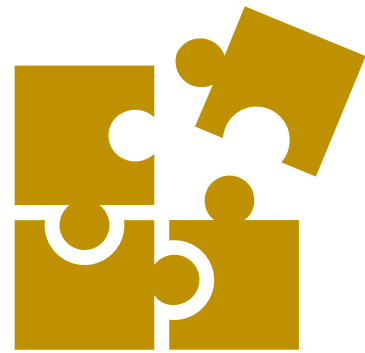
Why have a contribution model?



Accelerate Product Growth



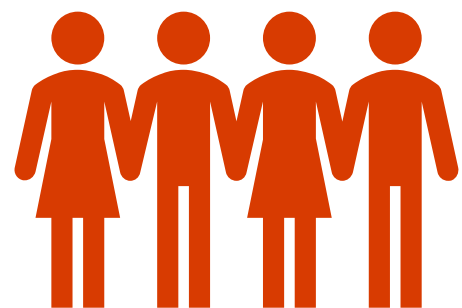
Improve Product Quality & Auditability



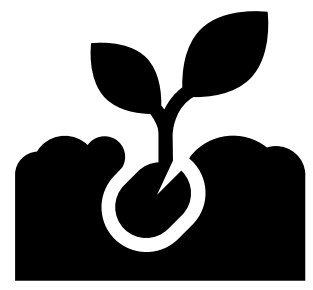
Enhance Extensibility, Customizability & Compatibility



Foster Collaboration

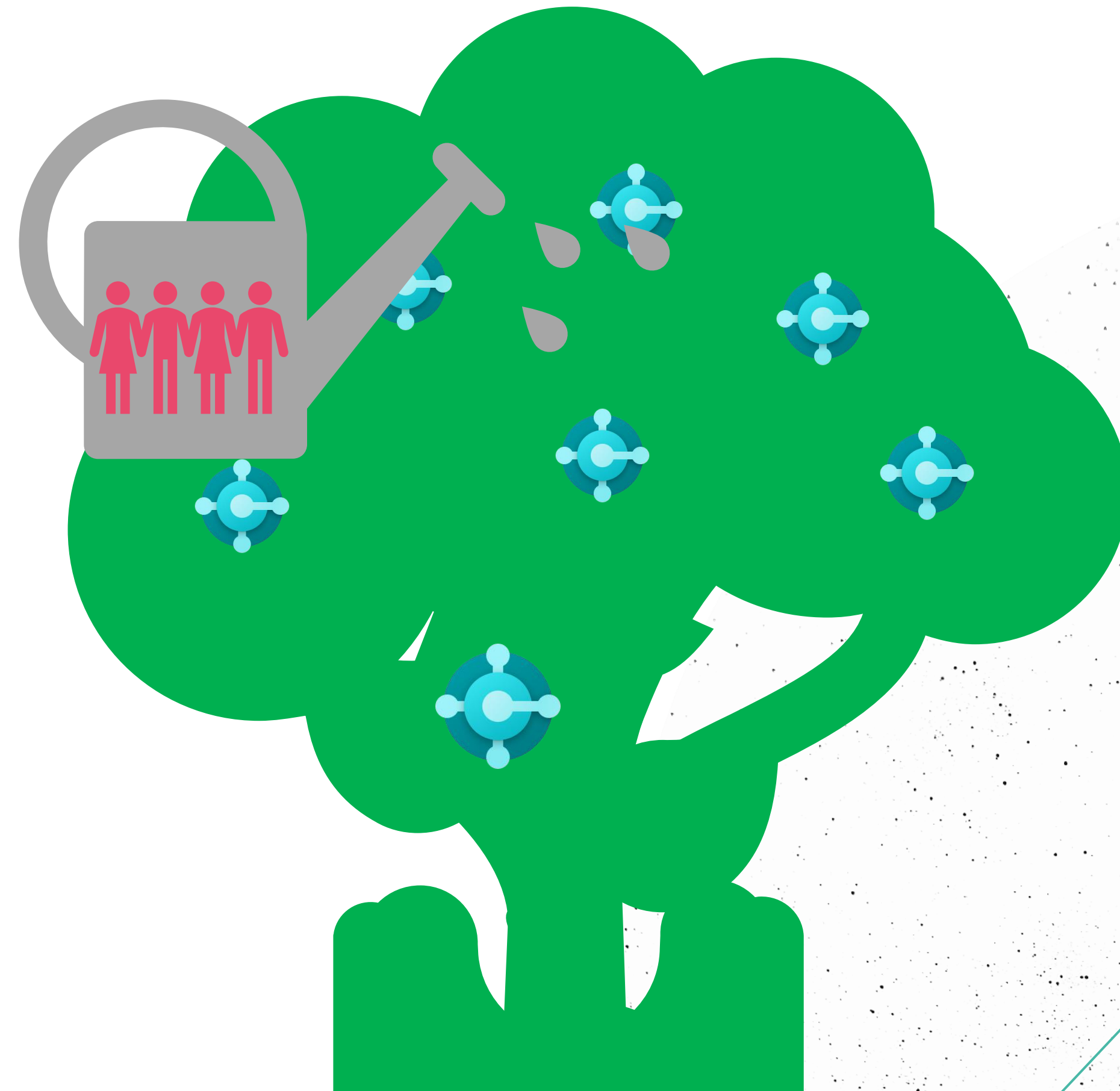


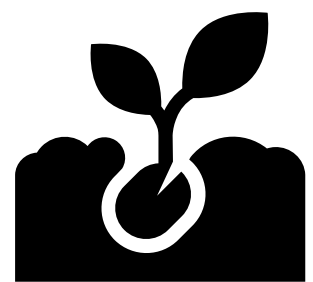
Develop Community



Product Growth: Market Opportunity

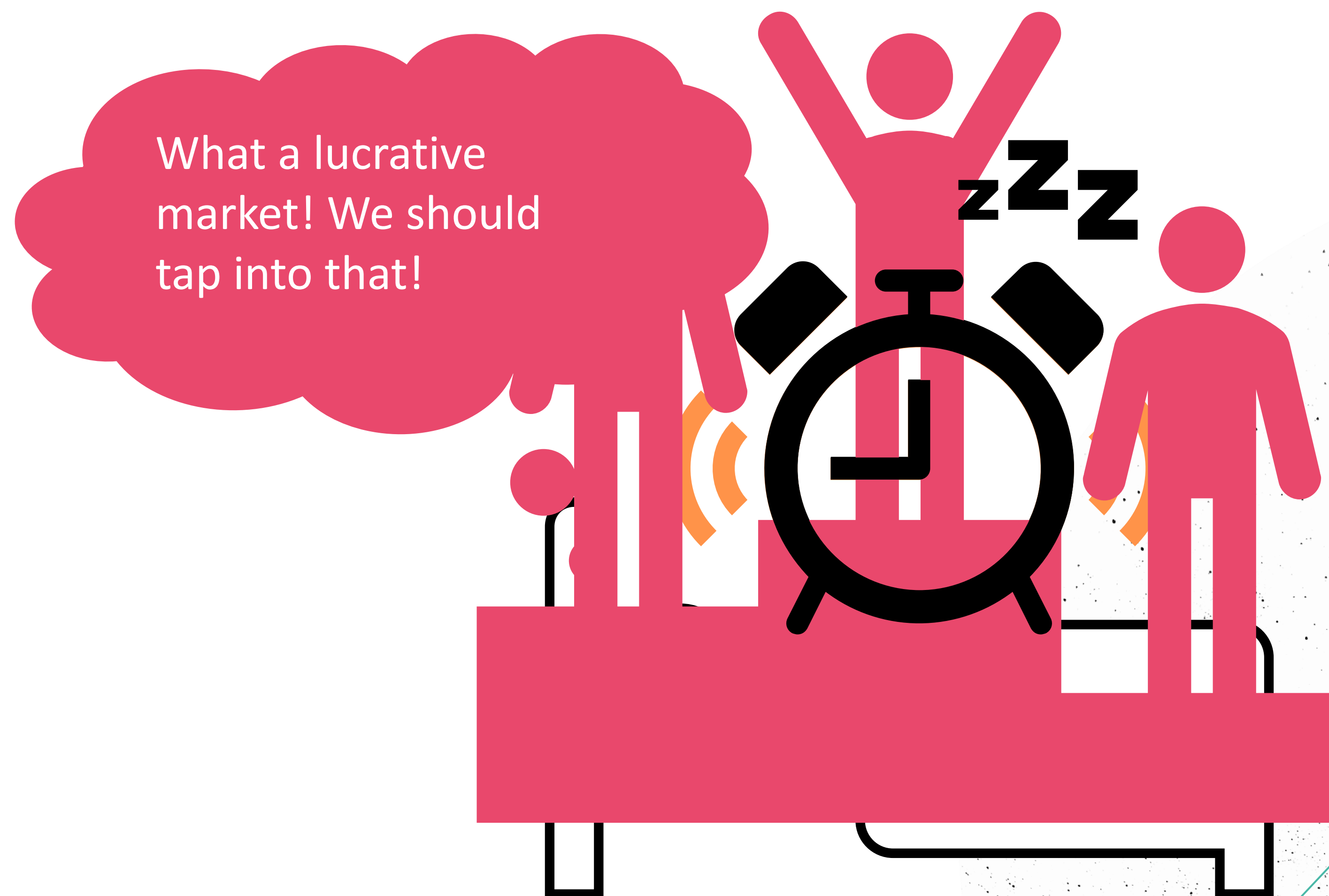
BC's market share has plenty of room for growth...

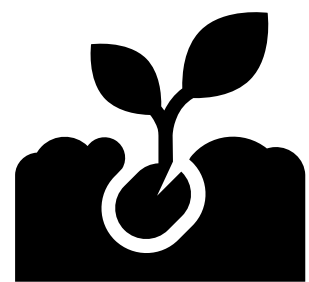




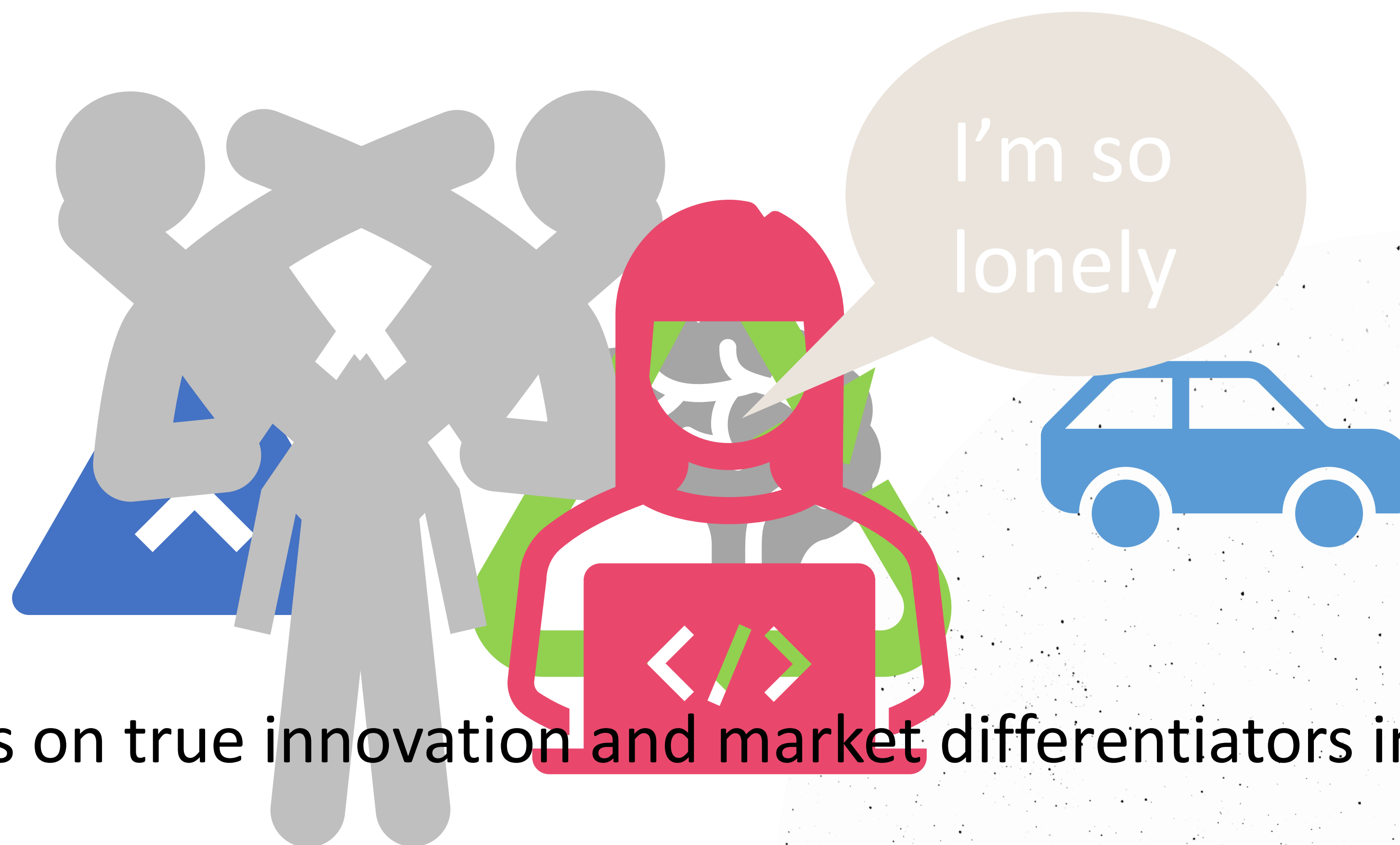
Product Growth: Competition

Get ahead of competition, before they wake up...

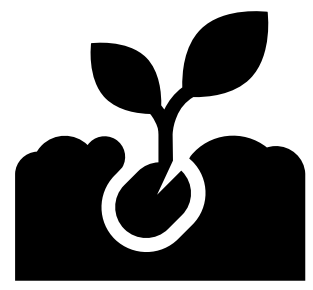




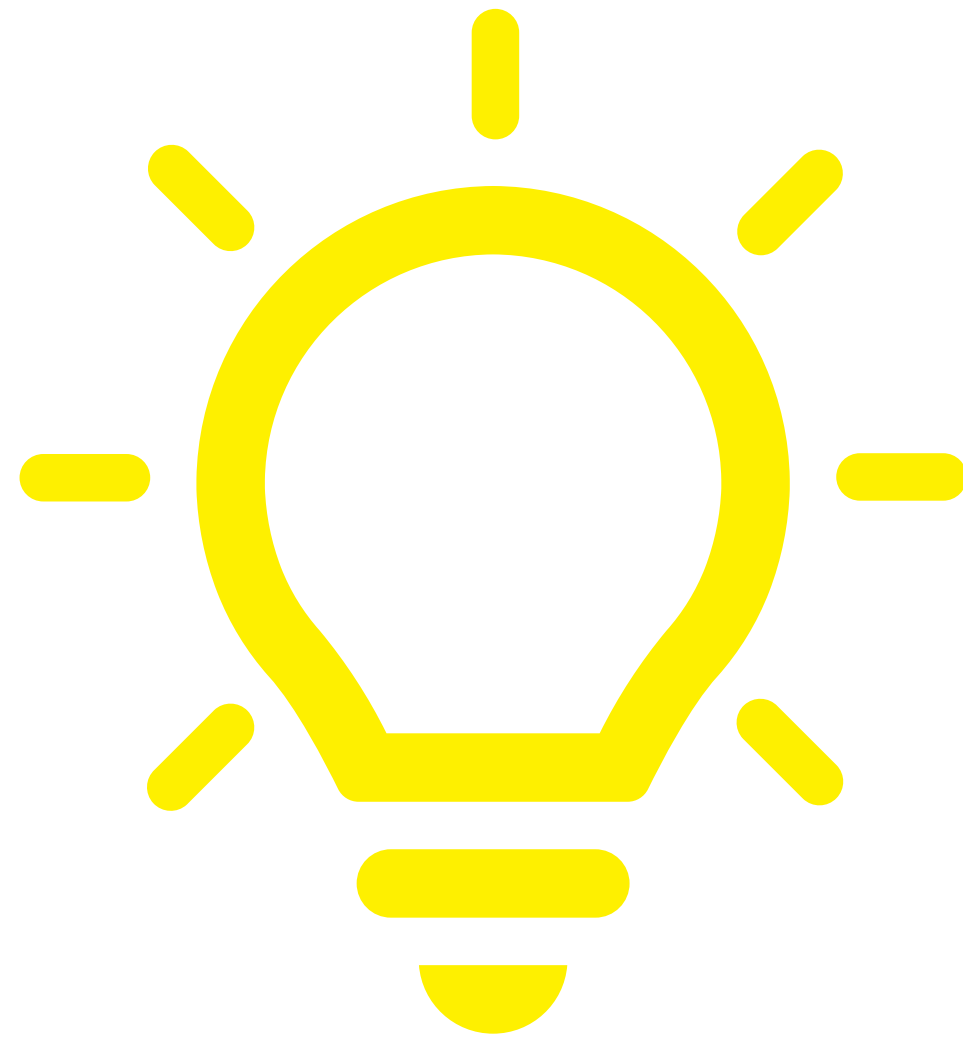
Product Growth: Get Ahead



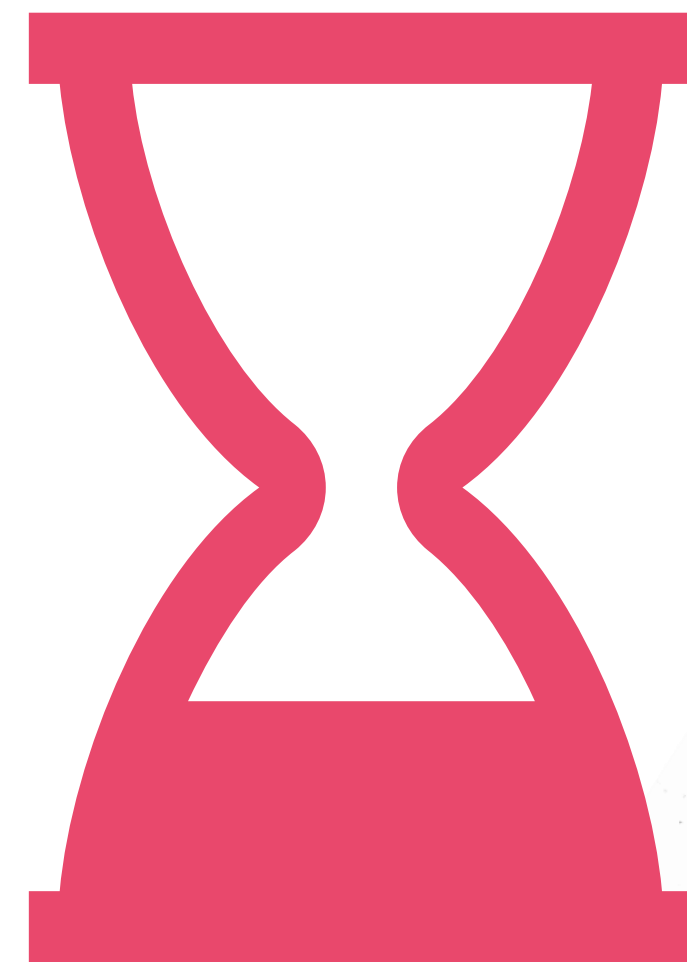
Focus on true innovation and market differentiators instead!



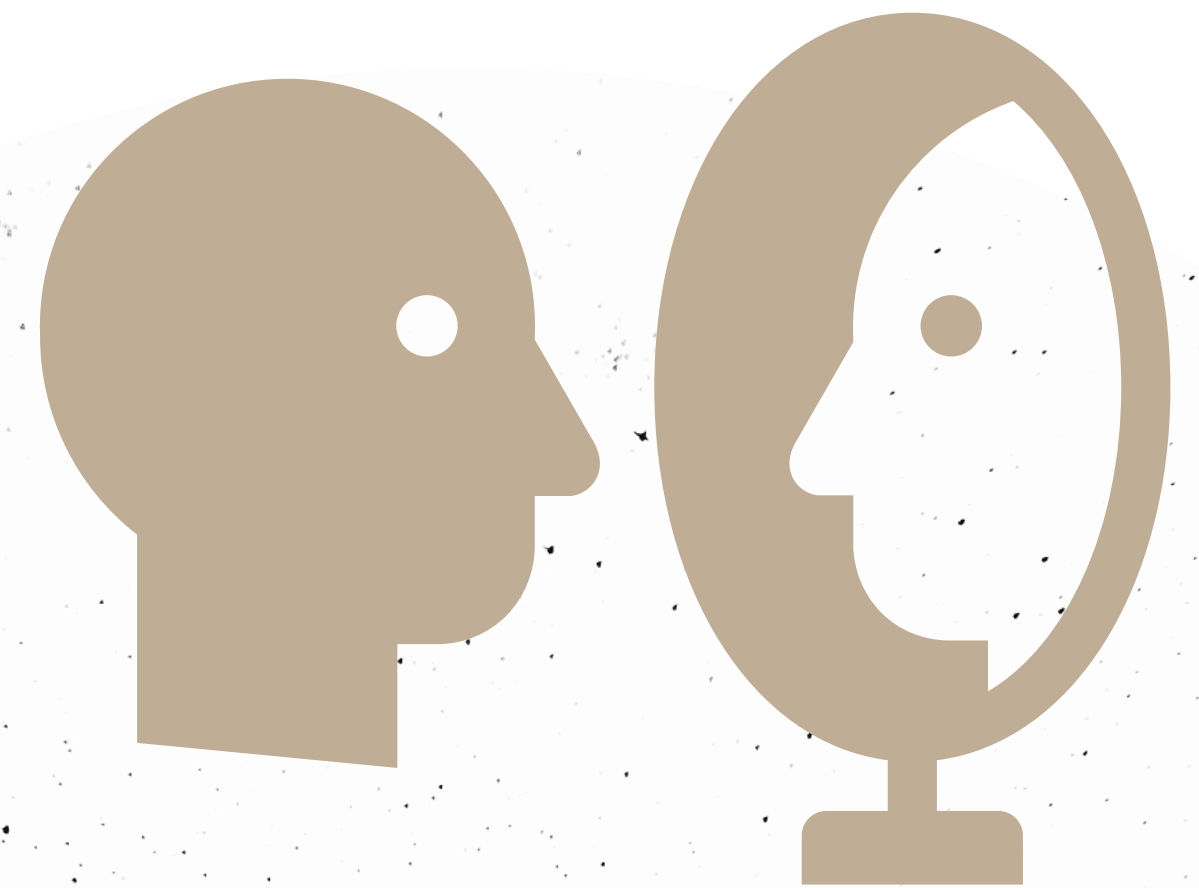
Product Growth: It's in your hands too!



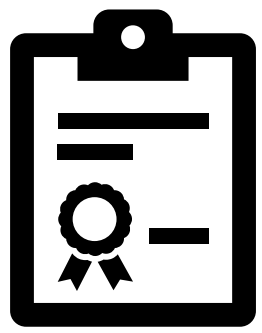
Have an idea?



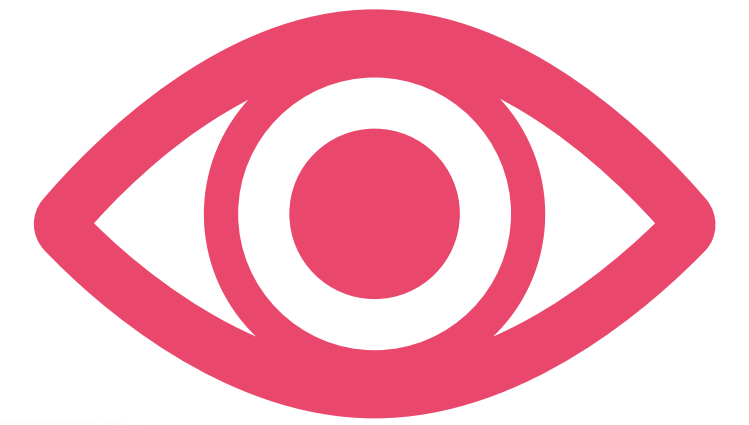
Don't wait for
Microsoft...



Take action
yourself!

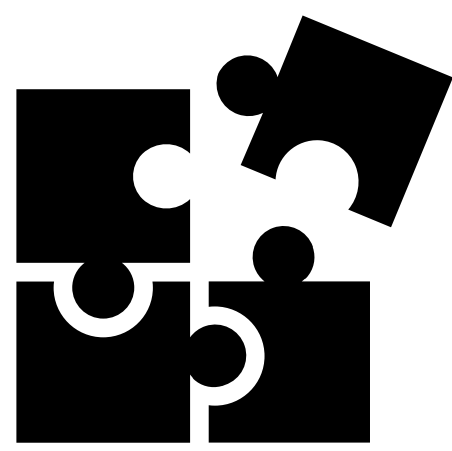


Product Quality and Auditability

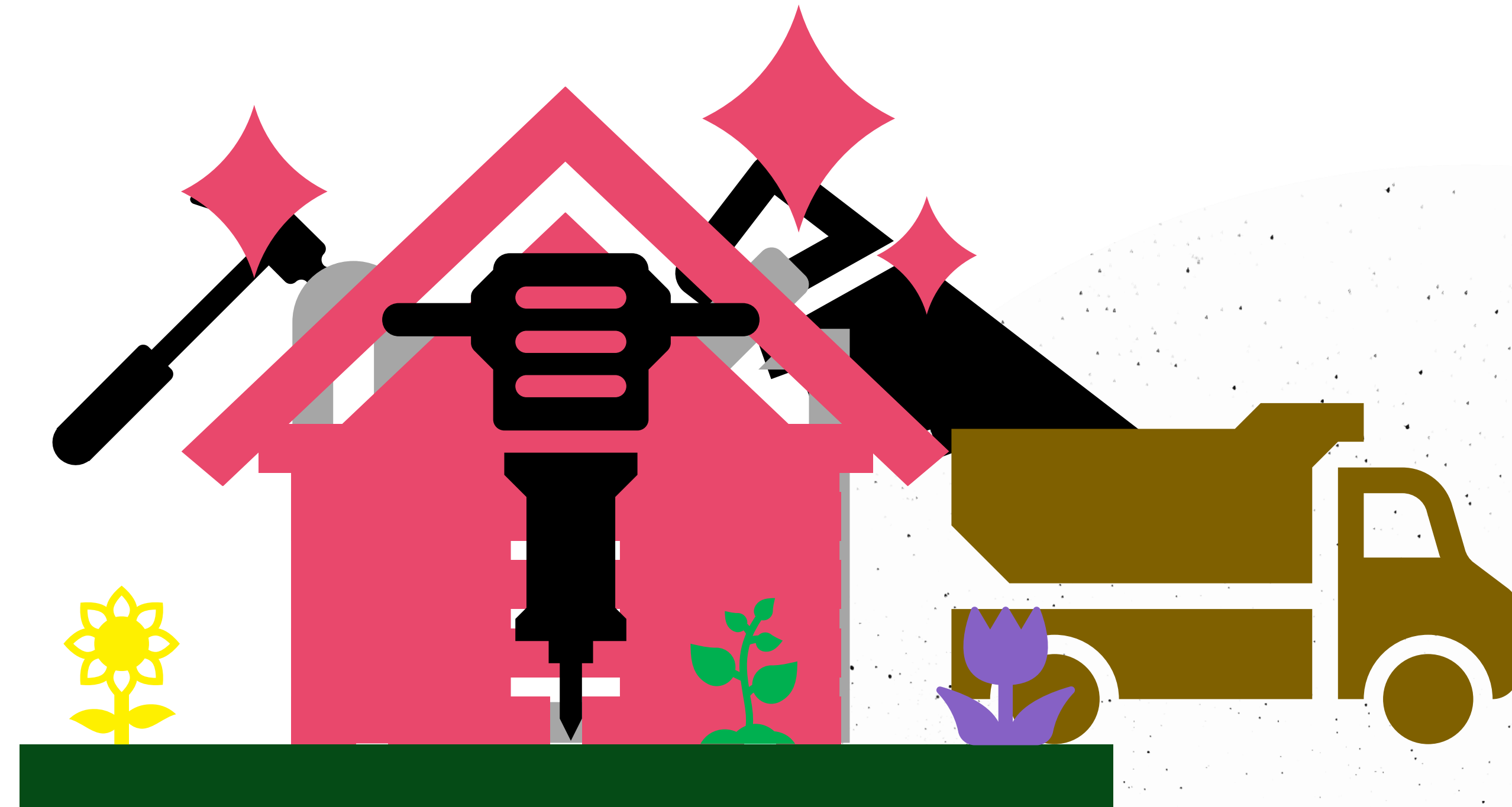


“Given enough eyeballs, all bugs are shallow.” - Linus’s Law





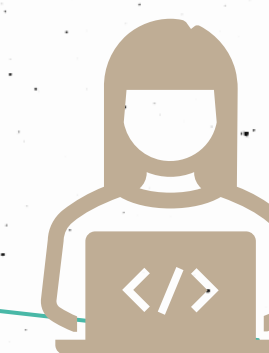
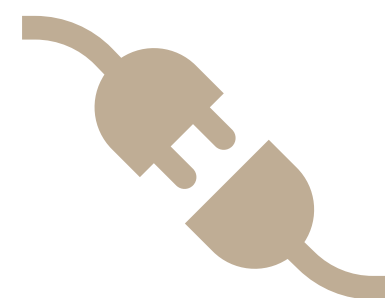
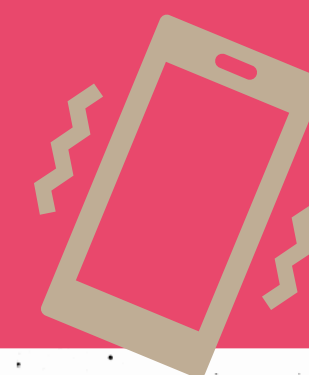
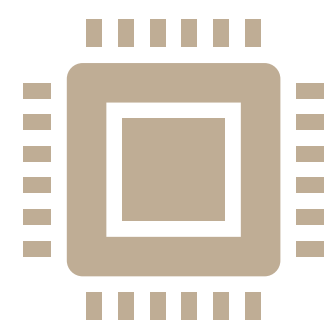
Extensibility, Customizability and Compatibility

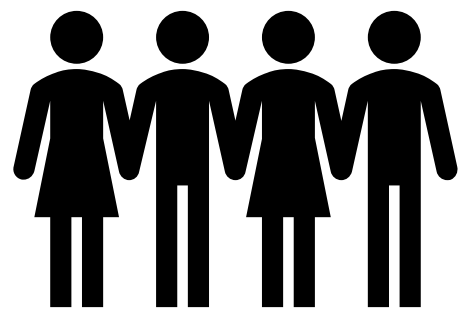




Collaboration

1010
1010





Community building and supportability



Open a dialog with the community, and we can find a way to help

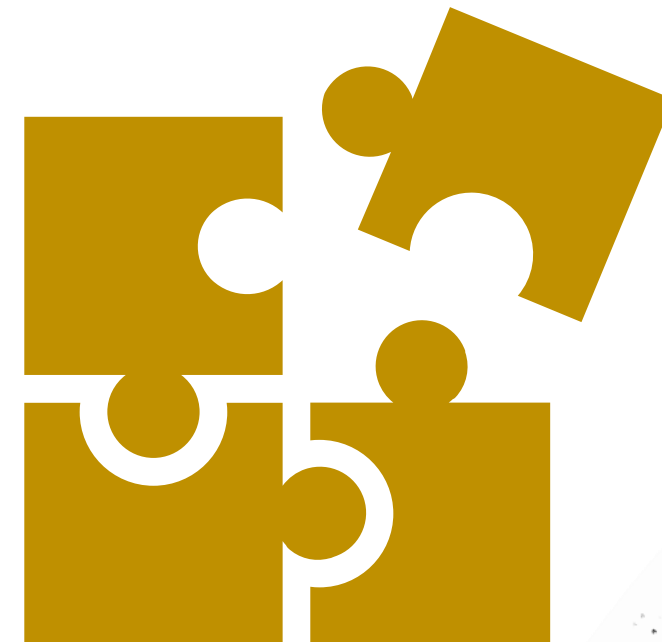
Conclusion: What are we hoping to improve?



Product Growth



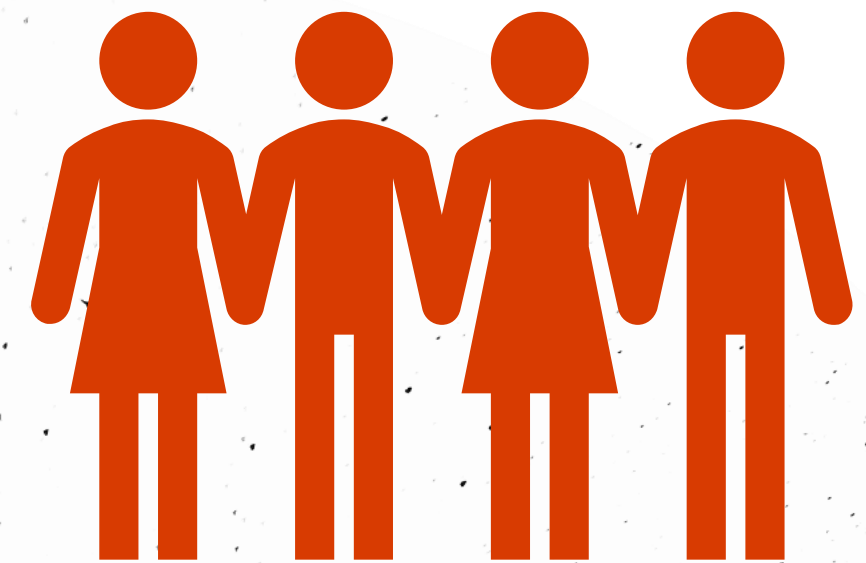
Product Quality &
Auditability



Extensibility,
Customizability &
Compatibility



Collaboration

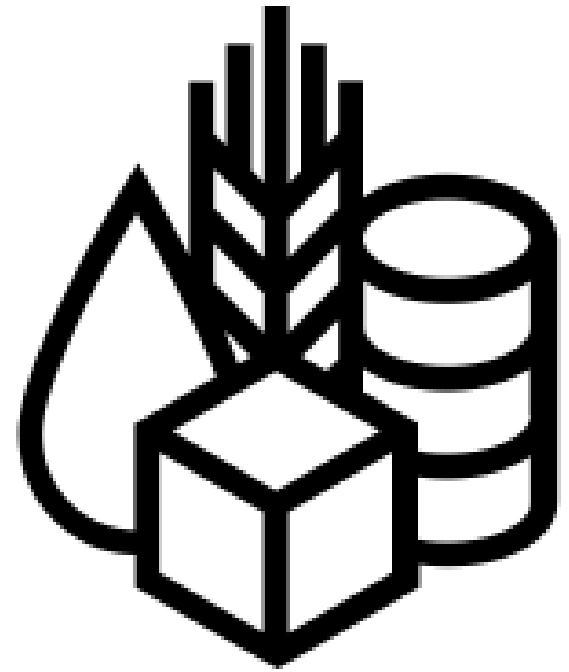


Community

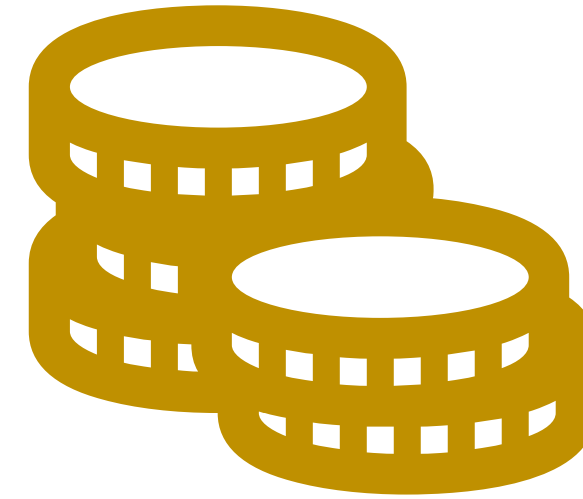
Universal Code



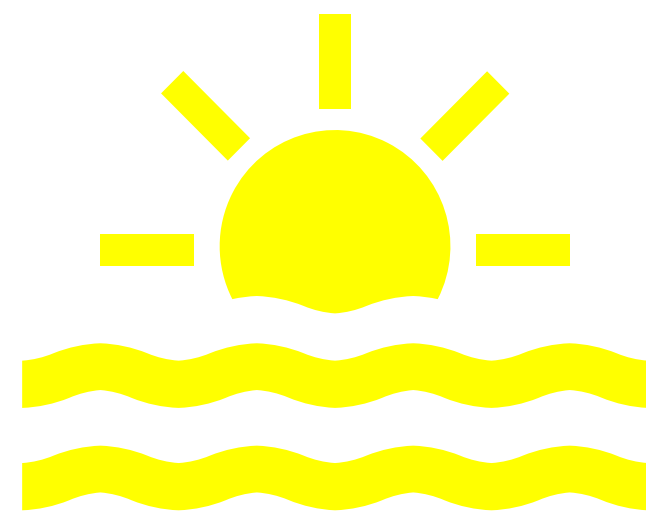
What to contribute?



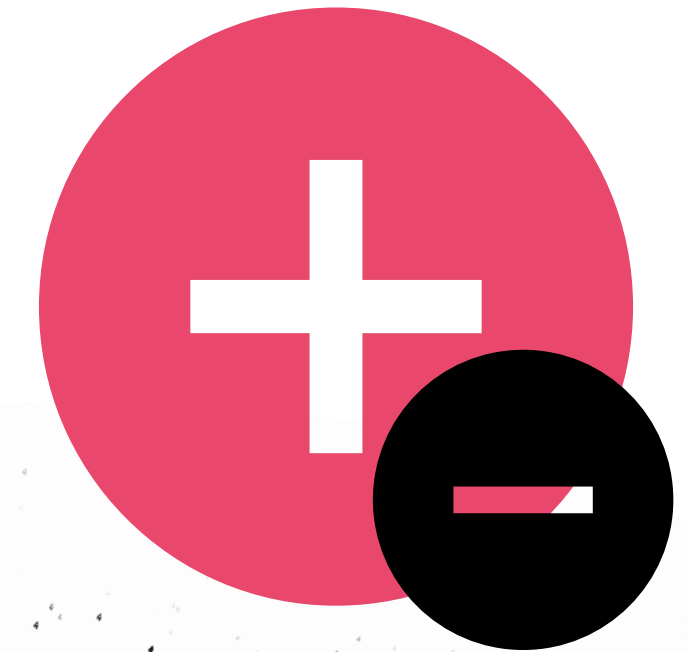
Commodity



Cannot
Monetize



Core Horizontal
Functionality



Small
Adjustments



Bug Fixes

A few recent examples



Integration to Azure Blob Storage



Integration to Azure Queue Storage (in development)

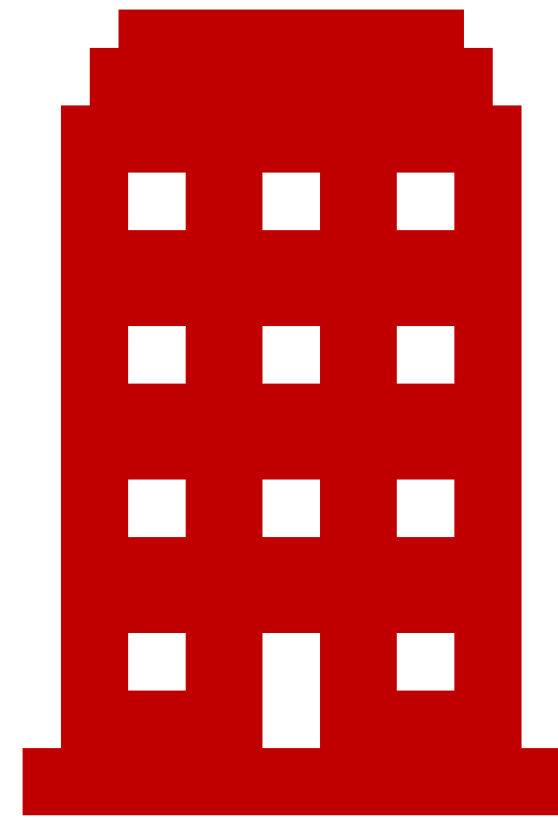


Integration to SharePoint (in development)



Barcode Provider

What's the benefit of that?



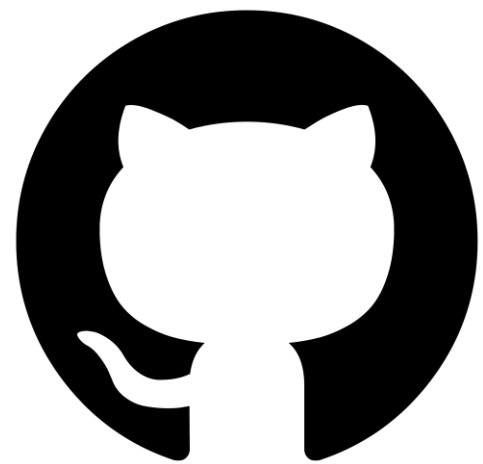
Tall verticals
on a strong
foundation



Focus on Last
Mile

How do I contribute? A technical walkthrough...

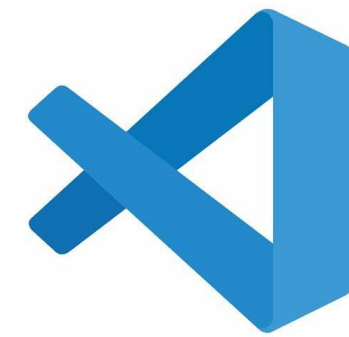
Requirements



GitHub Account



Basic git understanding



VS Code



AL Language

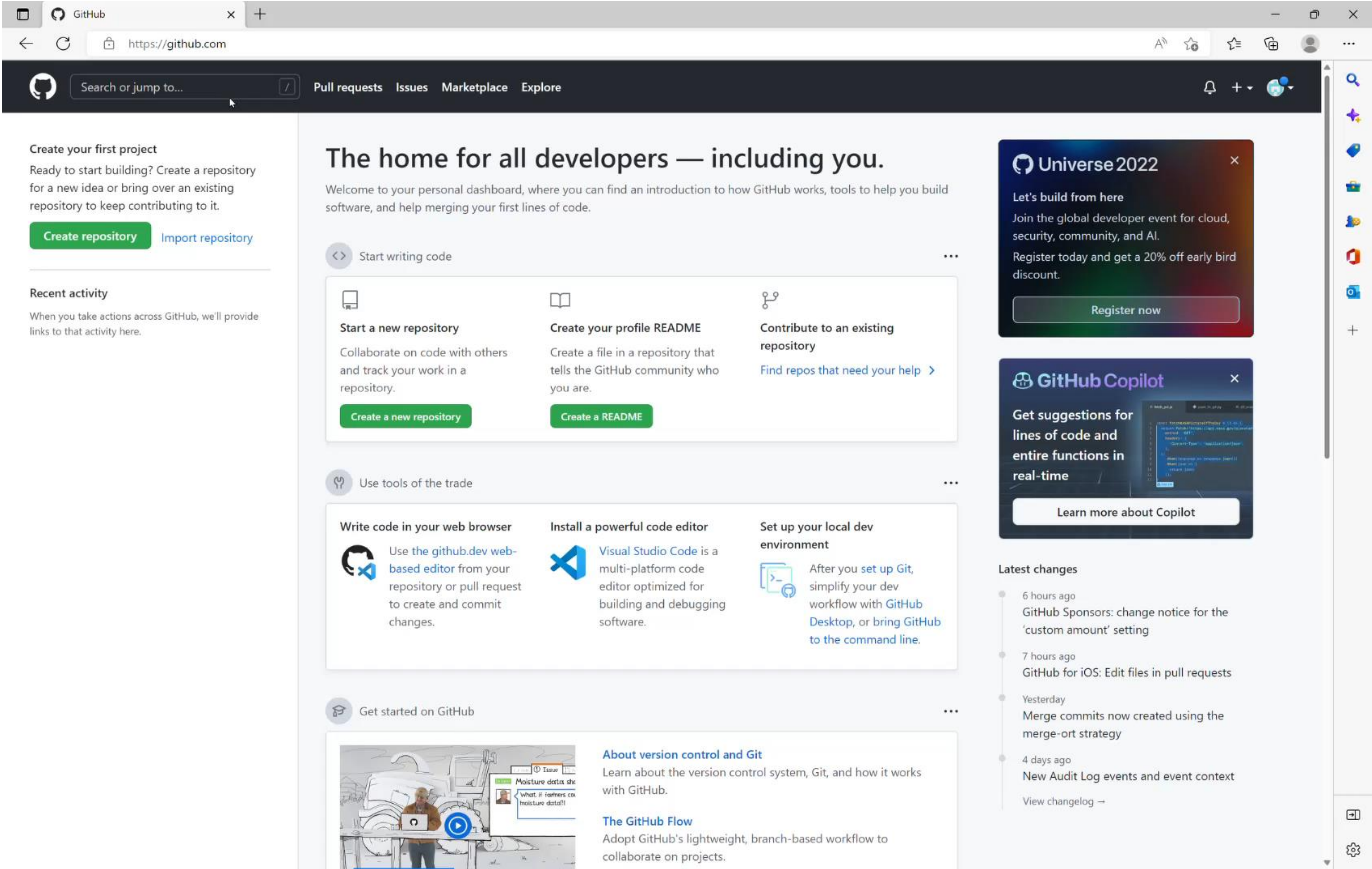


docker

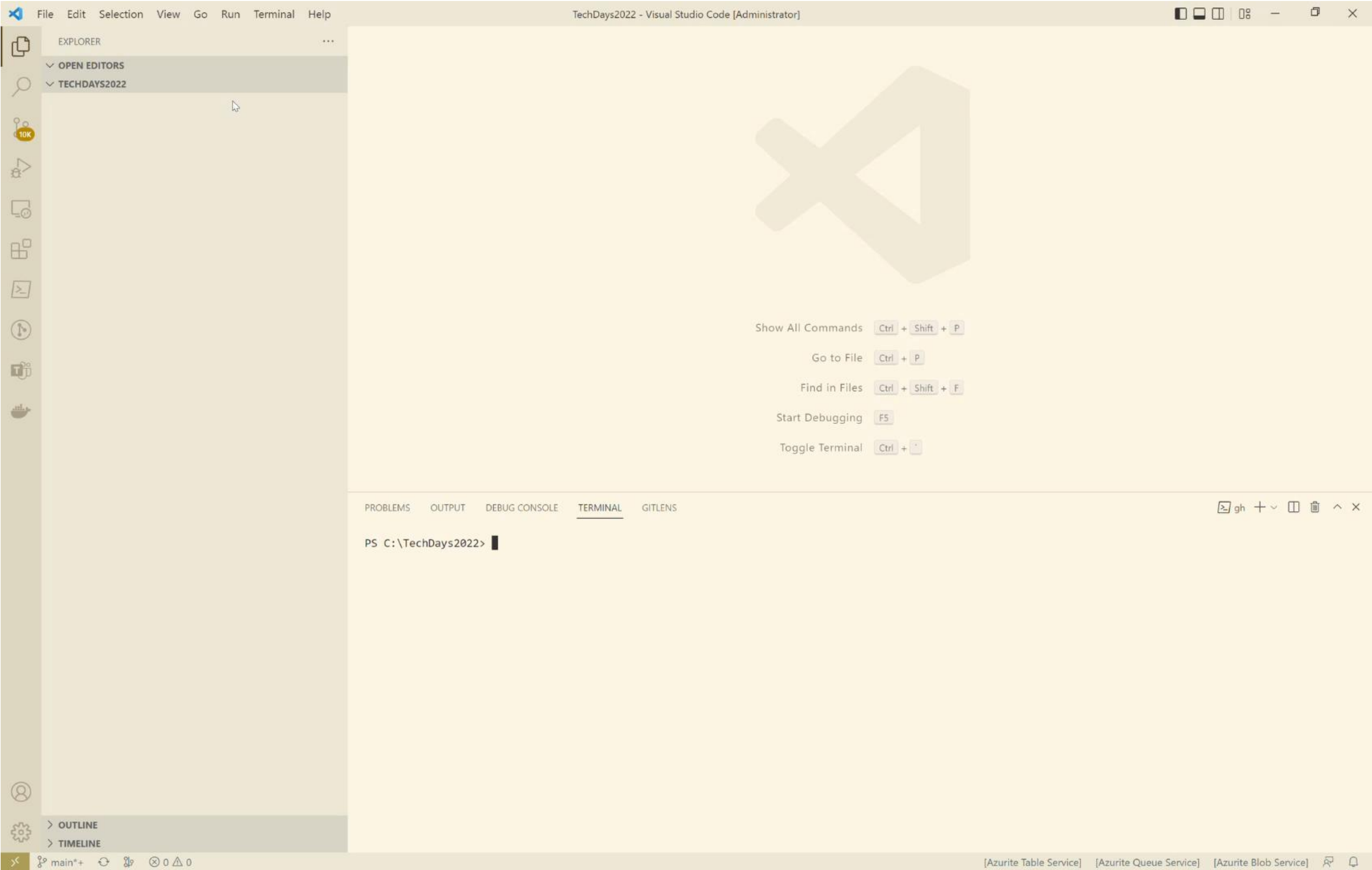
How to contribute (*to any GitHub repository*)

1. Find the repo on GitHub <https://github.com/Microsoft/ALAppExtensions>
2. Fork the repository (*ALAppExtensions*)
3. Clone the forked repository locally

Fork ALAppExtensions (video)



Clone your fork (video)



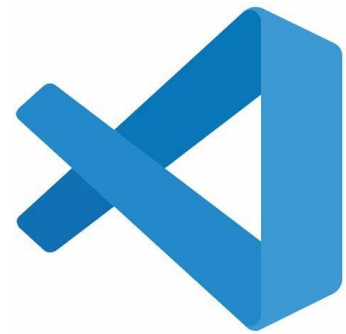
How to contribute (*to ALAppExtensions*)

Given that the repository is forked and cloned locally...

4. **Setup** local development environment
5. **Add, deploy** and **test** your changes
6. **Push** your changes and **create a PR (pull request)**

Setup local development environment

- Run `./Modules/.AL-Go/localDevEnv.ps1` (requires running docker with Windows containers)



Pulling generic image

Pulling mcr.microsoft.com/businesscentral:10.0.20348.887-dev

Creating container

```
BcContainerHelper is version 4.0.2-dev
BcContainerHelper is running as administrator
Hyper-V is Enabled
UsePsSession is False
Host is Microsoft Windows 11 Enterprise - Unknown/Insider build
Docker Client Version is 20.10.14
Docker Server Version is 20.10.14
Removing Session bcserver
Removing container bcserver
Removing entries from hosts
Removing bcserver from container hosts file
Removing bcserver-* from container hosts file
Removing Desktop shortcuts
Removing C:\ProgramData\BcContainerHelper\Extensions\bcserver
Downloading application artifact /sandbox/20.1.39764.46417/base
```

Containers [Give Feedback](#)

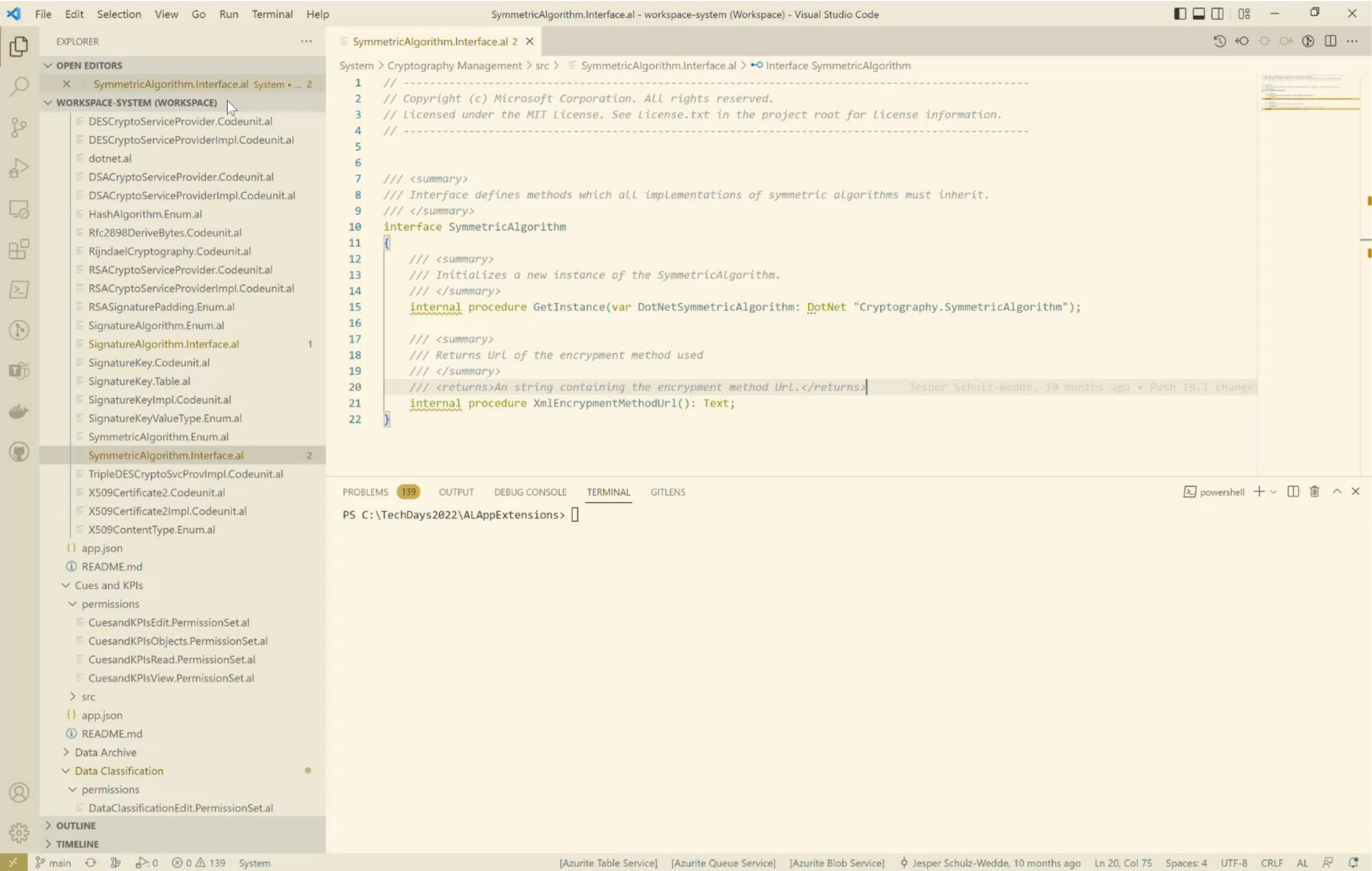
A container packages up code and its dependencies so the application runs quickly and reliably

Search





bcserver [mcr.microsoft.c...](#)
RUNNING





Push your changes and create a PR (video)





Pull request on GitHub



Fix warning in SymmetricAlgorithm interface #20334



 Open bc-external-contr... wants to merge 1 commit into `microsoft:main` from `bc-external-contributor:fix-warning` 



 Conversation **0**  Commits **1**  Checks **0**  Files changed **1**

 bc-external-contr... commented 28 minutes ago First-time contributor 

Fix warning in SymmetricAlgorithm interface - TechDays 2022


  Fix warning in SymmetricAlgorithm interface ✓ 5d0aac1

  bc-external-contributor requested review from JesperSchulz, AndreiPanko, grobys, darjoo, mazhelez, IhorHandziuk, stkillen and AndersLarsenMicrosoft as code owners 28 minutes ago


 mazhelez commented now Member 


Super cool! Thanks a lot @bc-external-contributor 😊

Add more commits by pushing to the `fix-warning` branch on `bc-external-contributor/ALAppExtensions`.

 **Review required** Show all reviewers

At least 1 approving review is required by reviewers with write access. [Learn more.](#)


 8 pending reviewers

 **1 workflow awaiting approval** Show all checks

First-time contributors need a maintainer to approve running workflows. [Learn more.](#)

1 successful check

Approve and run

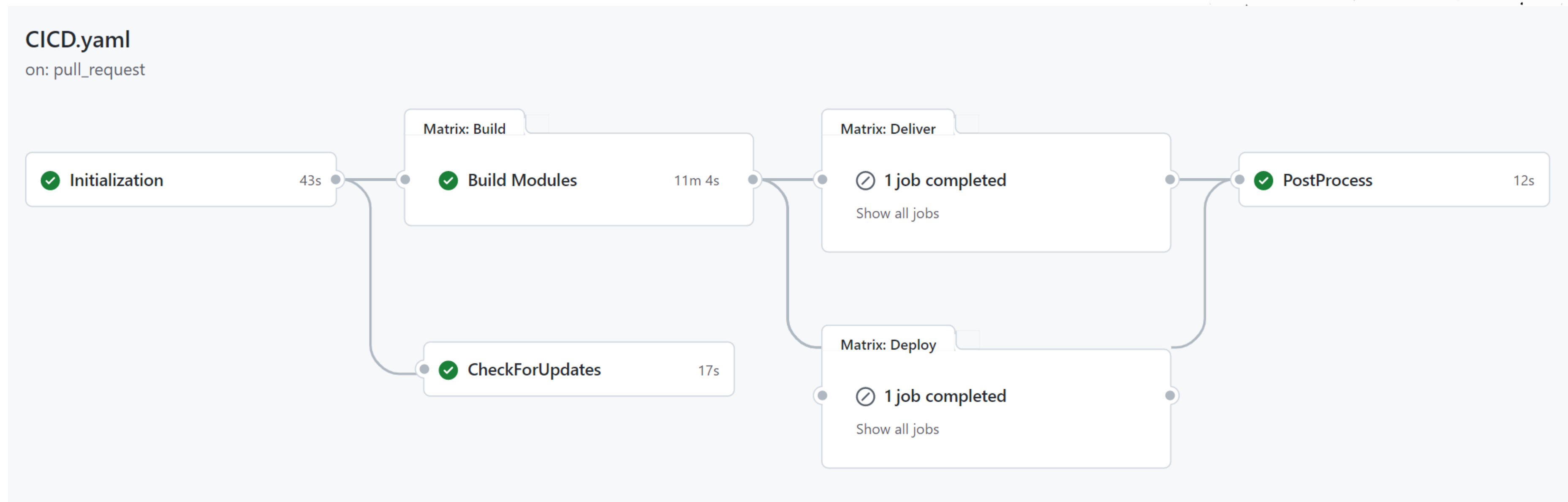
 **Merging is blocked**

Merging can be performed automatically with 1 approving review.

☐ Merge without waiting for requirements to be met (bypass branch protections)

CI Current Status

- (Almost) full uptake of **AL-Go**: [microsoft/AL-Go \(github.com\)](https://github.com/microsoft/AL-Go)
 - Currently only for *Modules* folder
- CI runs for every PR to main branch (*approvals required*)



Areas for future improvement

 CodeCop engine and rules

 Test coverage

 Performance tests

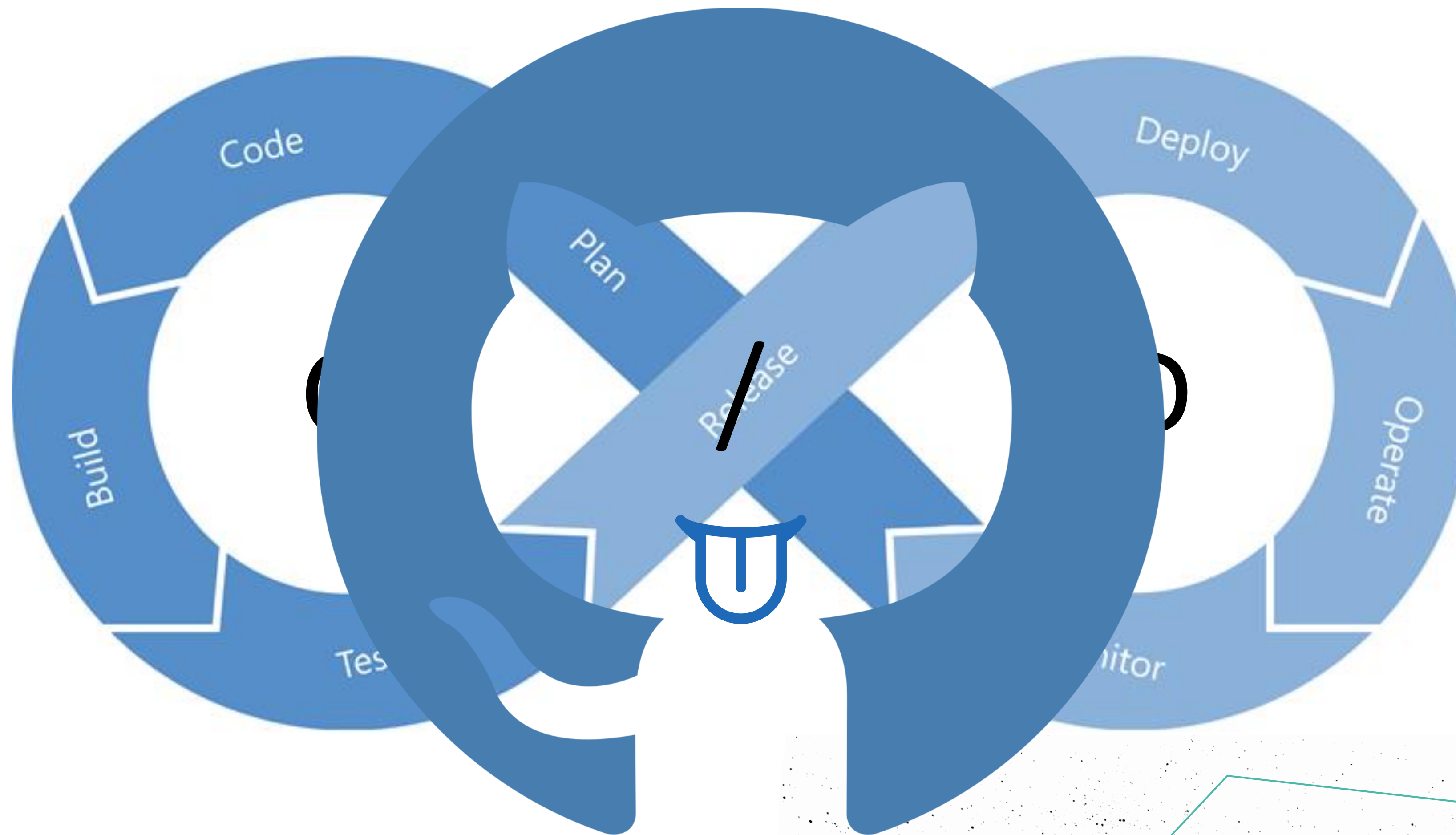
 Test Framework

 PR review process

 Breaking changes checks

And of course...

CI/CD soon part of GitHub repository



Coming in the near future!

Why GitHub...

- Close the development gap between the Microsoft team and the partner channel
 - What we build, you can build it too
 - No special infrastructure
- Collaborate better within the AL development community

The road ahead



Strengthen OSS
Community

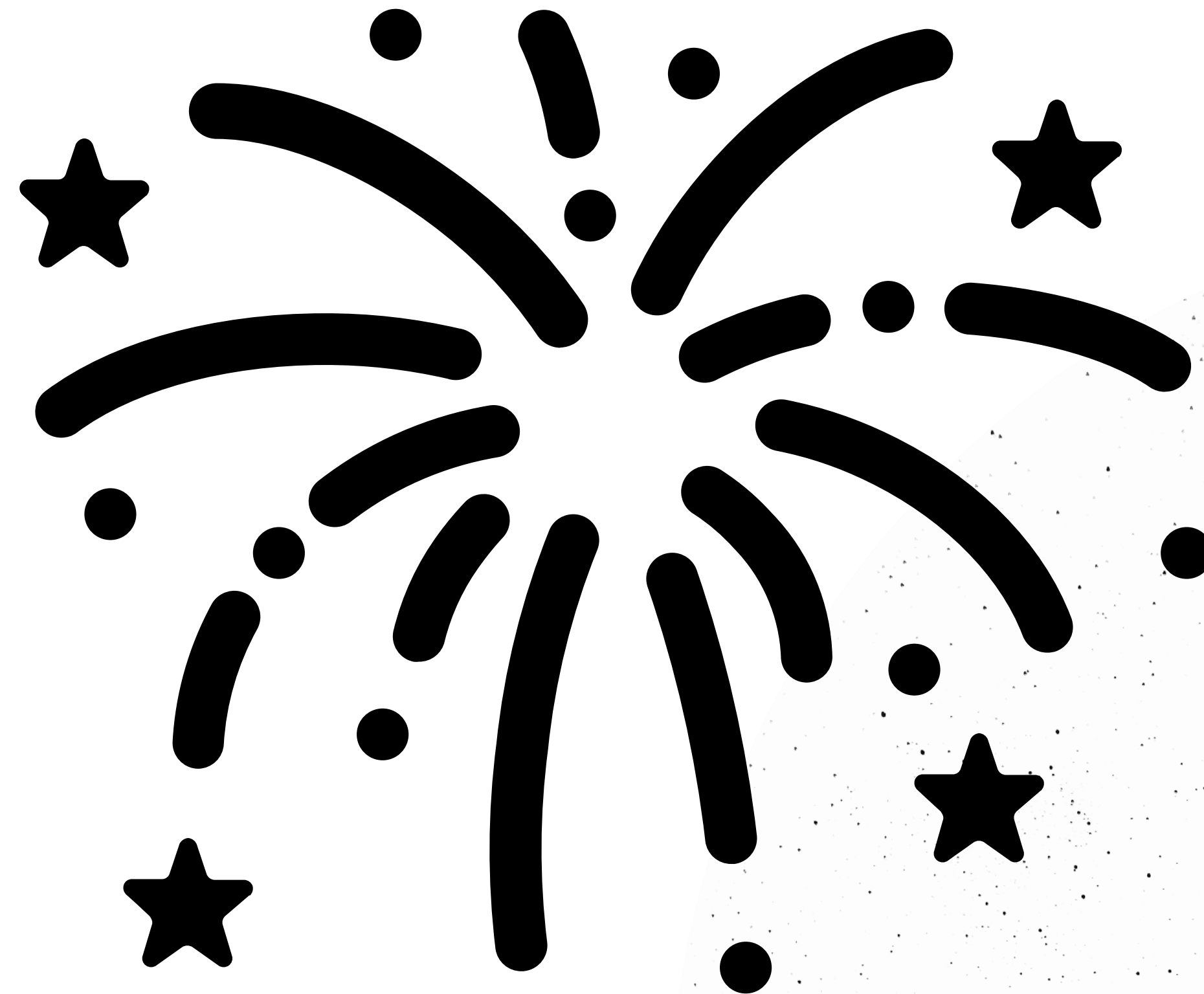


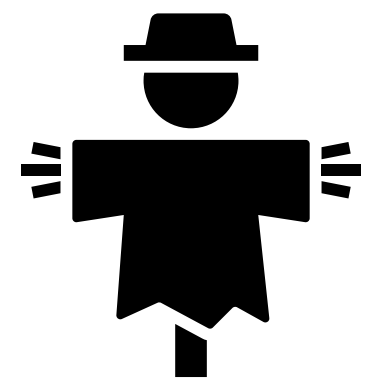
Strengthen OSS
Infrastructure



Continue transition
to true Open
Source

Let's open source the Base App too!

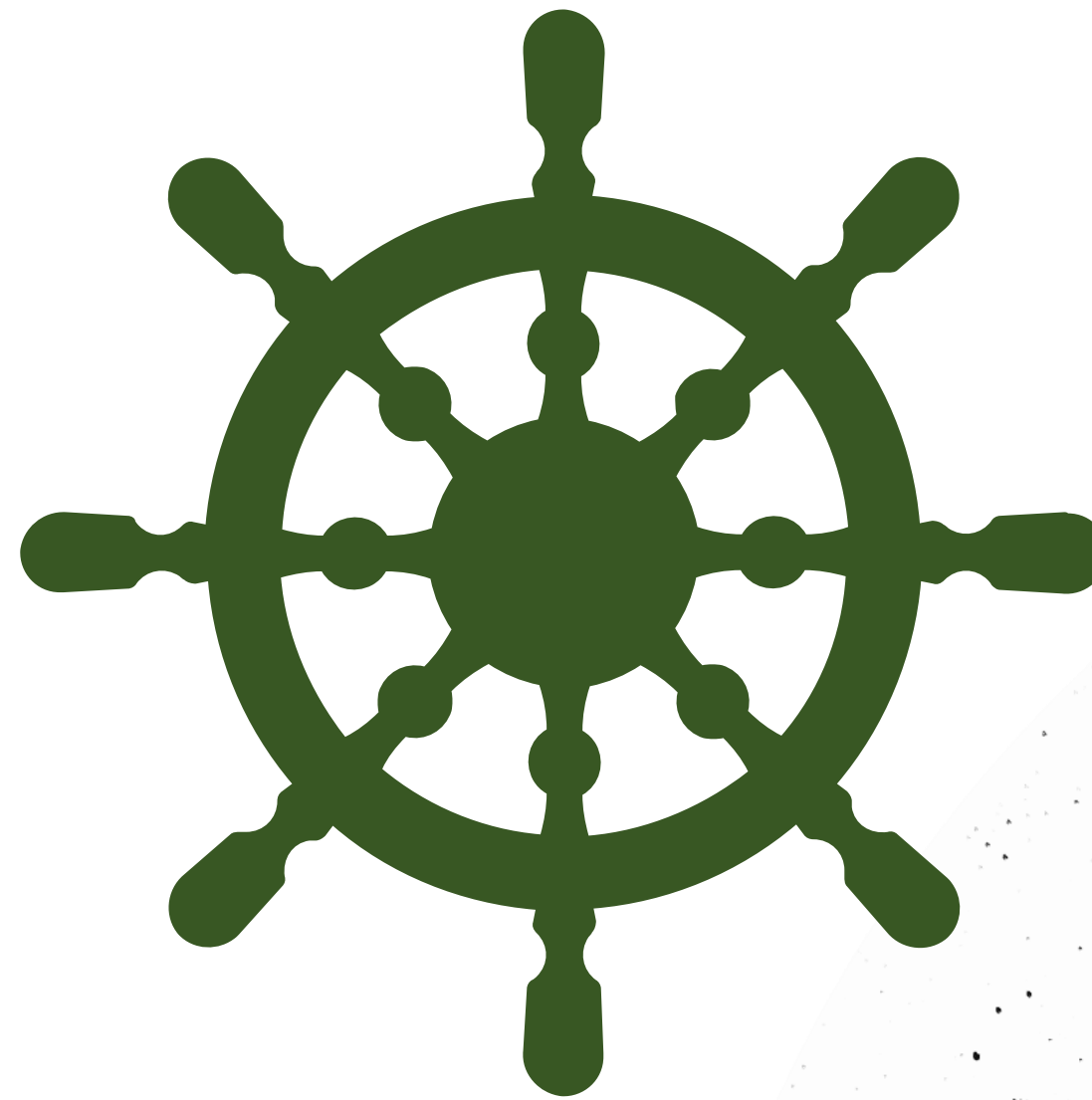




Risks of open sourcing the Base Application

1. Different partners, different verticals, different solutions
2. Lack of context to properly understand proposed changes
3. Lack of coordination and collaboration
4. High inflow of PRs, low participation in PR reviewing
5. High complexity (localizations, tests, code rules), low patience
6. Missing infrastructural support to scale
7. Many more aspects to open source than coding, which also must be completed, such as writing documentation, getting started help, etc.

How to mitigate those risks?



Controlled Contribution Model

A pilot



Try before we buy

So, how does that work?

<https://github.com/microsoft/BusinessCentralApps>

microsoft/BusinessCentralApps

Search or jump to...

Pull requests

Issues

Marketplace

Explore

microsoft / BusinessCentralApps

Private

Watch

5

Fork

1

Star

2

<> Code

Issues

4

Pull requests

Actions

Projects

1

Security

Insights

Settings

main

9 branches

0 tags

Go to file

Add file

<> Code

ikoletic

Update CONTRIBUTING.md

9d07939 22 days ago

58 commits

.github	Disable UICop.	2 months ago
Apps/W1	Push version 20.3 of all apps.	2 months ago
Layers/W1	Push version 20.3 of all apps.	2 months ago
Modules	Push version 20.3 of all apps.	2 months ago
.gitignore	Delete View folder.	3 months ago
CODEOWNERS	Update settings for this repository.	3 months ago
CODE_OF_CONDUCT.md	CODE_OF_CONDUCT.md committed	3 months ago
CONTRIBUTING.md	Update CONTRIBUTING.md	22 days ago
LICENSE	LICENSE committed	3 months ago
README.md	Update README.md	2 months ago
SECURITY.md	SECURITY.md committed	3 months ago
SUPPORT.md	Update SUPPORT.md	2 months ago

README.md

Microsoft Dynamics 365 Business Central - Application Platform Contribution Pilot

The Repository

About

Applications for the Dynamics 365 Business Central platform

Readme

MIT license

Code of conduct

2 stars

5 watching

1 fork

Contributors

3

JesperSchulz

Jesper Schulz-Wedde

microsoftopensource

Microsoft Open ...

ikoletic

Ivan Koletic

Languages

AL

99.8%

Other

0.2%

BusinessCentralApps/Layers/W1/

+

https://github.com/microsoft/BusinessCentralApps/tree/main/Layers/W1/BaseApp

Search or jump to...

/

Pull requests

Issues

Marketplace

Explore

+

microsoft / BusinessCentralApps

Private

Watch

5

Fork

1

Star

2

<> Code

Issues 4

Pull requests

Actions

Projects 1

Security

Insights

Settings

main

BusinessCentralApps / Layers / W1 / BaseApp /

Go to file

Add file

...

JesperSchulz

Push version 20.3 of all apps.

✖

a41f1ec on 14 Jul

History

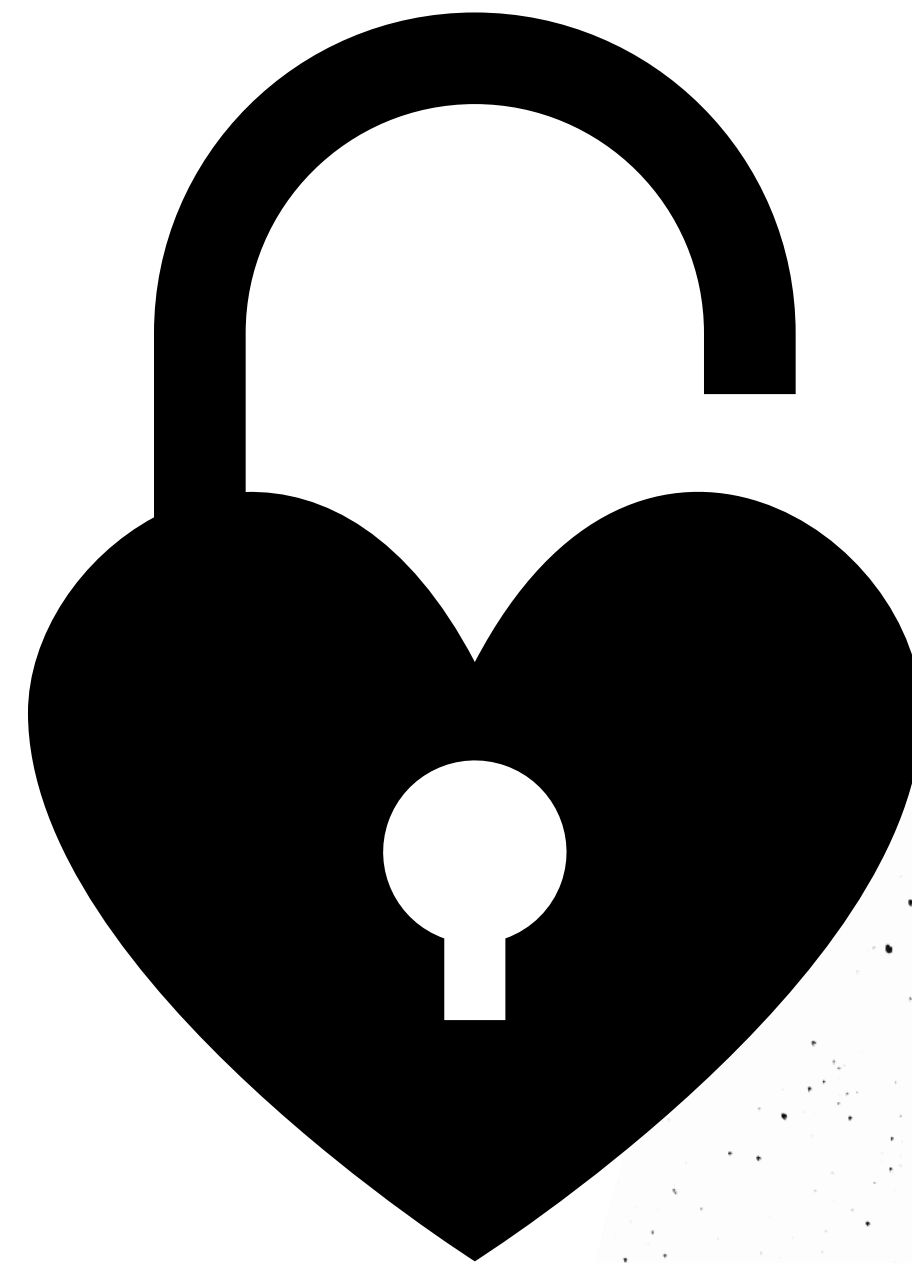
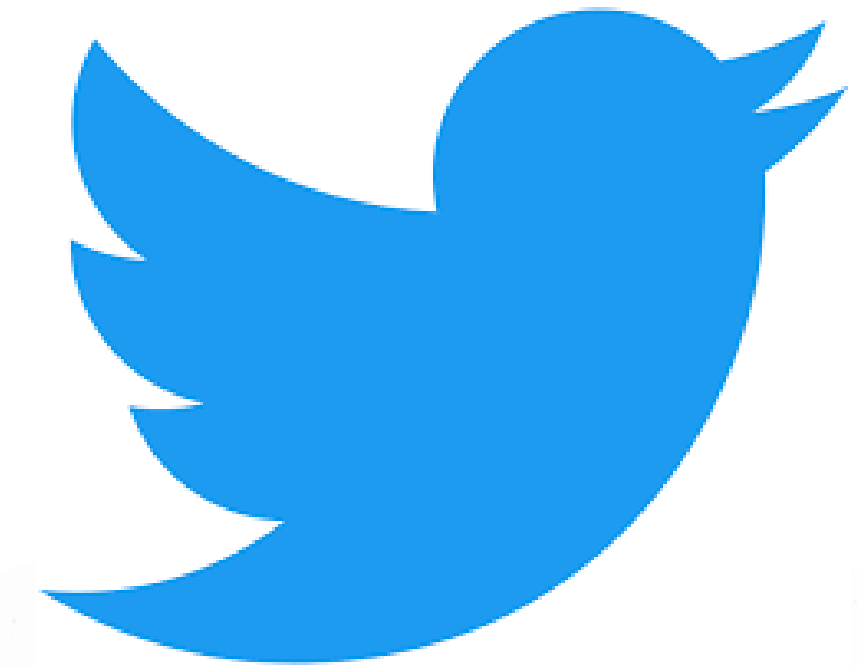
⚠

Sorry, we had to truncate this directory to 1,000 files. 5,865 entries were omitted from the list.

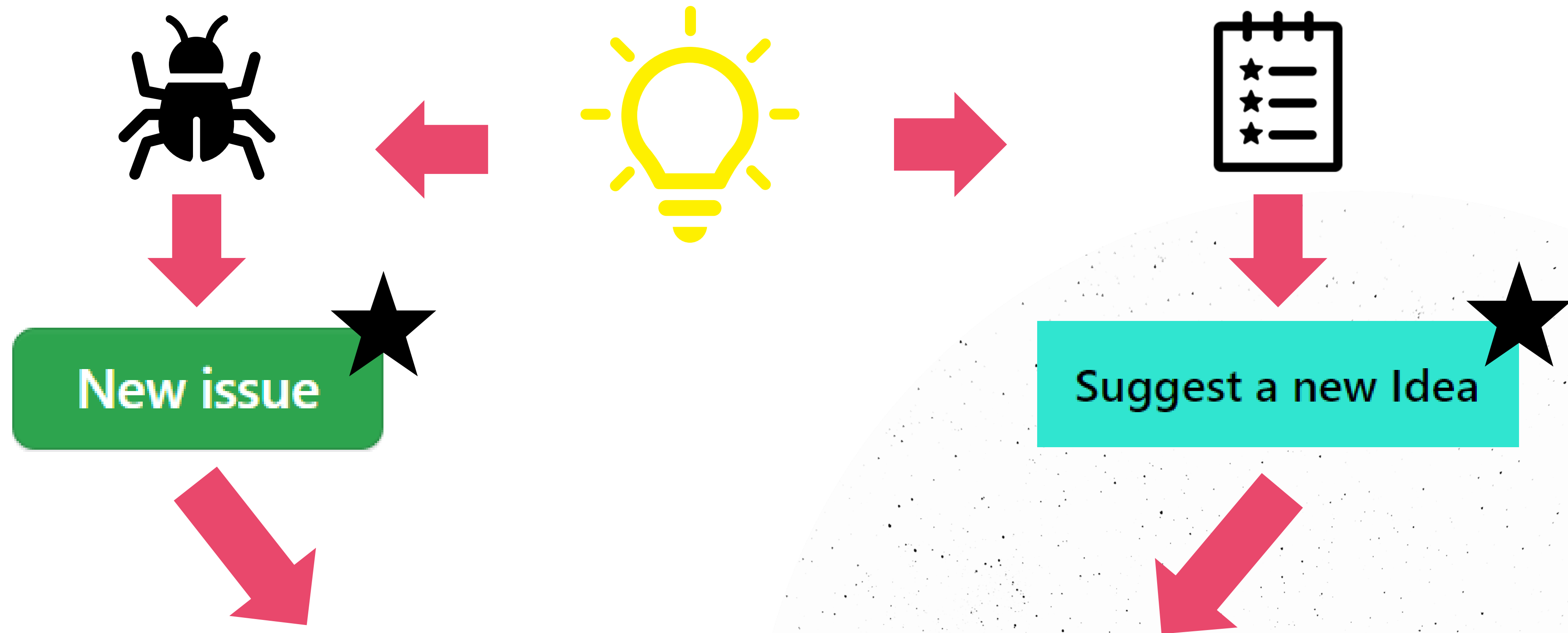
..

<div></div> Advanced Setup	Push Apps and Modules	3 months ago
<div></div> Azure AI	Push version 20.3 of all apps.	2 months ago
<div></div> BOM Tree	Push version 20.3 of all apps.	2 months ago
<div></div> AADApplication.Table.AL	Push version 20.3 of all apps.	2 months ago
<div></div> AADApplicationCard.Page.al	Push version 20.3 of all apps.	2 months ago
<div></div> AADApplicationInterFace.Codeunit.al	Push Apps and Modules	3 months ago
<div></div> AADApplicationList.Page.AL	Push version 20.3 of all apps.	2 months ago
<div></div> AADApplicationSetup.Codeunit.al	Push Apps and Modules	3 months ago
<div></div> ADCSCommunication.Codeunit.al	Push version 20.3 of all apps.	2 months ago
<div></div> ADCSGetFieldValue.Codeunit.al	Push Apps and Modules	3 months ago
<div></div> ADCSTManagement.Codeunit.al	Push Apps and Modules	3 months ago
<div></div> ADCSTUser.Table.al	Push version 20.3 of all apps.	2 months ago
<div></div> ADCSTUsers.Page.al	Push Apps and Modules	3 months ago
<div></div> ADCSTWS.Codeunit.al	Push version 20.3 of all apps.	2 months ago
<div></div> APIDataUpgrade.Codeunit.al	Push Apps and Modules	3 months ago

First: Sign up for the Pilot to get access

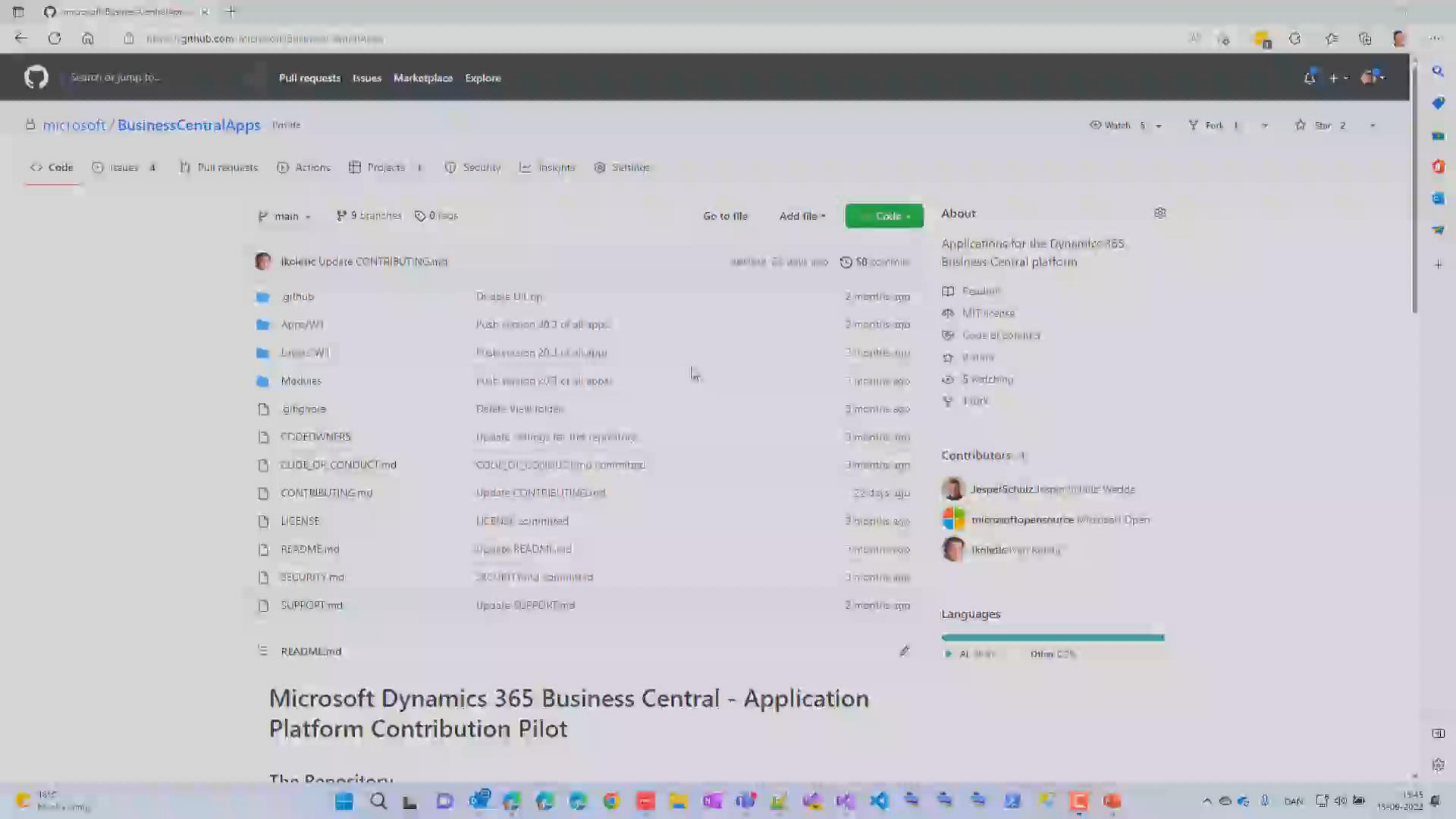


Step 1: It all starts with an issue...

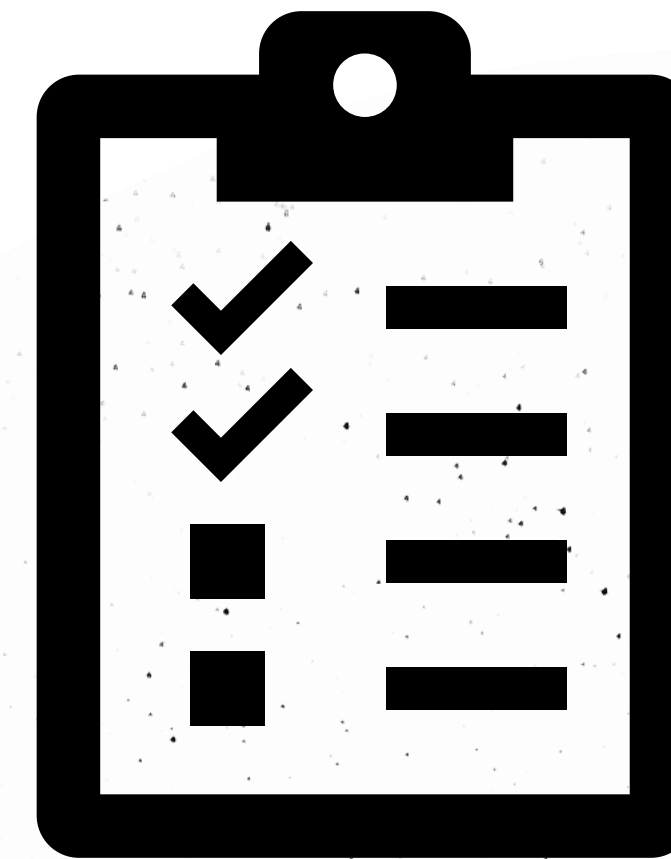
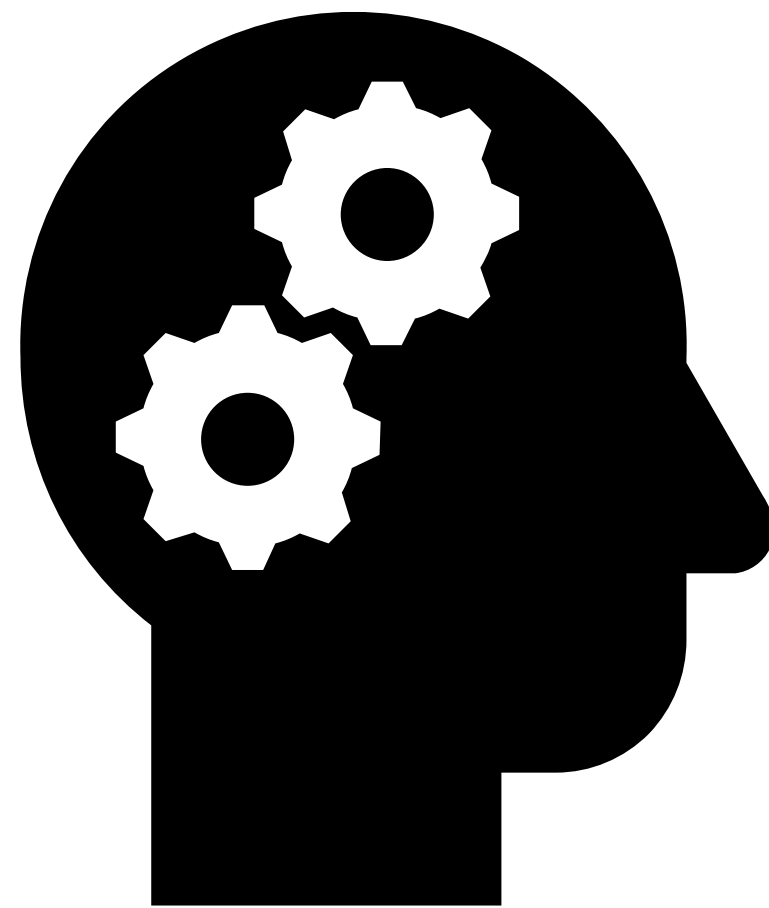


🕒 <https://github.com/microsoft/BusinessCentralApps/issues>

★ Always look for existing entries before creating new ones!



Step 2: Designing your issue and getting approval



<https://github.com/microsoft/BusinessCentralApps/issues/9>

Business Central Application Plat

+

←

↺

🏠

https://github.com/orgs/microsoft/projects/394/views/1

🔊

🔍

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⚙️

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🔖

☰

🐙

microsoft

/ Projects /

📁

Business Central Application Platform Pilot

Search or jump to...

/

🔔

+

👤

🔒

Business Central Application Platform Pilot

📐

View 1

+

New view

☰

Filter by keyword or by field

(MS) Needs triage2

🟢 BusinessCentralApps #9

[Improvement] Add more Tables to allow for Retention Policy Setup.

🟢 BusinessCentralApps #12

[Improvement] New Helper procedure GetTimeParameter for "Batch Processing Mgt."

+ Add item

Issue Approved2

🟢 BusinessCentralApps #6

[Bug Fix] report 5885 "Calc. Phys. Invt. Order (Bins)" - Wrong Else Indentation

🟢 BusinessCentralApps #3

[Extensibility Request] codeunit 134 "Import Attachment - Inc. Doc." UploadFile /ImportAttachment

+ Add item

Ready for Implementation0

+ Add item

PR in progress0

+ Add item

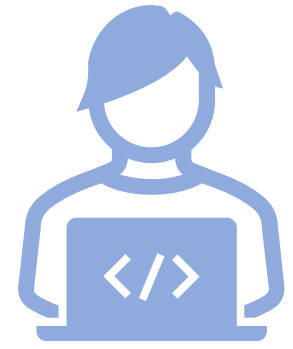
(MS) Validation of completeness0

+ Add item

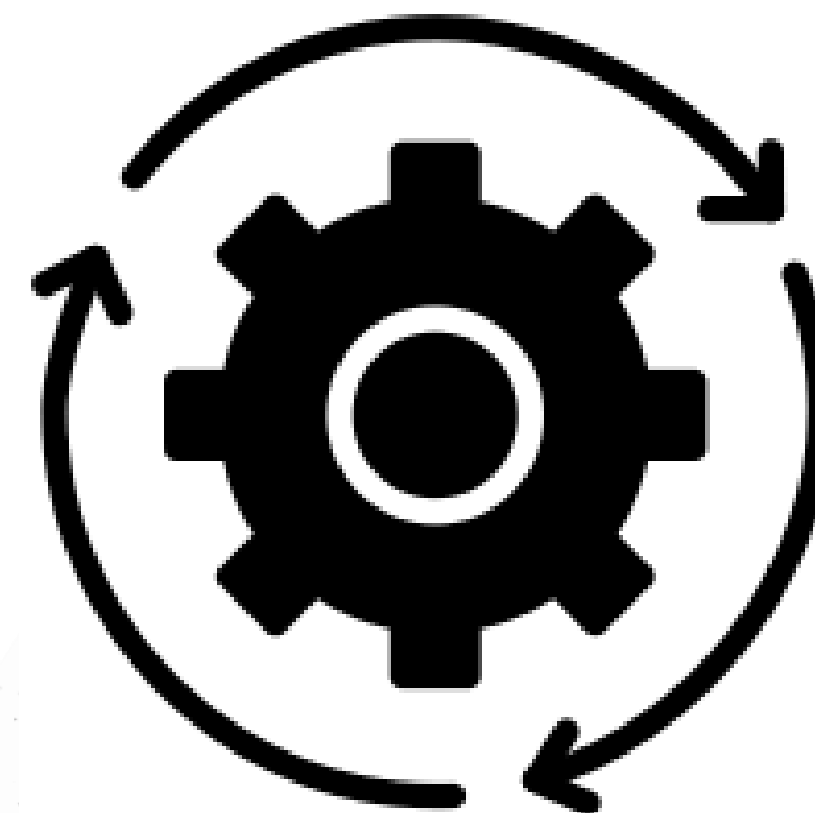
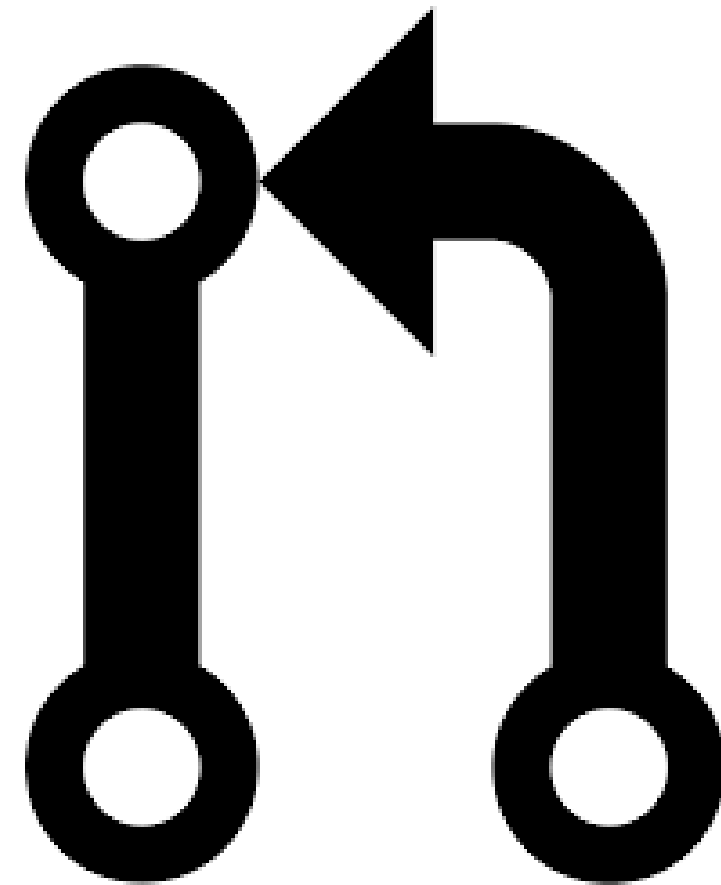
Closed0

+ Add item

Step 3: Implement your solution



- Create PR -> Make CI pass



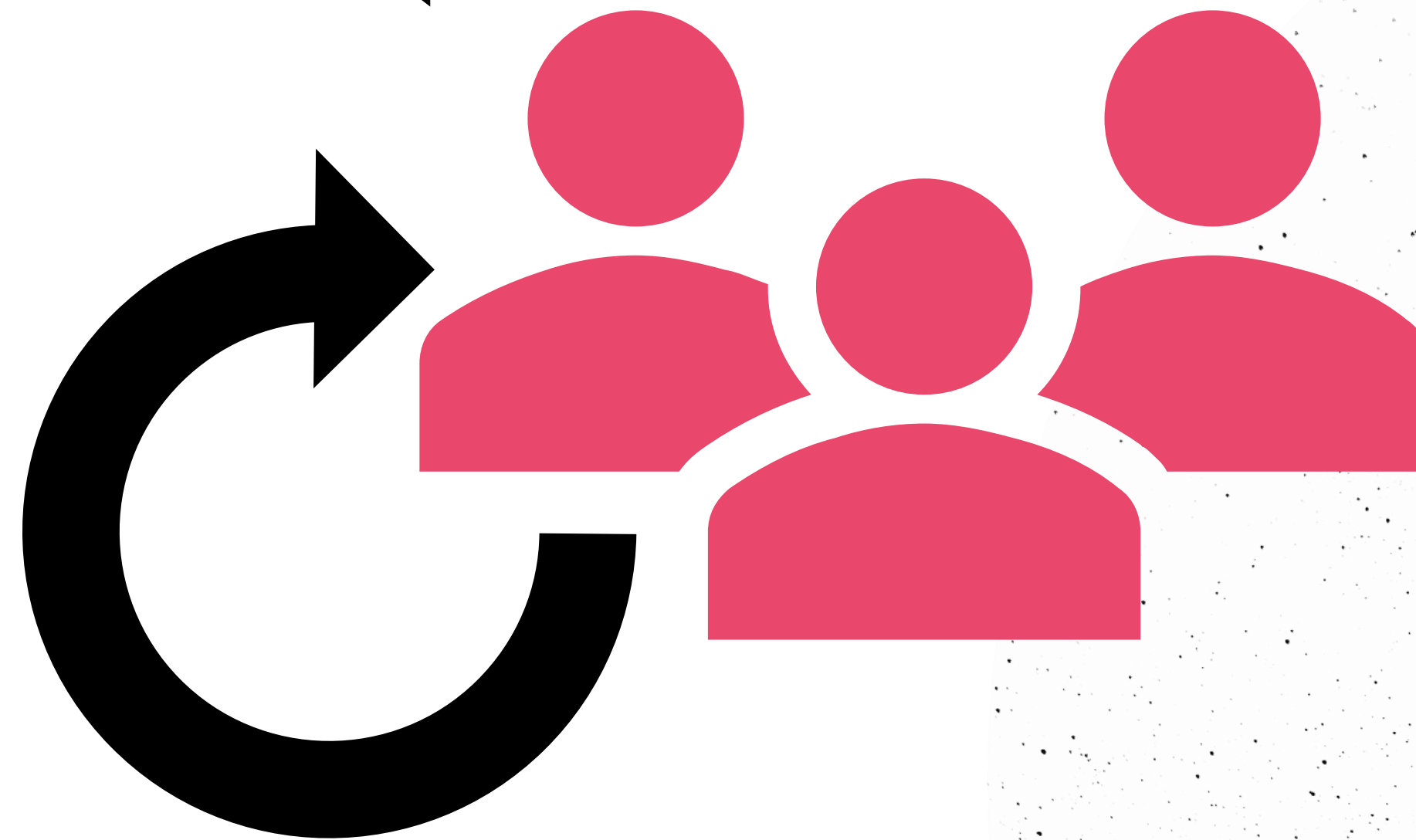
<https://github.com/microsoft/BusinessCentralApps/pulls>

Step 4: Review

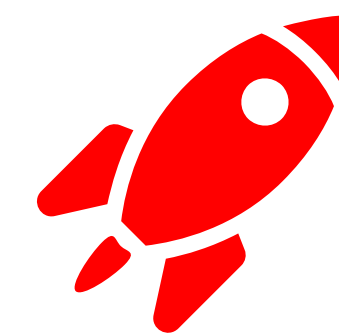


OMG, you didn't!

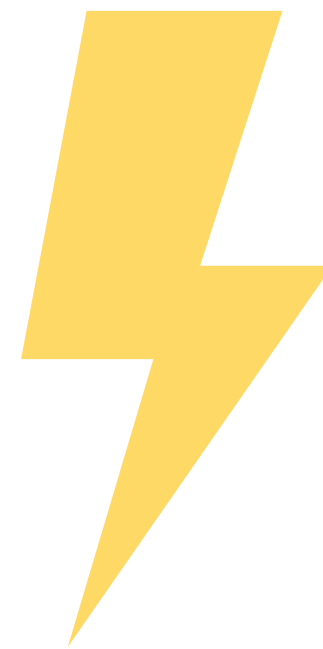
I'd suggest to
rather do this...



Step 5: Deployment

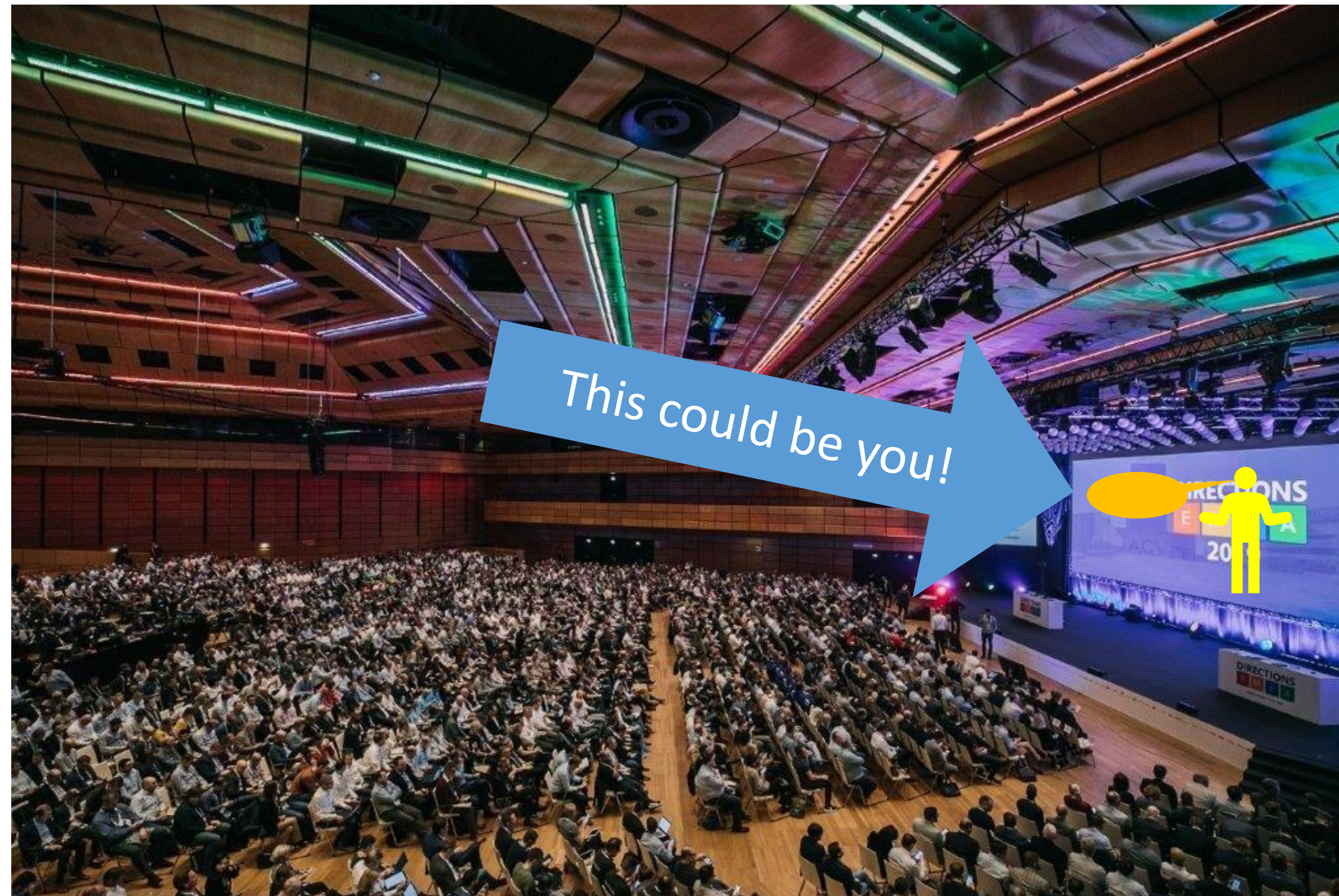


What's in it for you?



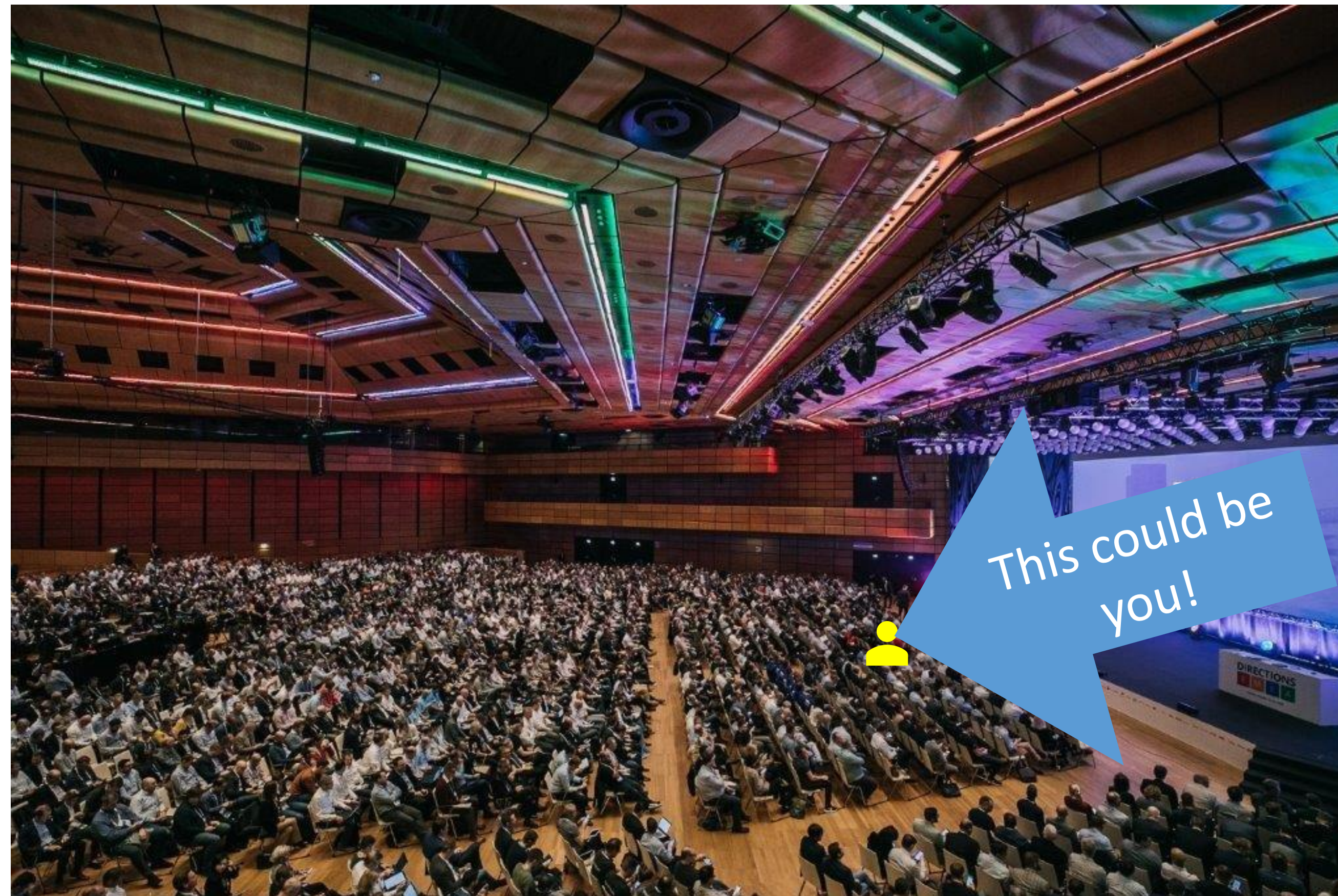
What's in it for you?

1. The partner (corporate) with the most valuable contribution for v21 gets a video-spot in the next Directions Microsoft Keynote and receives a crystal on stage



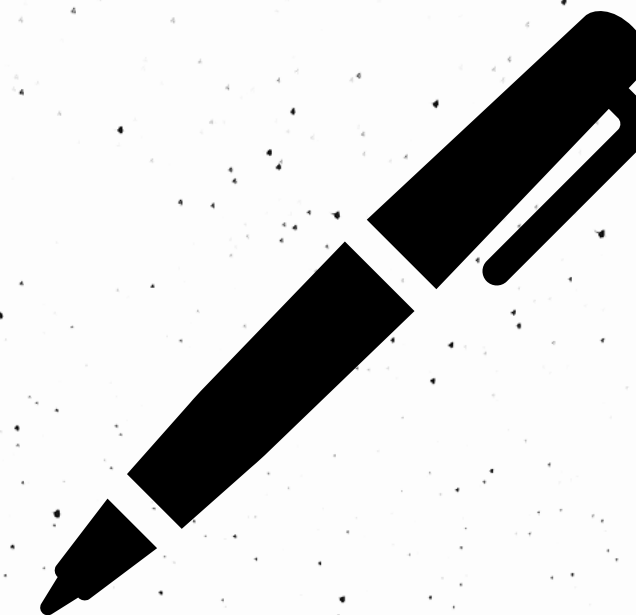
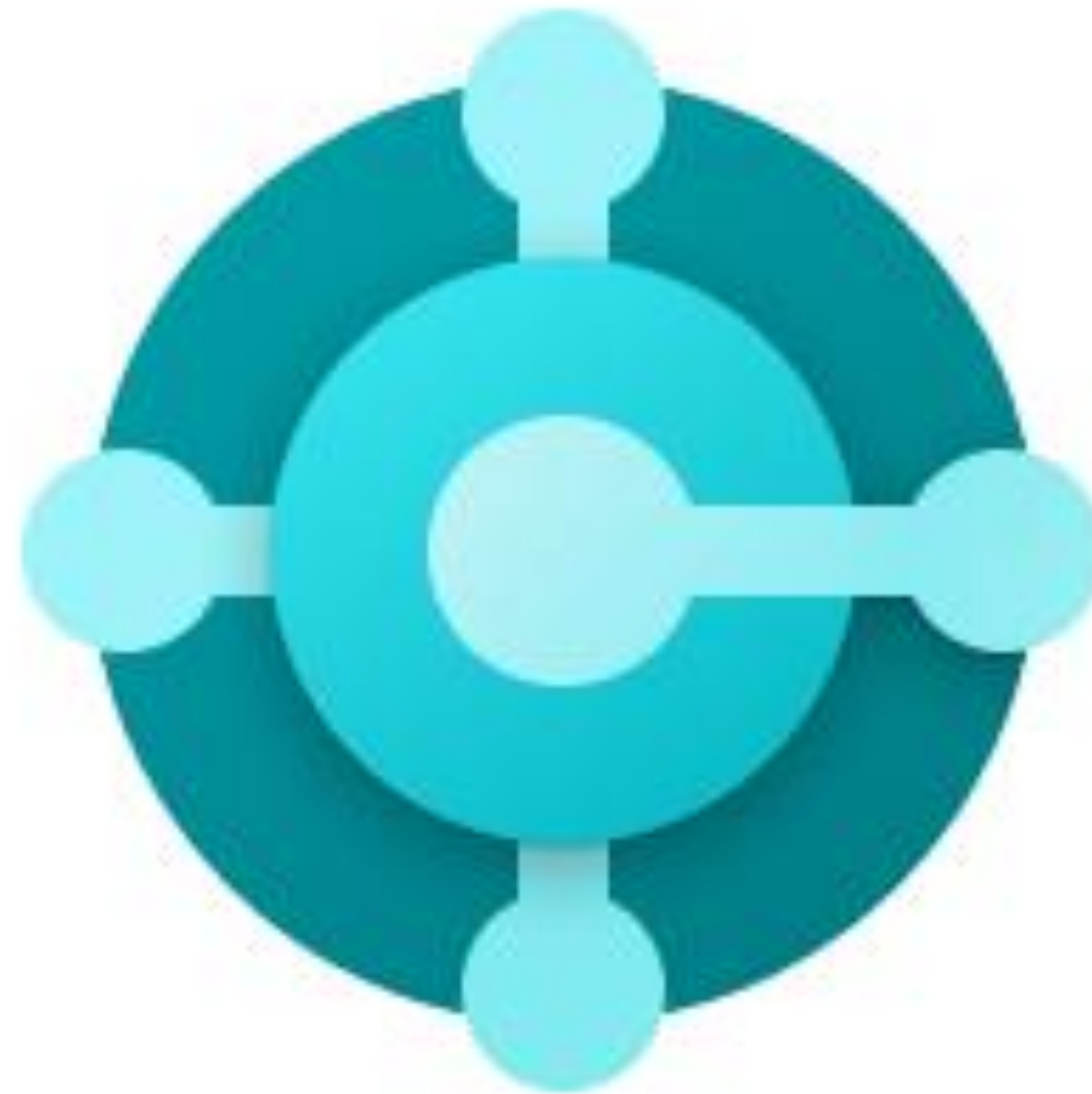
What's in it for you?

2. The developer involved in the most valuable contributions get tickets to the next Directions conference



What's in it for you?

3. The 2 developers with the most code reviews of public pull requests get Business Central swag



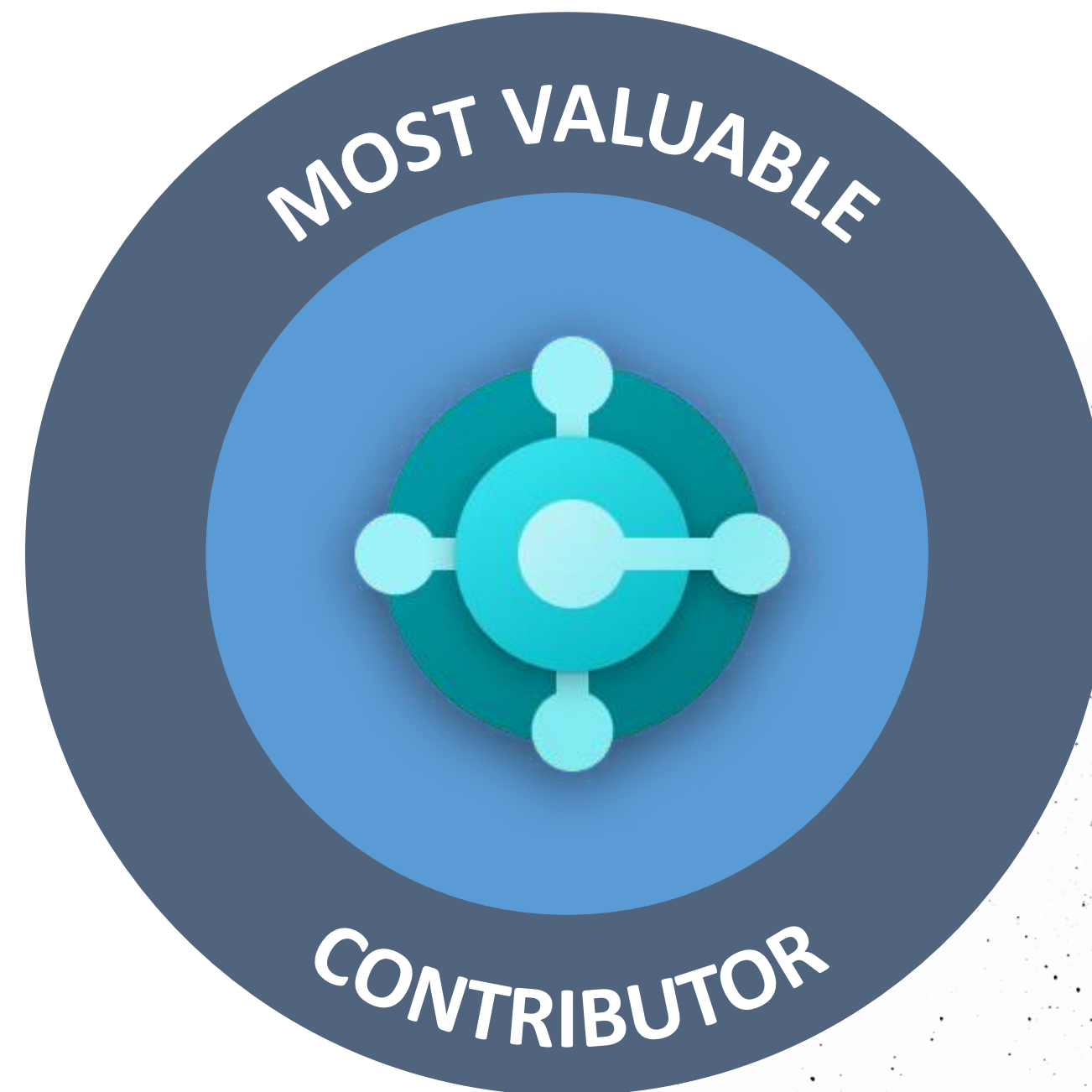
What's in it for you?

4. Being an active member of the open-source community is a path towards becoming a Microsoft MVP



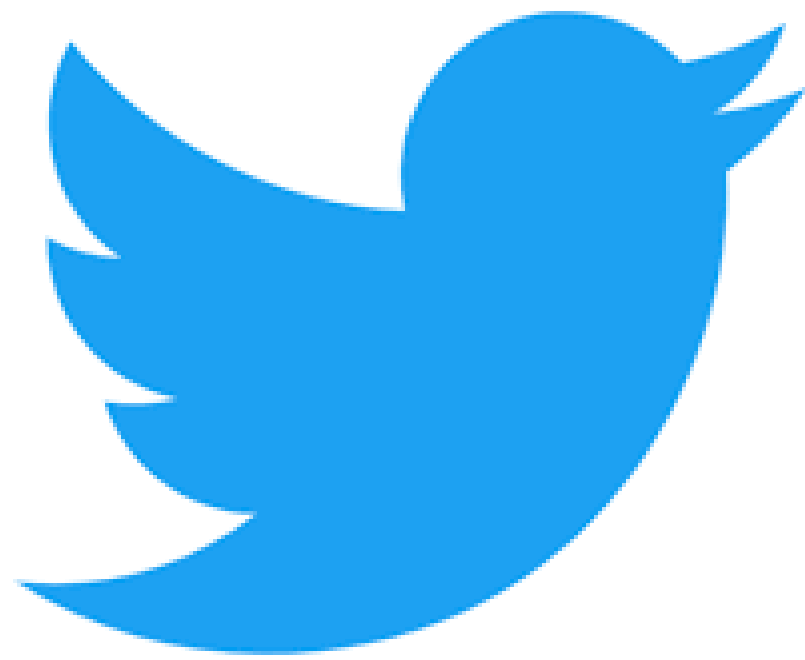
What's in it for you?

5. And yes, finally there will be badges



What's in it for you?

6. Oh yes, and we will start recognizing larger contributions publicly with kudos. We'll Tweet and write Yammer announcements to let everyone know about the great contributions, and where they come from!



#MyCodeIsRunningInBC



That's it!

I have so many questions! Where do I get answers?

Feel free to reach out to me, and I'll do the best to help you or get you started!



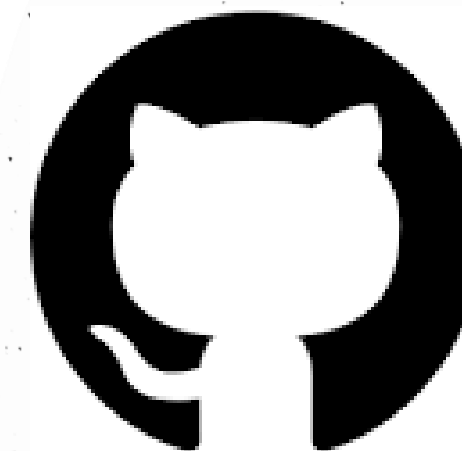
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Any Questions?

Thank
You!