

Unleash your Development Superpowers with VS Code Extensions



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RSM





BC DEVELOPMENT NOTEBOOK

Notes by Tonya Bricco-Meske



Rogan & Ajax



LinkedIn



BCDEVNOTEBOOK.COM





“With great power comes
great responsibility”
- Spider Man



“Truth, justice, and a
better tomorrow”
- Batman



“I can do this all day”
– Captain America





Can you give me some superhero taglines for Business Central developers?

Committing Excellence,
Pushing Boundaries

Where there's a bug
there's a fix.

Transforming
businesses with a few
lines of code.

Extending capabilities
and reporting success.

In a world of changes, I'm the
constant committer



OBJECTIVES

- Streamline development
- Enhance code quality
- Supercharge your development lifecycle

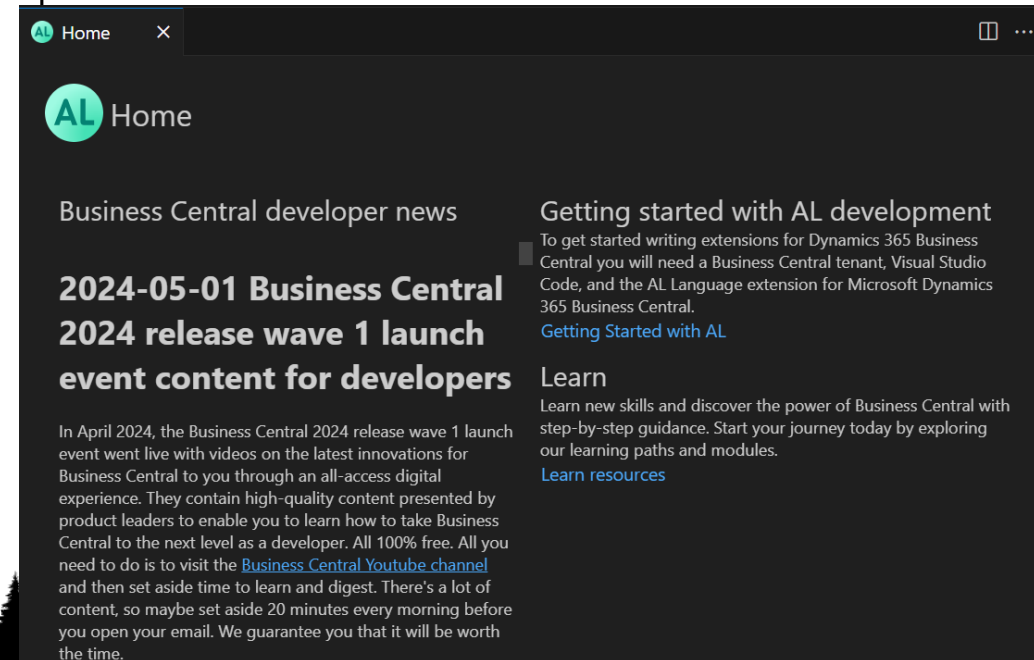
We are going to review

- Code snippets
- Actions
- Analyzers
- Keyboard shortcuts & more



AL: Home

- Can open from command pallet by searching for AL: Home
- On User Settings, set `"a1.showHomeAtStartup": "Always"`
- Options are Always, Never, or WhenUpdated



Code Snippets



Type...	To get a...
tcodeunit	Codeunit object structure
tpage	Page object structure
tpageext	Page extension structure
tquery	Query object structure
treport	Report object structure
ttable	Table object structure
ttableext	Table extension structure
txmlport	XMLport object structure

Type...	To get a...
tassert	Assert error structure
tcasEOF	Case of structure
tcaselse	Case else structure
tfield	Table field structure
tfieldpage	Page field structure
tfor	For structure
tif	If structure
tifelse	If else structure
tprocedure	Method structure
trepeat	Repeat until structure
ttrigger	Trigger structure
twithdo	With do structure
twhile	While structure



CRS AL Language Extension Code Snippets




- t...waldo code snippets
 - 3-step wizard page
 - twebservicewaldo
- Useful snippets
 - ttablesetup & tpagesetup
 - create setup table / page



Custom Code Snippets

```
>preferences: configure user snippets|
```

Snippets: Configure User Snippets

similar commands 



Code Actions

Add to settings.json

```
"al.enableCodeActions": true
```



Code Actions – AL Language



- IF to CASE Statement
- Interface implementer
- Fix **with** statements
- Convert actions to **actionref** syntax
- Set default **ApplicationArea** and remove duplicates
- Move tooltip from page to table
- Fix old report layout and replace with **rendering** layout section



Code Actions – AZ Dev Tools

- Collapse empty brackets
 - In active editor
 - In active project



Analyzers

- Code inspection tool for syntax errors, potential bugs, or areas where best practices are not being followed.

```
"al.enableCodeAnalysis": true,  
"al.codeAnalyzers": [  
  "${AppSourceCop}",  
  "${CodeCop}",  
  "${PerTenantExtensionCop}",  
  "${UICop}"  
]
```


Analyzers

- **AppSourceCop:** rules for extensions to be published to Microsoft AppSource.
- **CodeCop:** enforces the official AL coding guidelines.
- **PerTenantExtensionCop:** rules where an app will be published to a specific tenant.
- **UICop:** rules used to customize the web client, and help make a better, more uniform experience for users.



AppSourceCop

- Cannot change field type or name
- Cannot change the primary key, or delete keys
- Cannot use reserved namespaces
- Must use a prefix
- Translation files must be enabled
- Parameters cannot be modified, renamed, or removed from events.



CodeCop

Rules related to

- Readability
- Order of variables
- Overall clean code
 - Remove unused variables / procedures
- Text Overflow warnings
- Only find a record if you are going to use it

```
Variable declarations should be ordered by type. Variables should be sorted like this: Record, Report, Codeunit, XmlPort, Page, Query, Notification, BigText, DateFormula, RecordId, RecordRef, FieldRef, and FilterPageBuilder. The rest of the variables are not sorted. AL(AA0021)
```

[View Problem \(Alt+F8\)](#) [Quick Fix... \(Ctrl+.\)](#)



PerTenantExtensionCop

- Object ID ranges
- Table definitions must have a matching permission set
- Name length limits
- Dependency on Base App now uses **application** property

```
"platform": "24.0.0.0",  
"application": "24.0.0.0",
```



UICop

Guides the use of controls like

- Repeaters
 - Can only be used on a List, ListPart or Worksheet
- Actions
 - Where are they located
 - Image Property
- Rich Text Editor
- Property usage for UsageCategory and ApplicationArea



BusinessCentral.LinterCop

- Customizable coding companion built by the BC Community
- Currently 57 different rules for
 - Code that technically compiles but raises runtime errors
 - Guide writing cleaner code
 - Guidelines we would like developers to follow



BusinessCentral.LinterCop

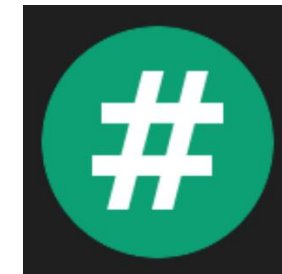


- FlowFields should not be editable
- Writing to a FlowField is not common
- Using hardcoded IDs in function calls is not allowed
- Any table with a single field in the PK of type Code or Text should have **NotBlank** set on the PK
- Clear(All) does not affect or change values for global variables in single instance codeunits.
- Tables coupled with **TransferFields** must have matching fields



APPS

- REST Client
- AL Object ID Ninja
- Create GUID



APPS – COSMO Alpaca

- COSMO Alpaca
 - Companion for DevOps Development
 - Source Code Management
 - Pipelines for CI/CD
- Container handling for development



COSMO Alpaca
Introduction



CRS AL Language Extension



- Standardize Naming Convention of files!

```
"CRS.ALSubFolderName": "src",  
"CRS.ObjectNamePrefix": "TBMR_",  
"CRS.OnSaveALFileAction": "Rename",  
"CRS.FileNamePattern": "<ObjectNameShort>.<ObjectTypeShortPascalCase>.al",  
"CRS.FileNamePatternExtensions": "<ObjectNameShort>.<ObjectTypeShortPascalCase>.al",  
"CRS.ExtensionObjectNamePattern": "<Prefix><BaseNameShort>",
```



CRS AL Language Extension



- Once published, you can run an object
Ctrl + Shift + R
- Search on Google / Microsoft Docs
 - CRS: Search Microsoft Docs
 - CRS: Search Google



AZ Dev Tools

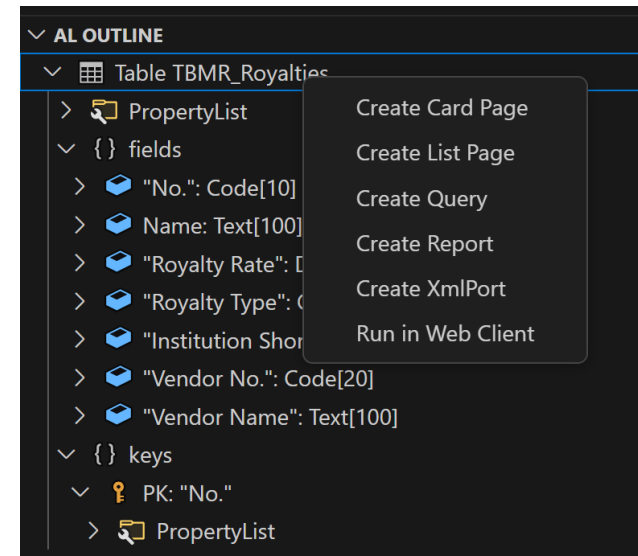
- Default properties for API creation

```
"a1Outline.defaultApiPublisher": "bcdevnotebook",  
"a1Outline.defaultApiGroup": "dynamicsCon",  
"a1Outline.defaultApiVersion": "2.0",
```



AZ AL Dev Tools

- AL Object Wizards
- Add all extension object permissions
- From table (using AL Outline) create...



AL Navigator



- Ctrl+Alt+G → end of global variables
- Ctrl+Alt+L → end of local variables
- Ctrl+Alt+K → end of keys
- Ctrl+Alt+A → next action
- Ctrl+Alt+D → next dataitem (starting from the top)

- Copy reports

GitHub Copilot / GitHub Copilot Chat

Use Cases

- Consistency & code quality
- Automate generation of tables, pages and even codeunits
- Build scaffolding for integrations
- Simplify conditional logic
- Extract reusable code
- Improve error handling



GitHub
Copilot



```
11 group(TBM_WorkDe ControlAddIn 'Microsoft.Dynamics.Nav.Client.WebPageViewer' is marked for removal. Reason: Replaced
12 { with WebPageViewer addin.. Tag: 24.0. AL(AL0432)
13 Caption = 'W UserControl WorkDescUserControl: "Microsoft.Dynamics.Nav.Client.WebPageViewer"
14 View Problem (Alt+F8) Quick Fix... (Ctrl+.)
15 usercontrol(WorkDescUserControl; "Microsoft.Dynamics.Nav.Client.WebPageViewer")
16 { You, 9 months ago Initial Commit.
17 ApplicationArea = All;
18
19 0 references
20 trigger ControlAddInReady(callbackUrl: Text)
21 begin
22     IsReady := true;
23     FillAddIn();
24 end;
25
26 0 references
27 trigger Callback(data: Text)
28 begin
29     MyWorkDescription := data;
30     Rec.SetWorkDescription(MyWorkDescription);
31 end;
}
```



Can you tell me more about this?
ControlAddIn 'Microsoft.Dynamics.Nav.Client.WebPageViewer' is marked for removal. Reason: Replaced with WebPageViewer addin.. Tag: 24.0.ALAL0432 UserControl WorkDescUserControl: "Microsoft.Dynamics.Nav.Client.WebPageViewer"



GitHub Copilot

Used 1 reference

AL TBMSalesQuote.PageExt.al:1-42 App\AL Code\Page Ext

The warning message you're seeing is due to the deprecation of the `Microsoft.Dynamics.Nav.Client.WebPageViewer` control add-in. This control add-in has been replaced with a new one called `WebPageViewer` in newer versions of Business Central.

The `WebPageViewer` control add-in is used to display web content in a Business Central page. It's typically used to display HTML content, but it can also be used to display other types of web content.

In your code, the `WorkDescUserControl` is a user control of type `Microsoft.Dynamics.Nav.Client.WebPageViewer`. This is why you're seeing the deprecation warning.

To resolve this warning, you should replace `Microsoft.Dynamics.Nav.Client.WebPageViewer` with `WebPageViewer` in your code. Here's how you can do it:

```
usercontrol(WorkDescUserControl; "WebPageViewer")
{
    ApplicationArea = All;

    trigger ControlAddInReady(callbackUrl: Text)
    begin
        IsReady := true;
        FillAddIn();
    end;

    trigger Callback(data: Text)
    begin
        MyWorkDescription := data;
        Rec.SetWorkDescription(MyWorkDescription);
    end;
}
```

This change should remove the deprecation warning and ensure your code is compatible with newer versions of Business Central.



GitHub Copilot



Keyboard Shortcuts

Ctrl + K, Ctrl + S to view all shortcuts



- Ctrl+B: Toggle side bar
- Ctrl+J: Toggle Pannel (debugging, output, problems)
- Alt+Left/Right: Navigate back and forward
- Ctrl+Enter: New line below
- Ctrl+Shift+Enter: New line Above
- Alt+Up/Down: move lines Up/Down
- Alt+Shift+Up/Down: Duplicate Line(s) Up/Down
- Ctrl+Space: Activate Intellisense
- Ctrl+ /: Toggle line comment
- Ctrl+Shift+; : Breadcrumbs
- Multiple editors
 - drag and drop / double click to keep open
- Ctrl+Alt+Left/Right: Move editor left/right
- Ctrl+Shift+T: Reopen closed editor
- Add multiple cursors with Alt+Click
- F2: Symbol rename



Misc. Tips & Tricks

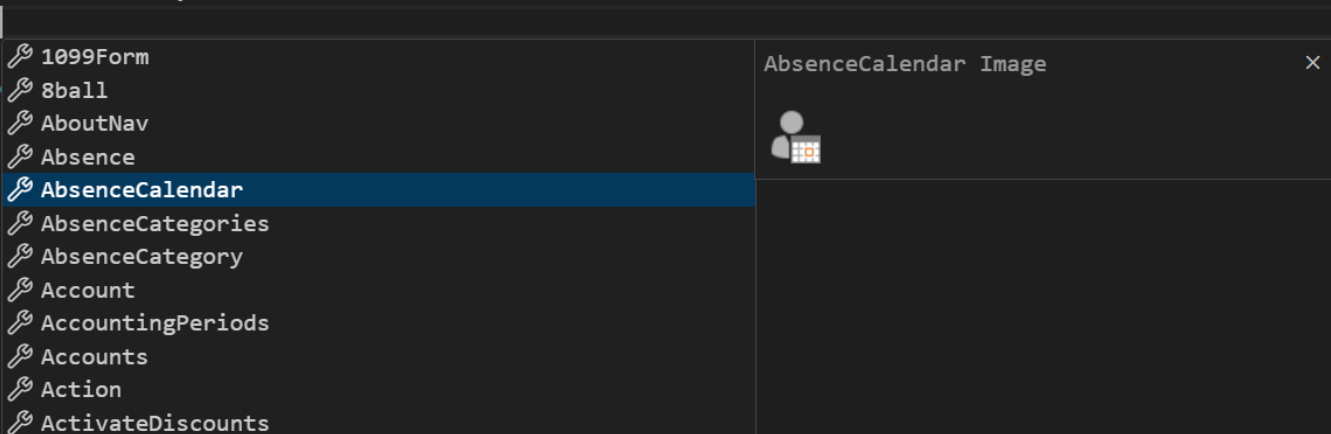
Things every BC Developer should know



Icons

aka.ms/bcicons

```
actions
{
  area(Processing)
  {
    action(MyNewAction)
    {
      ApplicationArea = All;
      Image =
      trigger
      begin
      end;
    }
  }
}
```



The screenshot shows a code editor with a dropdown menu for the 'Image' property. The dropdown lists various icons, with 'AbsenceCalendar' selected. A preview window titled 'AbsenceCalendar Image' shows a calendar icon.



Recap

- Code snippets
- Actions
- Analyzers
- Keyboard shortcuts & more

I hope you feel like you can go home and

- Streamline development
- Enhance code quality
- Supercharge your development lifecycle



Business Central Resource Guide

[Learn more!](#)

Looking for resources?

aka.ms/BCLE

aka.ms/BCAll

aka.ms/BCReleasePlan

aka.ms/BCReporting

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BC Launch Event Videos



[@MicrosoftDynamics365BC](https://www.youtube.com/@MicrosoftDynamics365BC)

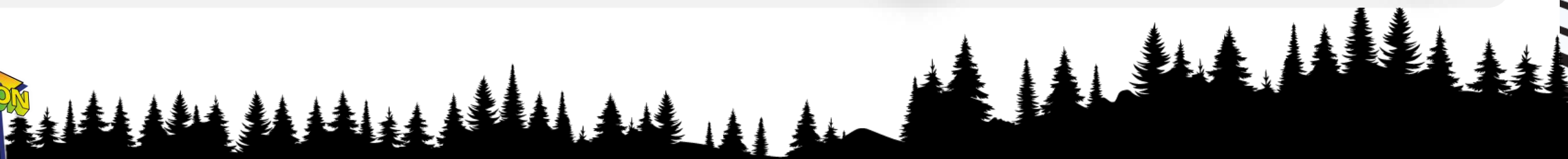
Submit your ideas

aka.ms/BCIdeas



Join the office hours

aka.ms/BCOfficeHours



Connect with me!



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