Writing Windows 11 Widgets

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About

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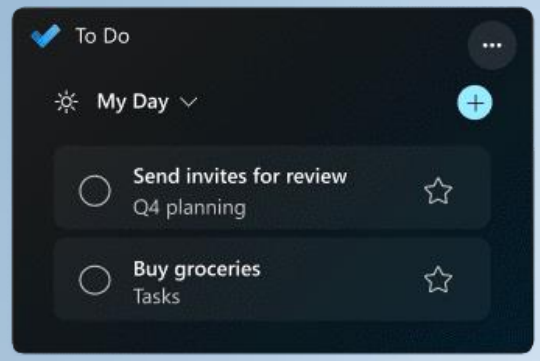
Outline



About Windows 11 & Widgets

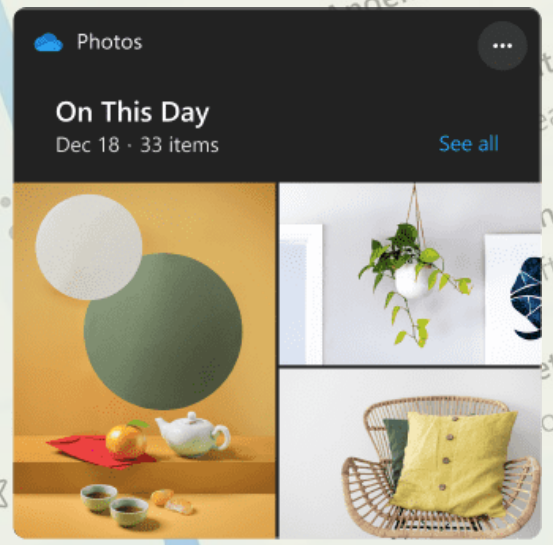
Design Widgets with Adaptive Cards

Develop Widgets with Windows App SDK

Design & Develop Widgets Demo

Overview & Any Questions?

Windows 11 & Widgets



Writing Windows 11 Widgets

Windows 11

Windows 11 is Microsoft's latest most powerful operating system

Optimised for productivity & Dev Home for developers

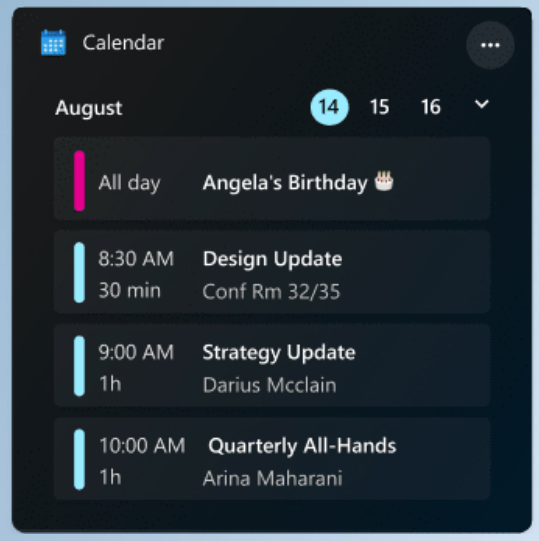
Elevate gaming & entertainment experience

Enhanced with AI-powered Copilot

windows.com

Windows 11 & Widgets

Widgets



Widgets enable quick access & information at-a-glance

Organise & save time with the Widgets Board

Customise & personalise what is important

Interactive & dynamic text or graphics

Updated features & functionality

Design Widgets with Adaptive Cards

Writing Windows 11 Widgets

Adaptive Cards

Adaptive Cards are platform-agnostic UI snippets in JSON

Exchange at-a-glance content with interactive actions

Create templates with drag-and-drop designer

Preview Widgets Board sizes & theme

adaptivecards.io

Adaptive Cards Schema

Card Elements
TextBlock
Image
Media
MediaSource
CaptionSource
RichTextBlock
TextRun

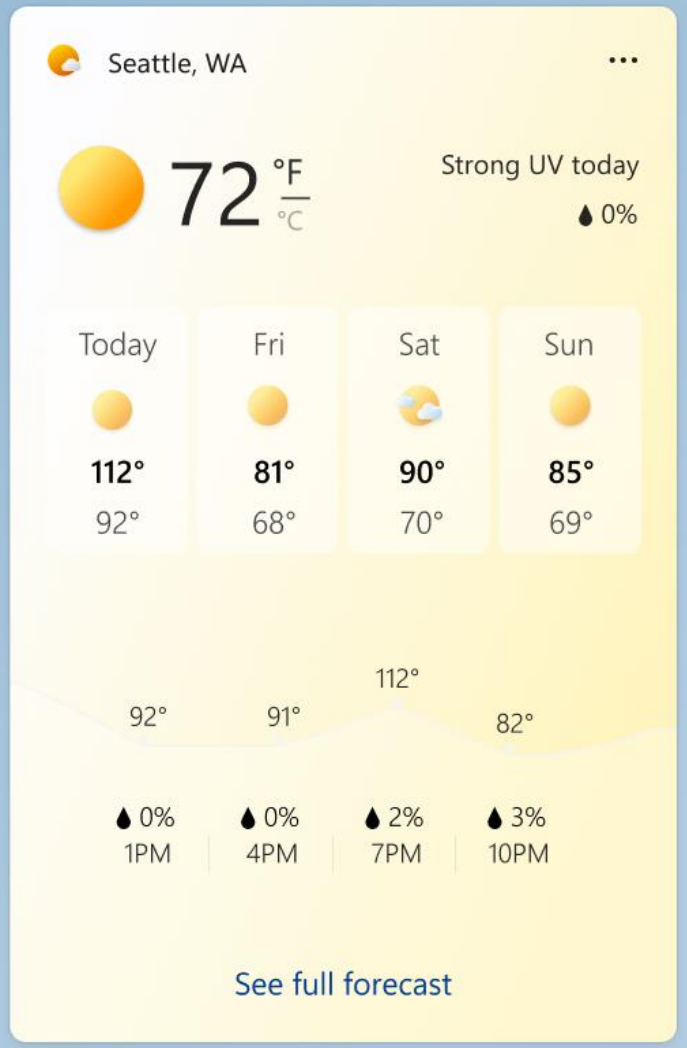
Containers
ActionSet
Container
ColumnSet
Column
FactSet
Fact
ImageSet
Table
TableCell

Actions
OpenUrl
Submit
ShowCard
ToggleVisiblity
TargetElement
Execute

Inputs
Text
Number
Date
Time
Toggle
ChoiceSet
Choice
Data.Query

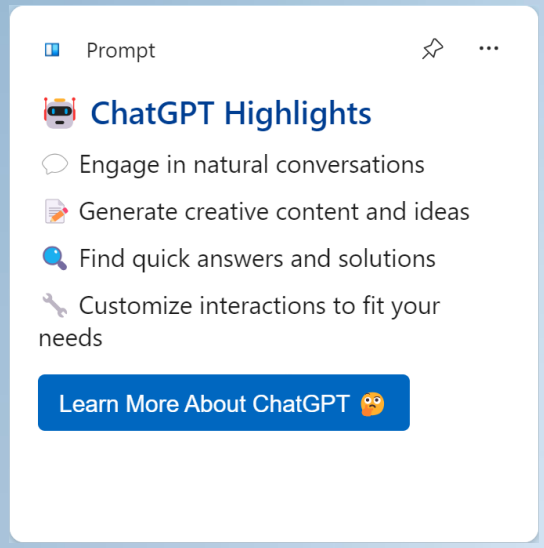
Types
BackgroundImage
Refresh
Authentication
TokenExchangeResource
AuthCardButton
MetaData

Adaptive Cards Widget Sizes



Design Widgets with Adaptive Cards

Adaptive Cards & ChatGPT



Adaptive Cards can be designed & output using ChatGPT's AI

ChatGPT can help you create content & implement ideas

Craft prompt to create your ideal Windows 11 Widget

Output your Adaptive Card quickly & easily

chatgpt.com

Develop Widgets with Windows App SDK

Writing Windows 11 Widgets

Windows App SDK

Windows App SDK to build native Windows 10RS5 – 11 apps

Delivered from NuGet & updated every six months

Supports modern WinRT & native Windows APIs

Windows application development workload

aka.ms/winappsdk

Windows App SDK & .NET

.NET is a free & modern open-source developer framework

.NET & C# evolves to meet the needs of developers

Leverage latest .NET & C# in Windows App SDK

Create cross-platform .NET & C# applications

dot.net

Windows App SDK Widget Provider

IWidgetProvider
CreateWidget(WidgetContext)
DeleteWidget(widgetId, customState)
OnActionInvoked(WidgetActionInvokedArgs)
OnWidgetContextChanged(WidgetContextChangedArgs)
Activate(WidgetContext)
Deactivate(widgetId)

IWidgetProvider2
OnCustomizationRequested(WidgetCustomizationRequestedArgs)

aka.ms/widgetdevdocs

Develop Widgets with Windows App SDK

Windows App SDK Package Manifest

uap3:AppExtension
Name
DisplayName
Id
PublicFolder
Uap3:Properties

uap3:Properties
WidgetProvider

WidgetProvider
ProviderIcons
Activation
Definitions

ProviderIcons
Icon

Activation
CreateInstance

CreateInstance
ClassId

Definition
Id
DisplayName
Description
AllowMultiple
IsCustomizable
Capabilities
ThemeResources

Capability
Size

Size
Name

ThemeResources
Icons
Screenshots
DarkMode
LightMode

Icon
Path

Screenshot
Path

RELEASED

Comentsys.Toolkit.WindowsAppSdk

- Controls, Converters, Extensions & Widget functionality for Windows App SDK
- Wraps Classes & Methods developed by Microsoft for Windows 11 Widgets
- Inherit WidgetProviderBase from a lightweight Class for Widget Provider
- Inherit WidgetBase to implement Widget methods & functionality
- NuGet Package, open-source & Widget example on GitHub

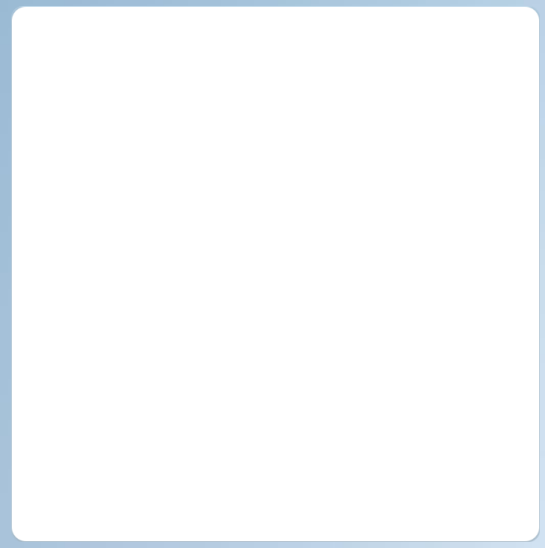
comentsys.com/packages/toolkits

WidgetProviderBase & WidgetBase

WidgetProviderBase
CreateWidget(WidgetContext)
DeleteWidget(widgetId, customState)
OnActionInvoked(WidgetActionInvokedArgs)
OnWidgetContextChanged(WidgetContextChangedArgs)
OnCustomizationRequested(WidgetCustomizationRequestedArgs)
Activate(WidgetContext)
Deactivate(widgetId)
UpdateWidget(widgetId, customState)
AddWidget(widgetName, widgetCreateDelegate)

WidgetBase
SetState(state)
CreateWidget(state)
Activate()
Deactivate()
DeleteWidget(state)
OnActionInvoked(WidgetActionInvokedArgs)
OnWidgetContextChanged(WidgetContextChangedArgs)
OnCustomizationRequested(WidgetCustomizationRequestedArgs)
GetTemplateForWidget()
GetDataForWidget()

When Widgets go Wrong



Uninstall your Application using Add or Remove Programs

Deploy your Application again from Visual Studio 2022

Commands if Widget is Blank in Widgets Board

```
winget uninstall --id 9MSSGKG348SP
```

```
winget install --id 9MSSGKG348SP
```

Qudos

Demo

Design & Develop Widgets

Overview

Windows 11 features at-a-glance Widgets to stay in your flow

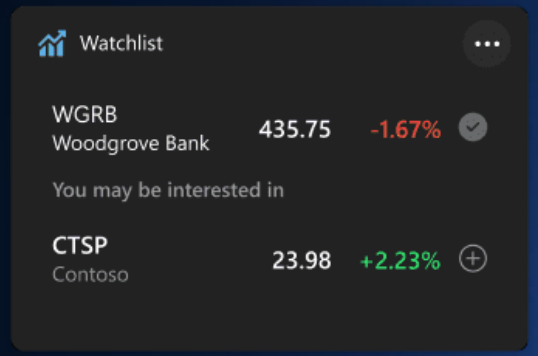
Design your Windows 11 Widgets using Adaptive Cards

Quickly & easily create Adaptive Cards with ChatGPT

Develop your Widgets with Windows App SDK

Use Comentsys.Toolkit.WindowsAppSdk

Any Questions?



dot.net

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aka.ms/winappsdk

aka.ms/widgetdevdocs

comentsys.com/packages/toolkits

github.com/rogueplanetoid/writingwindows11widgets