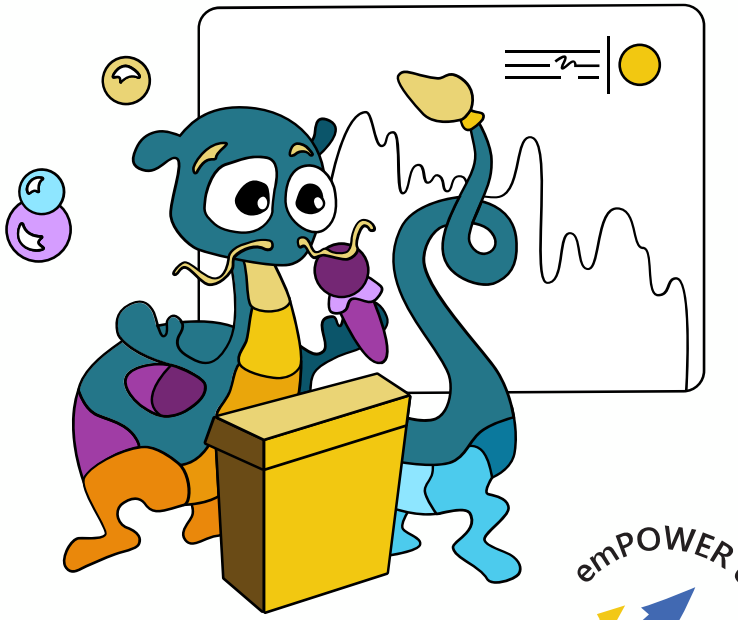
Developing Custom Code Websites for Power Pages

September 21st | 11:00am



Nick Doelman

Senior Content Developer, Microsoft

Dushyanthkumar Chandramouli

Technology Director, PricewaterhouseCoopers LLP (PwC LLP)

empOWER everyone

Microsoft Power Platform CONFERENCE

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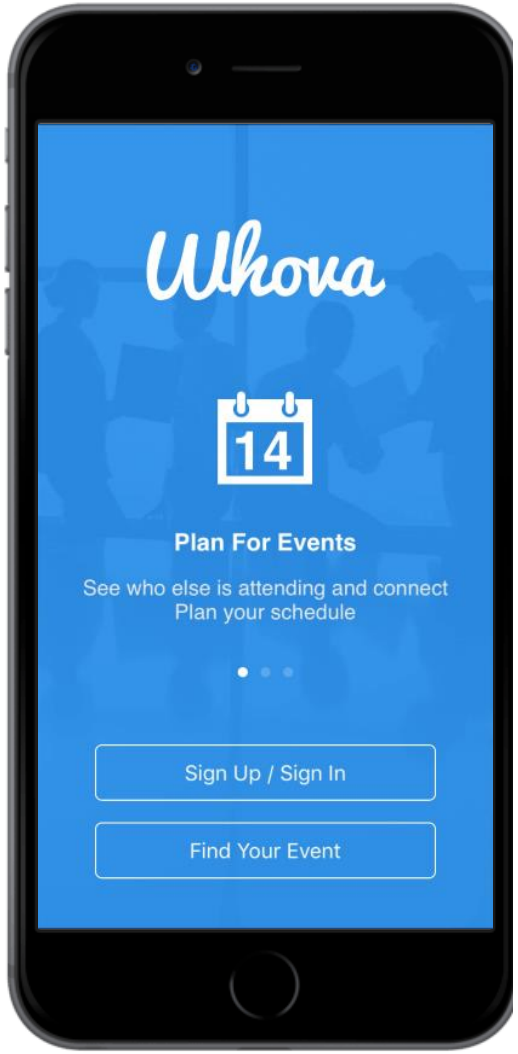

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The event invitation code is: MPPCFall22

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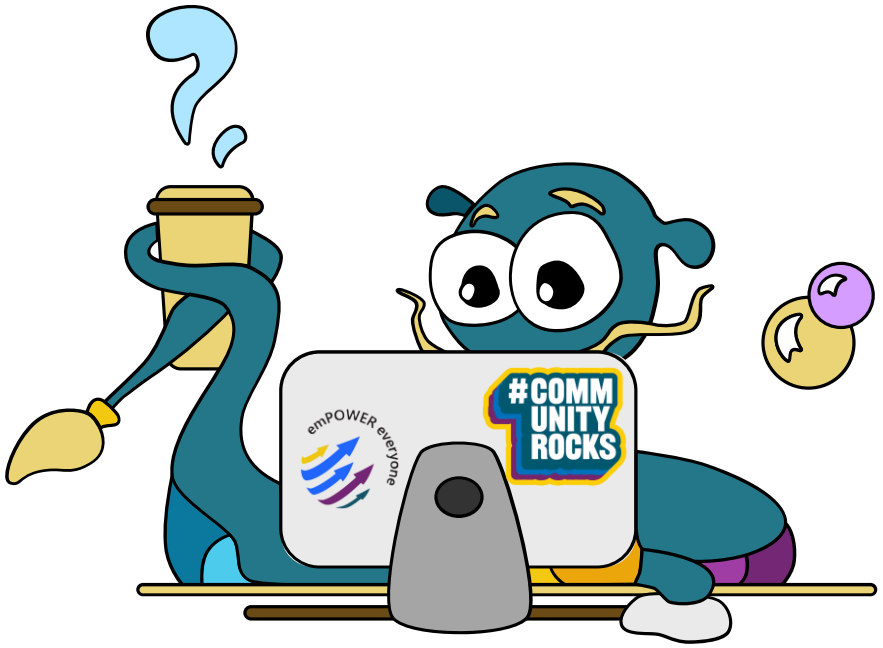
A brand-new upskilling program for people from non-technical backgrounds, to enable them to get better career opportunities.

Through guided curriculum, self-paced learnings, instructor-led training, and hands-on exercises, participants will learn new skills while being supported by the Power Platform community and Microsoft product teams.

aka.ms/MSPowerUp

Microsoft Power Platform



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Discover the difference being part of the Microsoft Power Platform Community can make for you.

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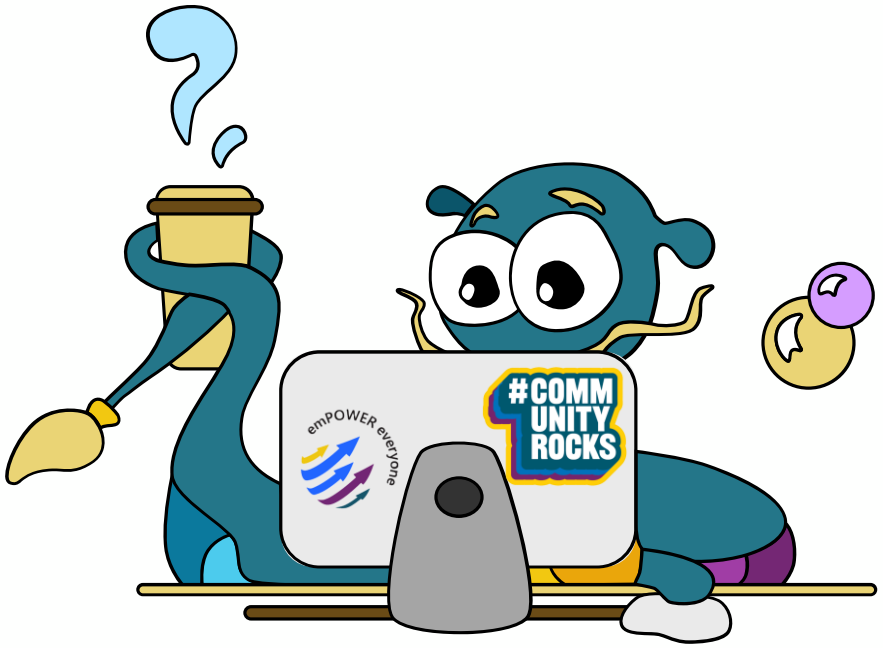
Microsoft Power Platform



Agenda

27.5 minutes – Developers guide to Power Pages (Nick Doelman)

27.5 minutes - Real world example – PWC (Dushyanthkumar Chandramouli)

5 minutes Q & A

Speaker

Nick Doelman

Senior Content Developer
Microsoft

- 20 Years Experience with Power Platform
- Former Microsoft MVP (2017-2021)
- Microsoft Certified Trainer (MCT)
- Competitive Powerlifter (Team Canada)
  - 3rd place Canadian National Championship
  - 1st place North American Championship

https://www.linkedin.com/in/nickdoelman/

https://readyxrm.blog

@readyxrm

https://github.com/readyxrm

Speaker

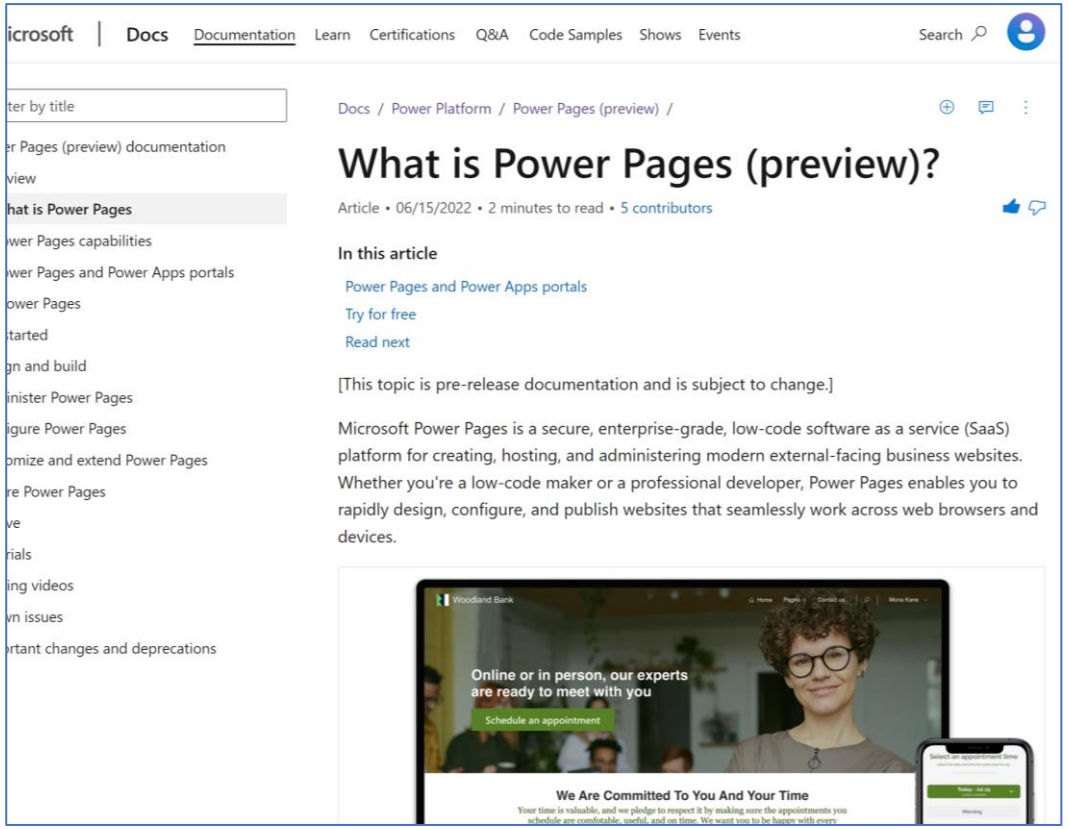
Dushyanthkumar Chandramouli

Technology Director, PricewaterhouseCoopers LLP (PwC LLP)

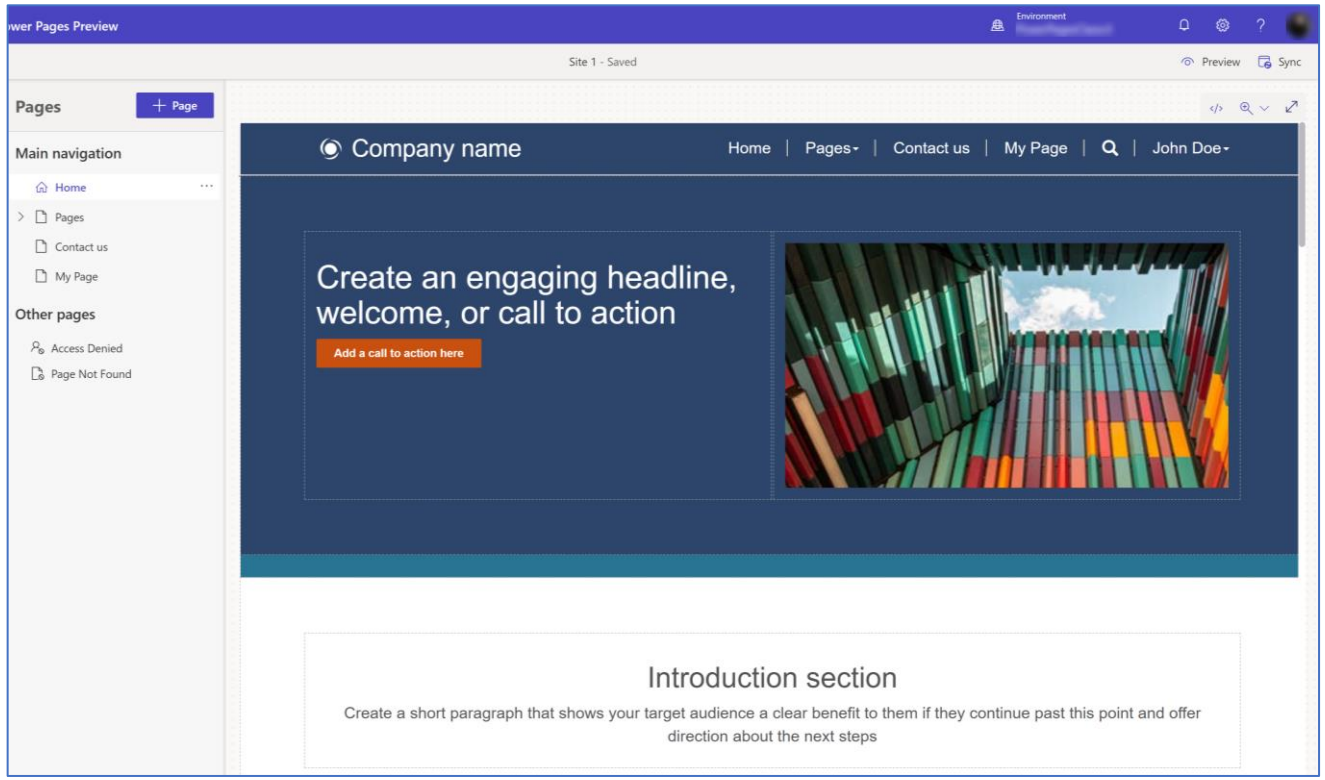
I'm the Lead Architect at PwC's Power Platform Center of Excellence, driving the rollout of Power Platform to the firm. I come from a ProDev (Full-Stack) software engineering background. I'm very passionate about leading, mentoring, and empowering fusion teams to solve enterprise business problems and reimagine the possible by embracing the Microsoft ecosystem. The Power Platform ecosystem invokes innovation and big-picture thinking at the grassroots level. A perfect description of what drives me! My goal is to be a trendsetter. I want to play a pioneering role in changing the paradigm of software development to solve business problems through re-imagined Rapid Application Development (RAD) .

What is Power Pages?

- Build business websites
- Part of the Power Platform
- Build standalone sites or extend existing Power Platform solutions
- Design studio provides tools for low-code, no-code makers to build sites
- Power Pages = Power Apps portals



Tools for the low-code, no-code website maker and admins



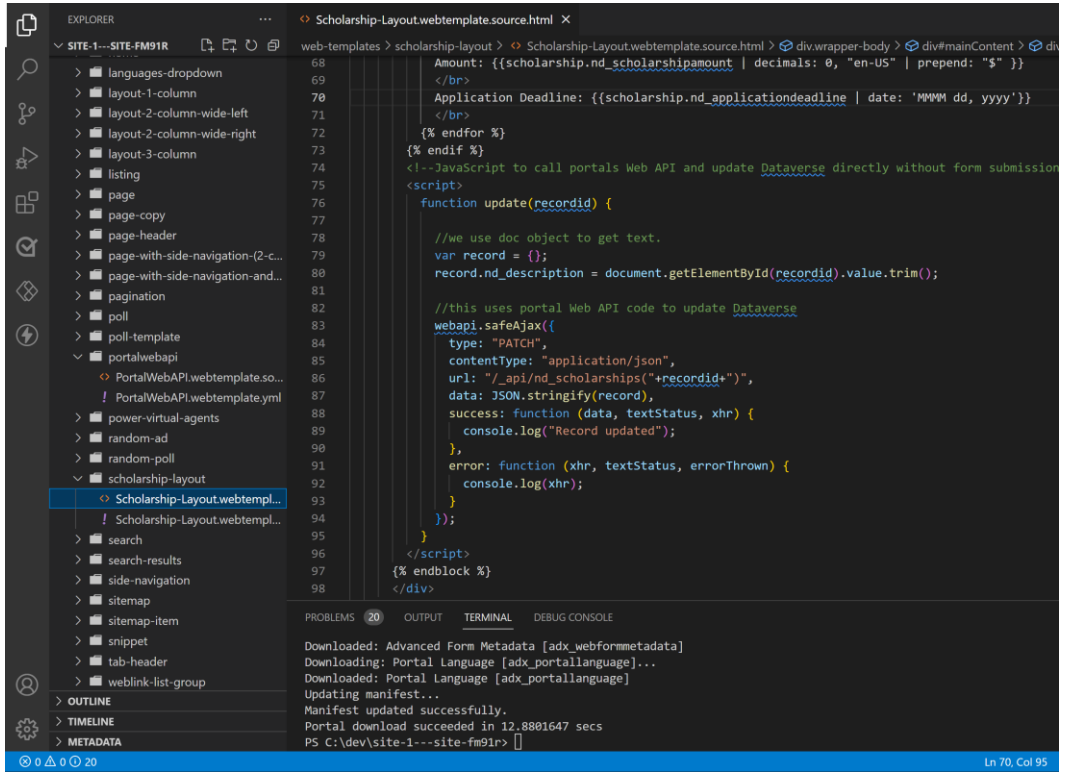
- Home page
- Design studio
  - Pages workspace
  - Styling workspace
  - Data workspace
  - Set up workspace
- Portals Management app
  - Directly update portal metadata
- Power Platform admin center + portals admin center

Do we even need pro-developers?

- Photo by bruce mars on Unsplash

Answer: YES! The role of pro-developers

- Custom page layouts
- Advanced CSS
- Integrations (e.g. Payment gateway)
- Code components (PCFs)
- Specialized UX functionality
- Backend functionality (Dataverse plug-ins)
- And more…



Key Power Pages developer skillsets

Traditional web skills

- HTML
- JavaScript
- CSS

Power Platform developer skillsets

- Microsoft Dataverse plug-ins
- Dataverse Web API => Portals Web API
- FetchXML
- Code components (PCF)
- JavaScript*
- Liquid

What is Liquid?

- Open Source markup language for dynamically showing content
- Can be placed in any “content” areas (Web Page content, Content Snippets, headers, footers, etc)
- Can be mixed with HTML, CSS and JavaScript
- Runs server-side
- Read-only execution
- Foundation of Web Templates

Using the portals Web API

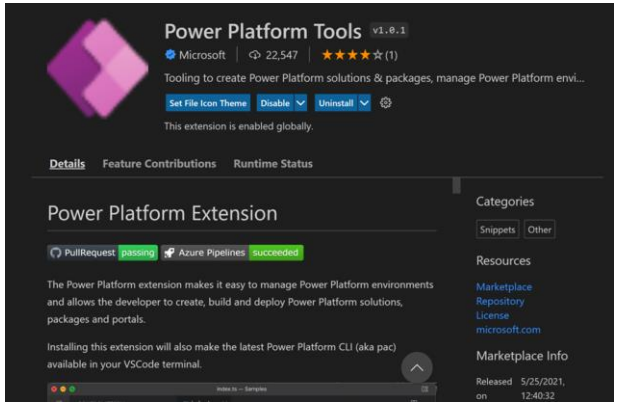
Based on Microsoft Dataverse Web API

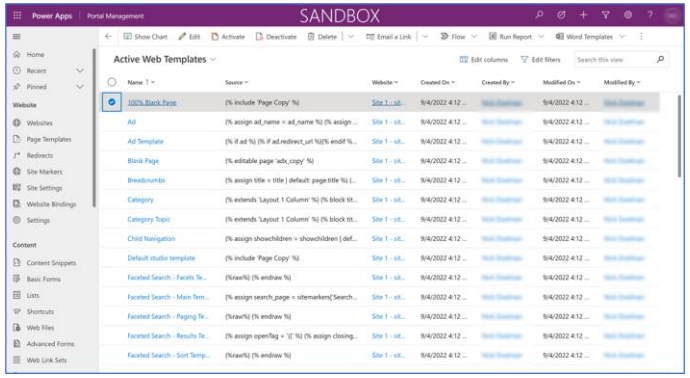
Allows create, read, update and delete of Dataverse data without submitting a form

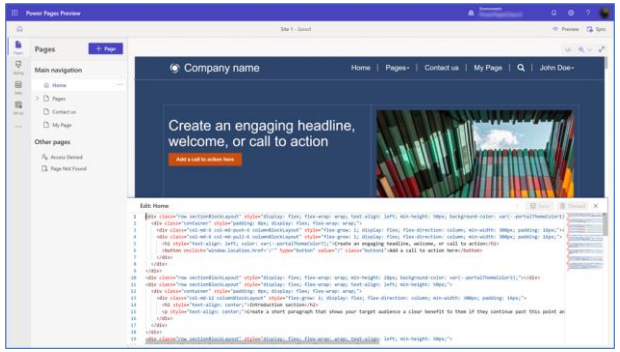
Meant for functionality within the site itself, not meant to update other sites

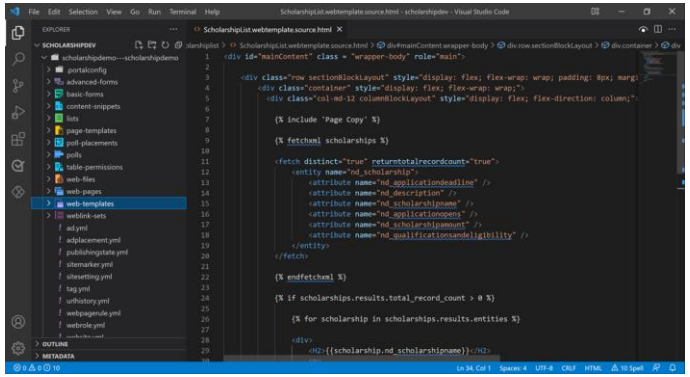
Power Pages developer toolbox

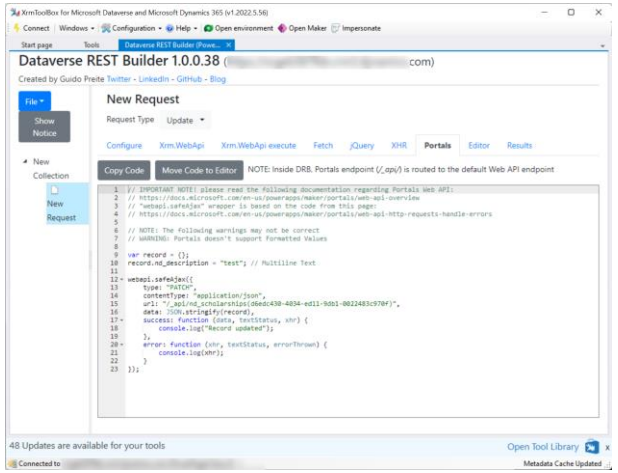
- Design studio
- Portal Management app
- Power Platform CLI
- Visual Studio Code
- Azure Dev Ops/GitHub
- Other helpful community tools



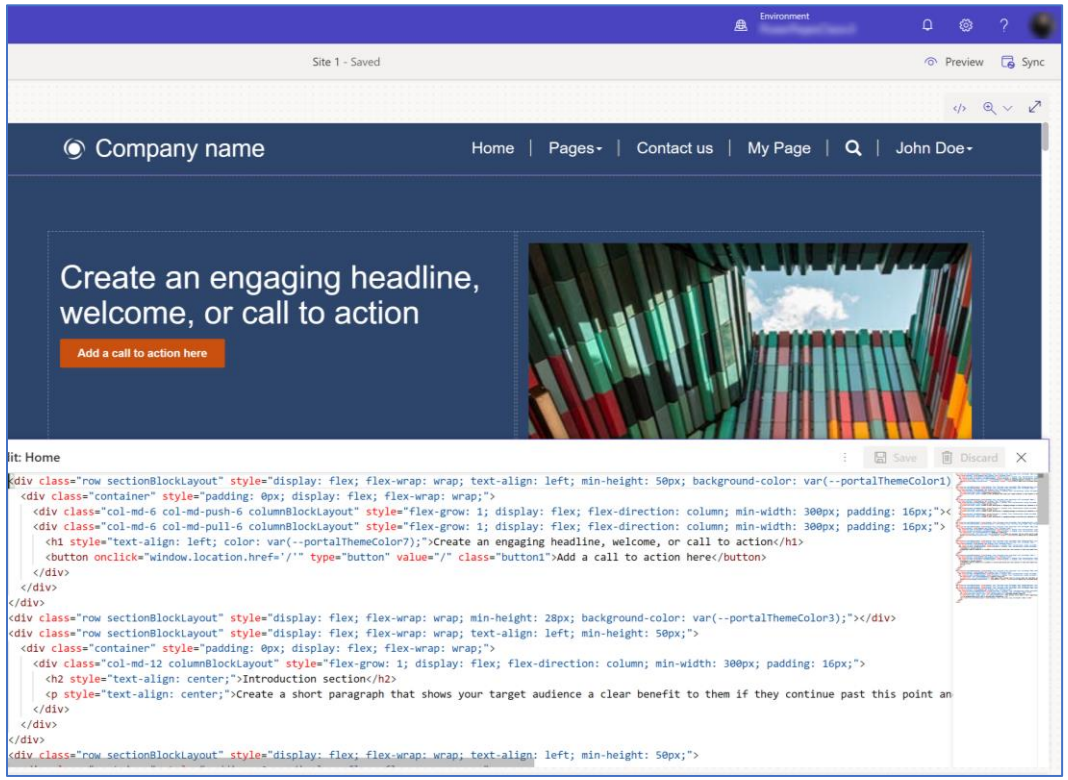






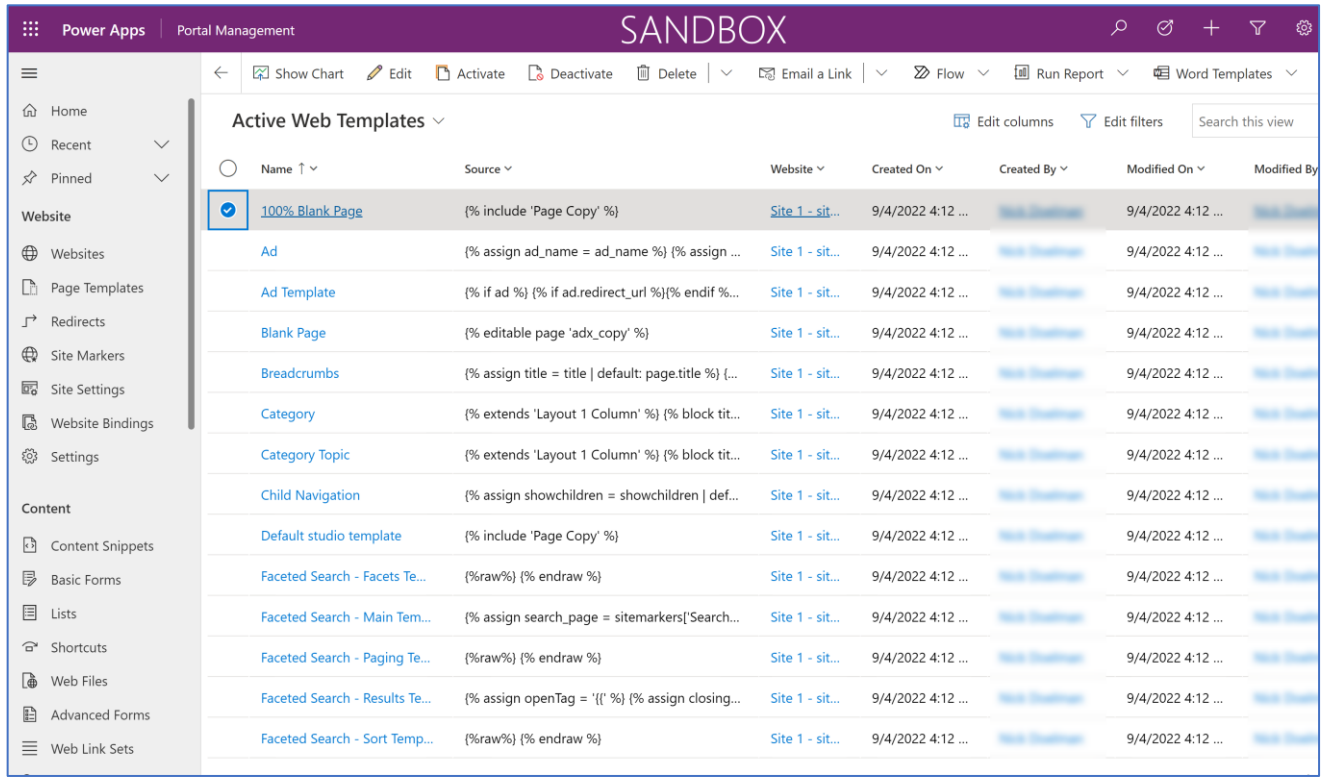


Design studio



- Workspaces
  - Pages
  - Data
  - Styling
  - Set up

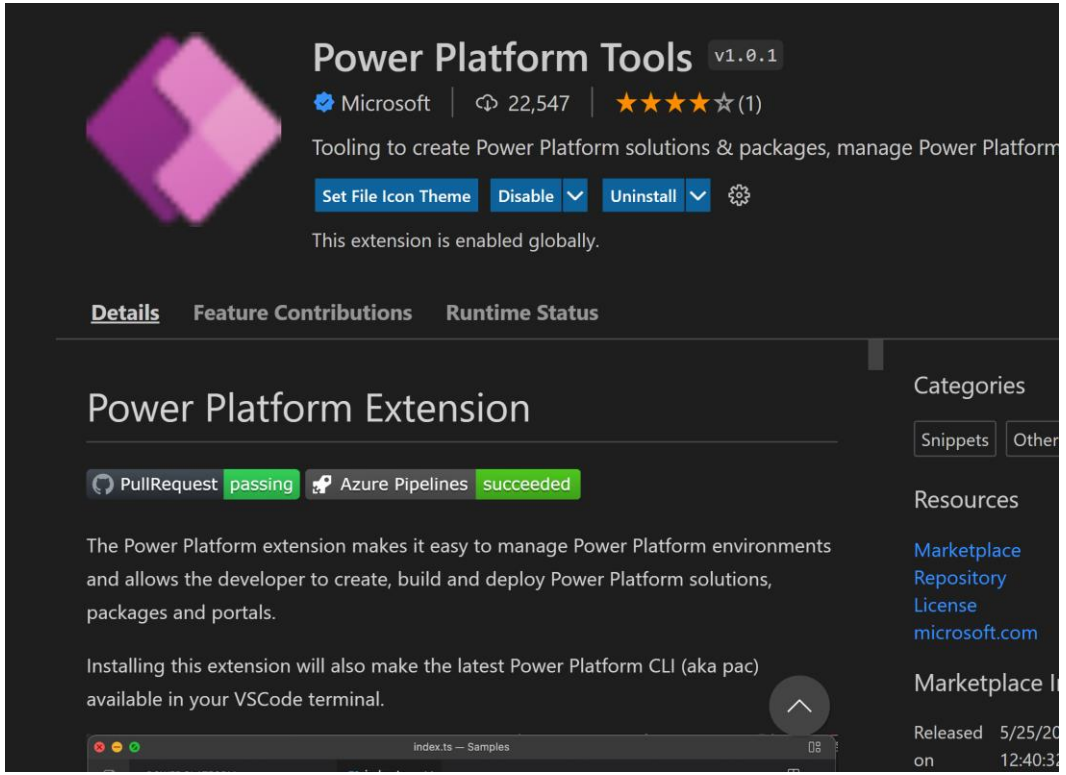
Portal Management app



- Model-driven Power App
- Used to create and update site metadata
- Addresses gaps where tools don’t exist in design studio
- Need to configure components such as content snippets, site settings, web templates, page templates, security when creating custom solutions

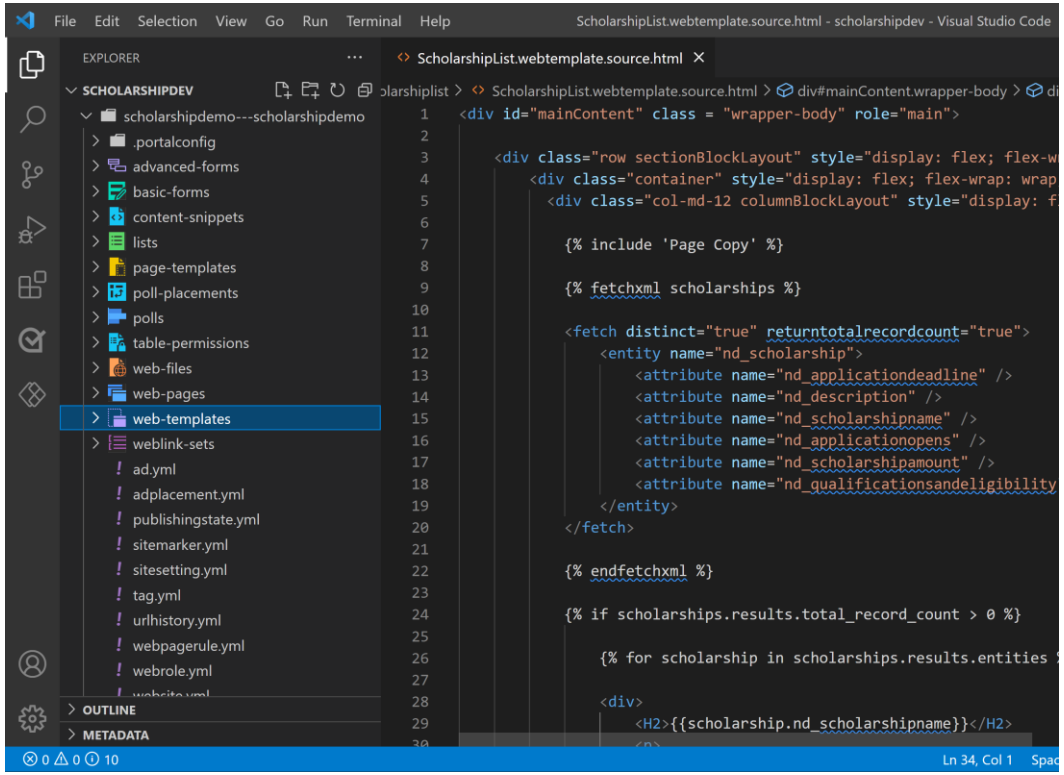
Developer Tools: PAC CLI

- Power Platform Command Line Interface
- Recommend to install as part of the Power Platform Tools in Visual Studio Code
- https://docs.microsoft.com/en-us/powerapps/developer/data-platform/powerapps-cli



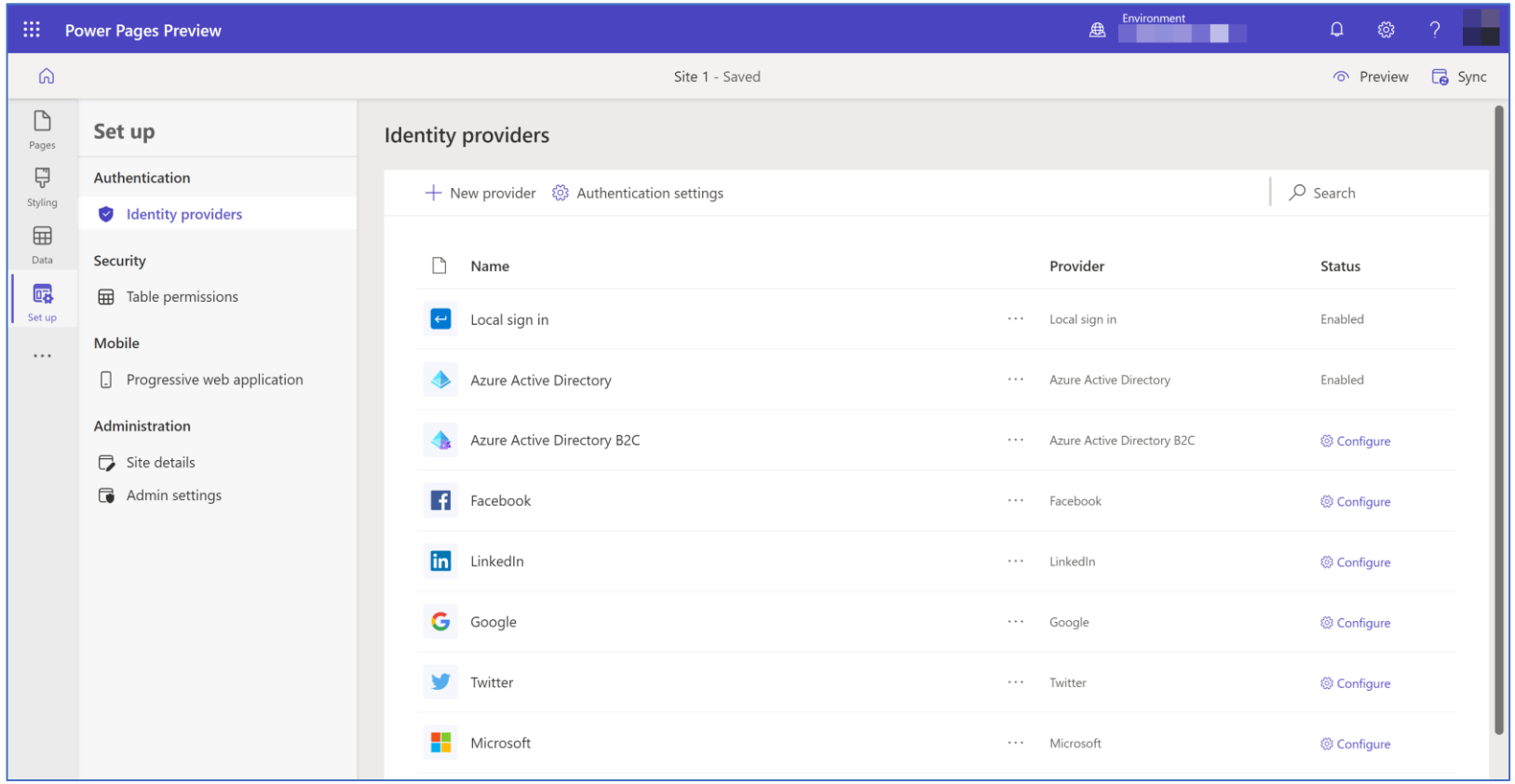
DEVELOPER TOOLS: VS CODE

- Edit Web Template code + other portal configuration locally, upload updates and commit to source control
- Intellisense



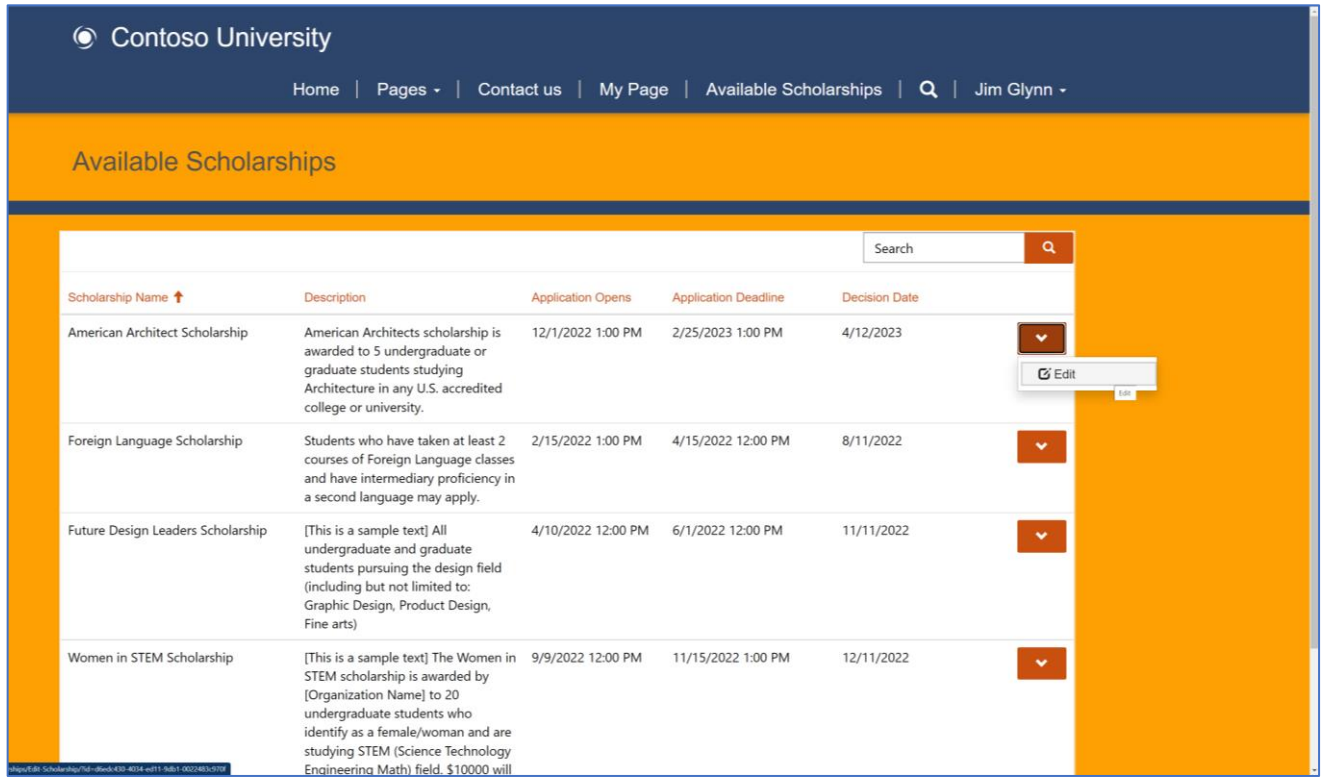
Power Pages Authentication

- Power Pages utilizes a variety of external authentication providers
- Additional security, such as table permissions, page permissions, web roles to protect content and data
- Sites are marked private by default (new)



Walkthrough: Extending Power Pages using pro-developer tools

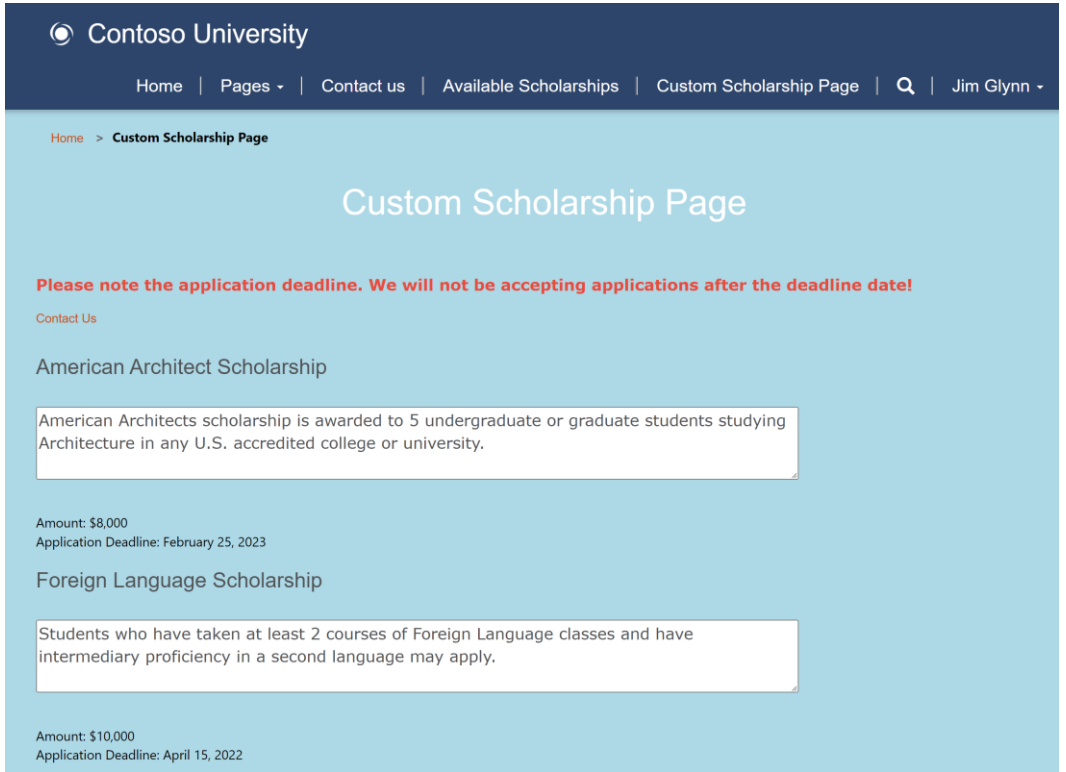
Demo – Developer Enhancement



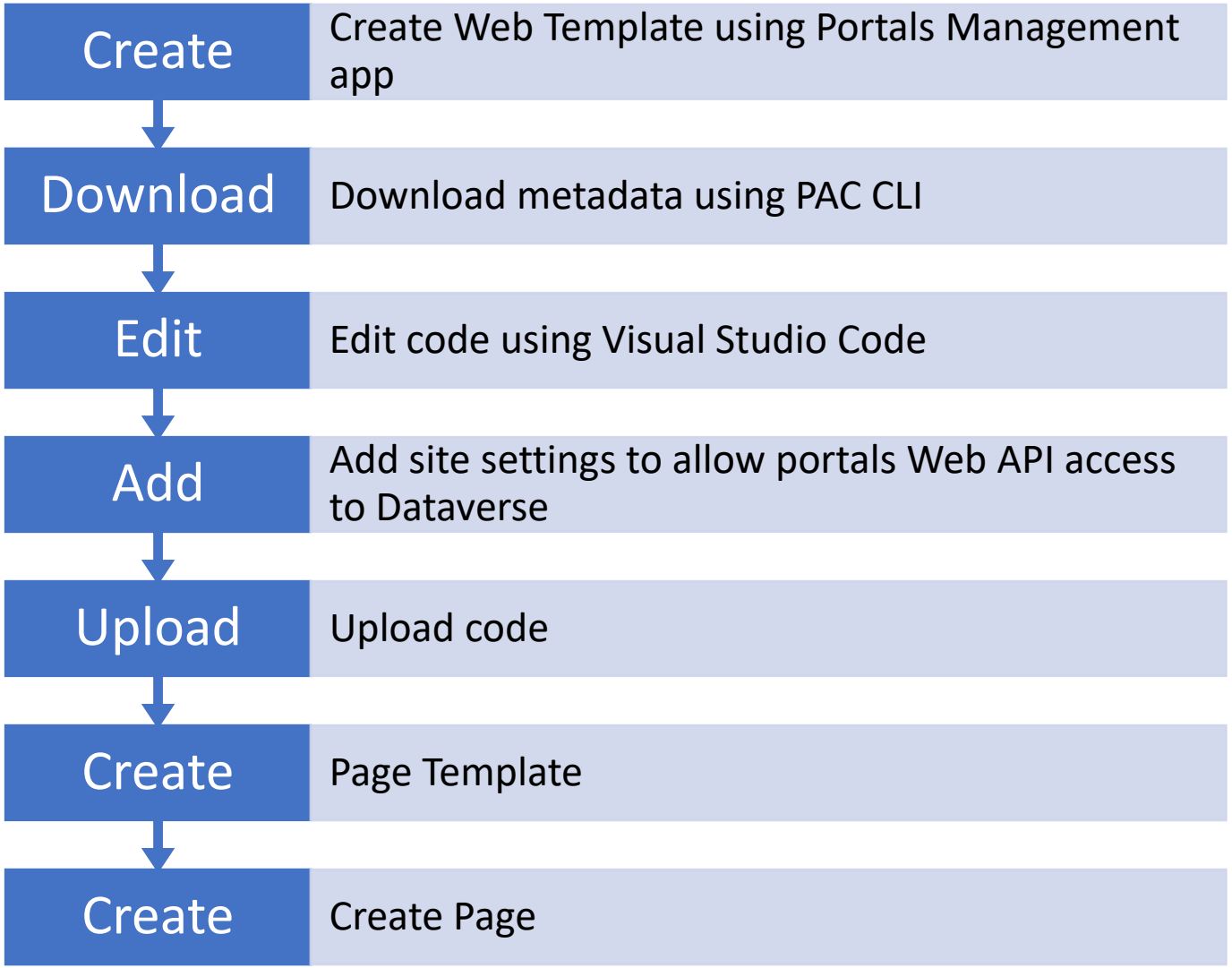
- Makers have used Data and Pages workspace to build a page with a list of scholarships
- Scholarships can be edited by authenticated users
- Business wants a “digest” view of scholarships, uniquely formatted + ability to edit directly

Solution

- Custom web template
- Use Liquid, HTML, CSS, and JavaScript
- Use portals Web API to update data

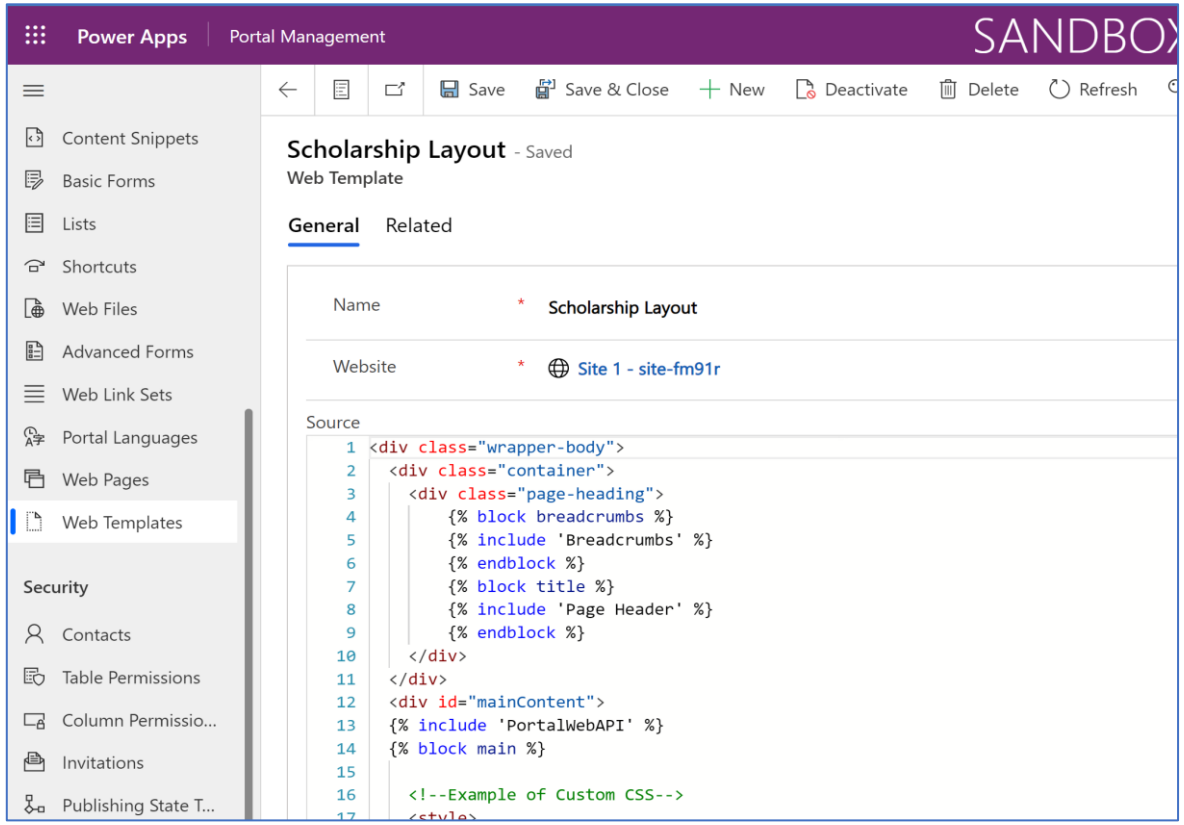


Steps to build solution

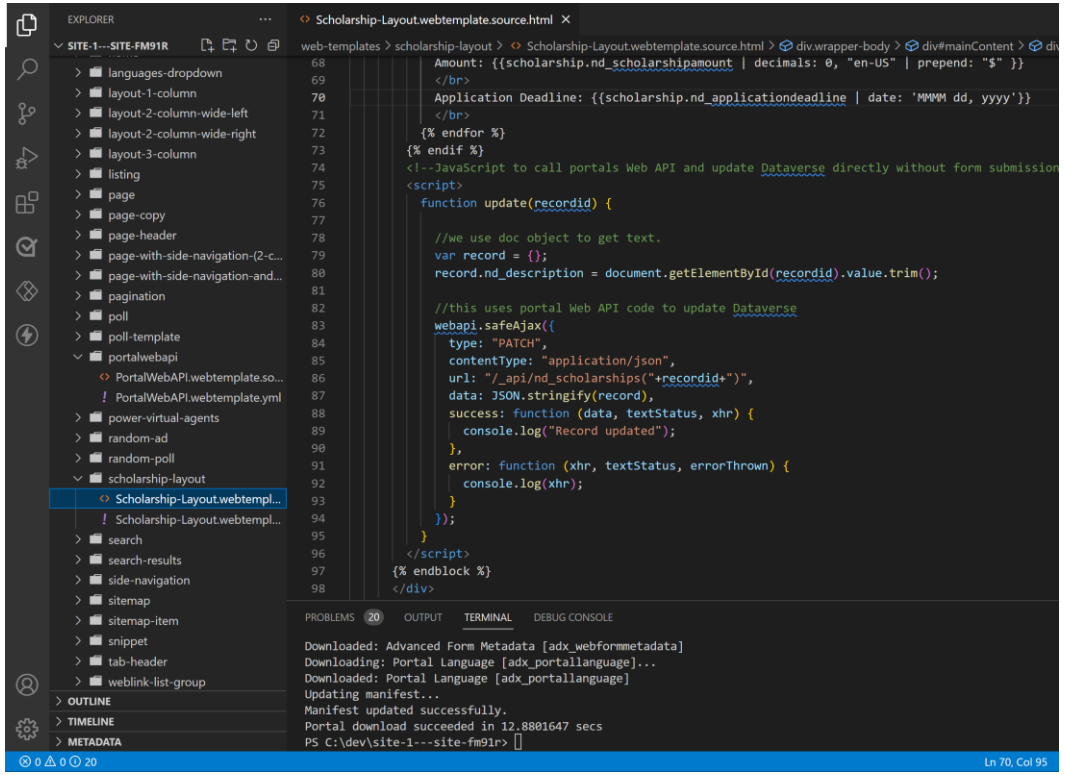


Create Web Template

- Currently need to create assets in Portal Management app
- You can add/edit code here, but VS Code is better



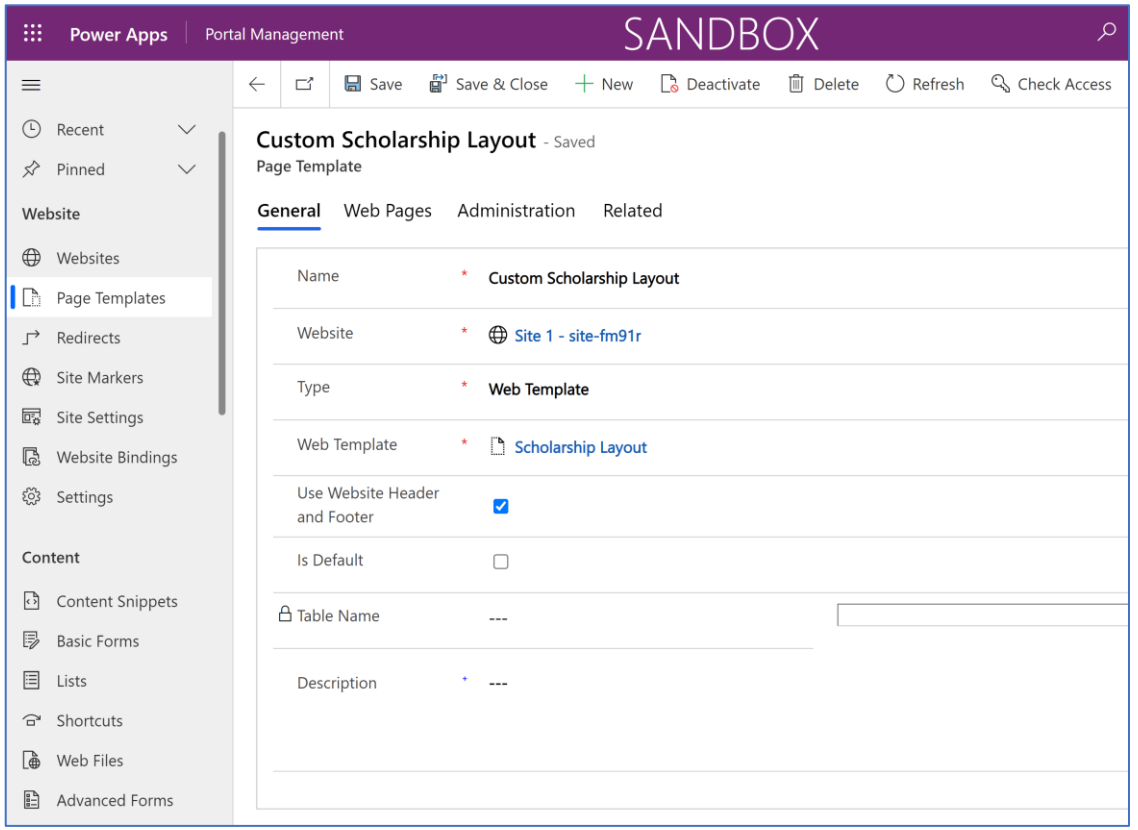
Edit in Visual Studio Code



- Download using PAC CLI
- Update web template
- Integration with GitHub other Dev Ops tools
- Upload using PAC CLI

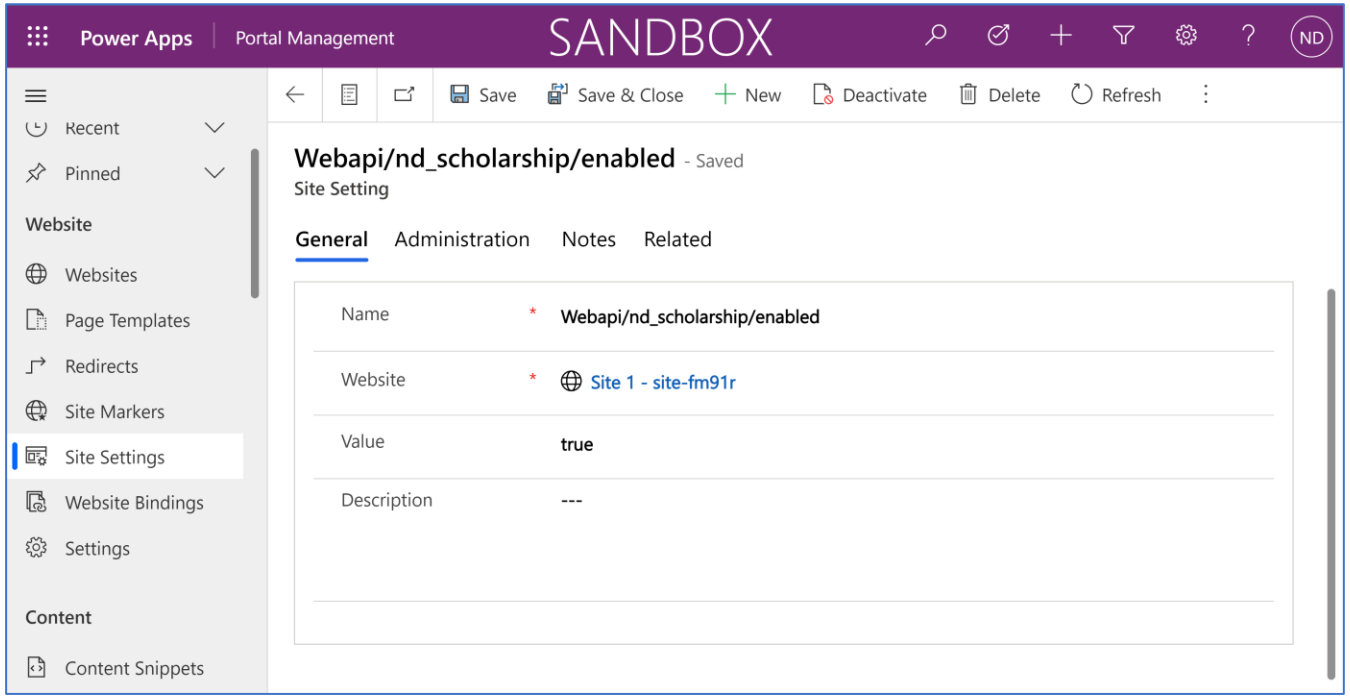
Page Template

- Basic for Page Layouts
- Can define to use header and footer (or not)



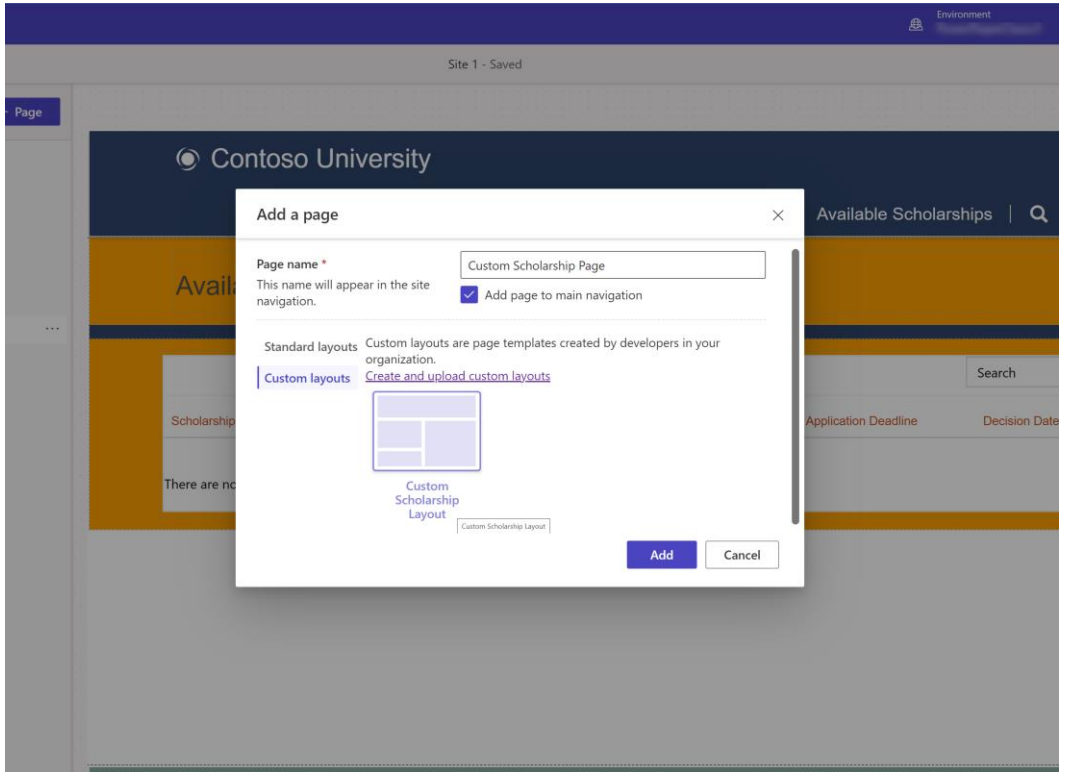
Site Settings

Need to specify tables + fields that can be accessed by portals Web API



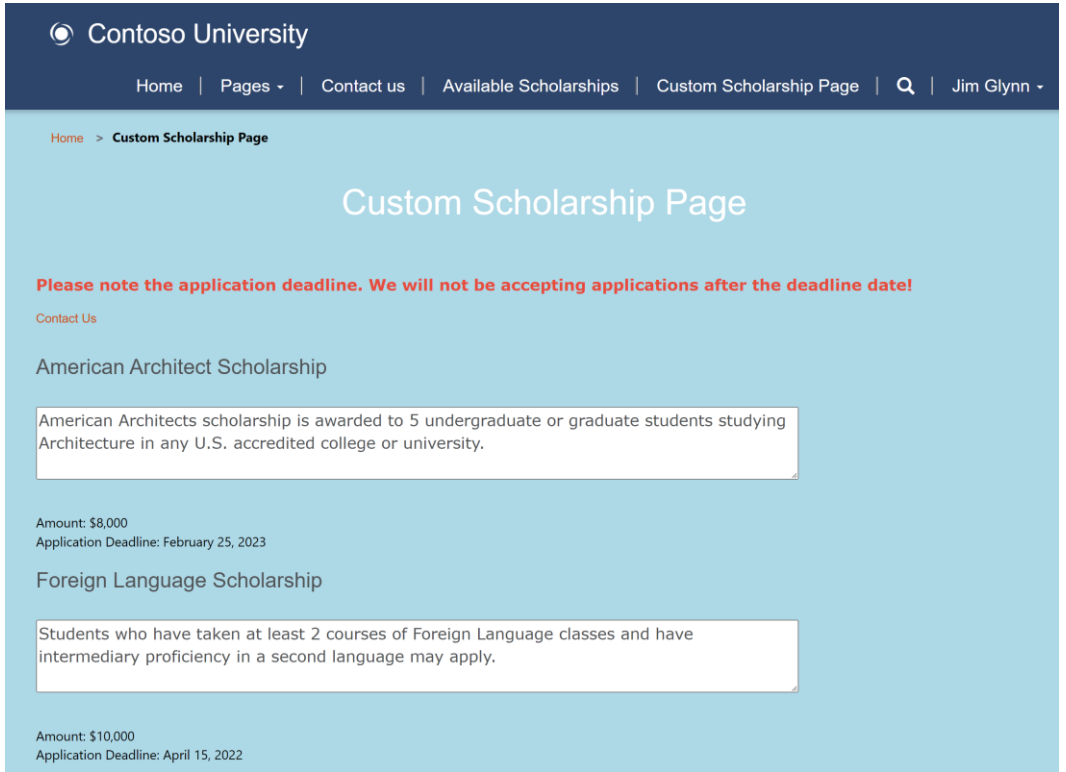
Add Web Page using custom layout

- Add the page
- Choose custom layout
- Preview the page



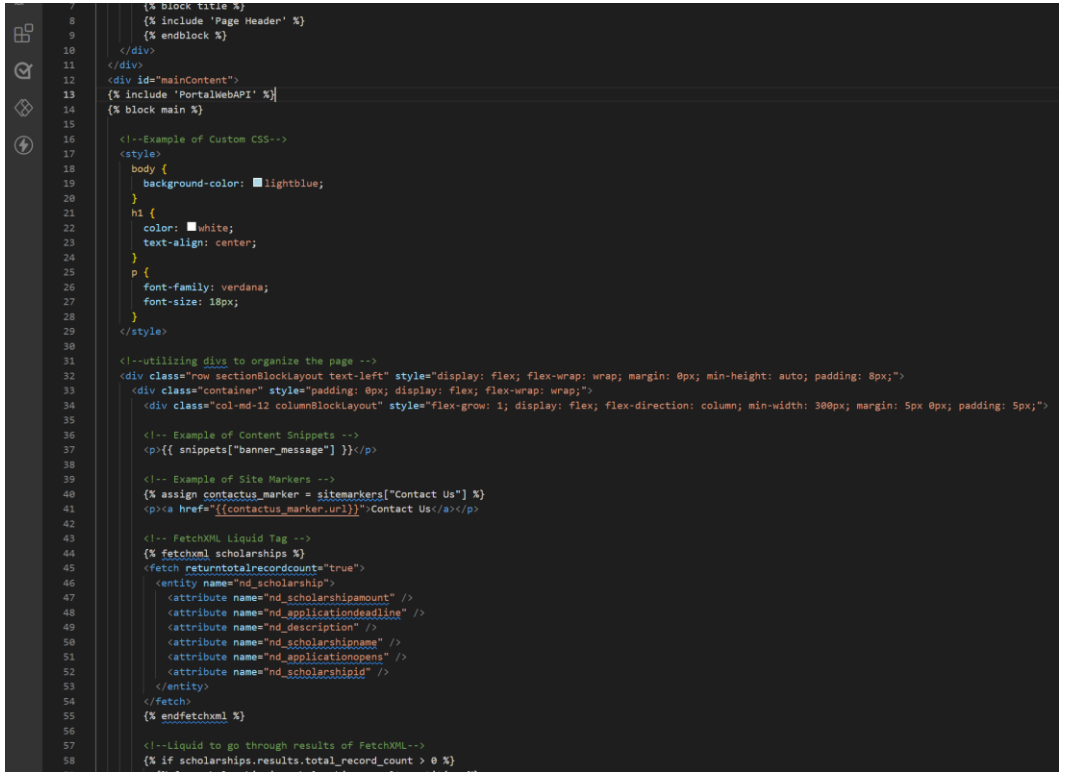
End result

- Test functionality using browser developer tools
- Can update code, upload, sync, preview

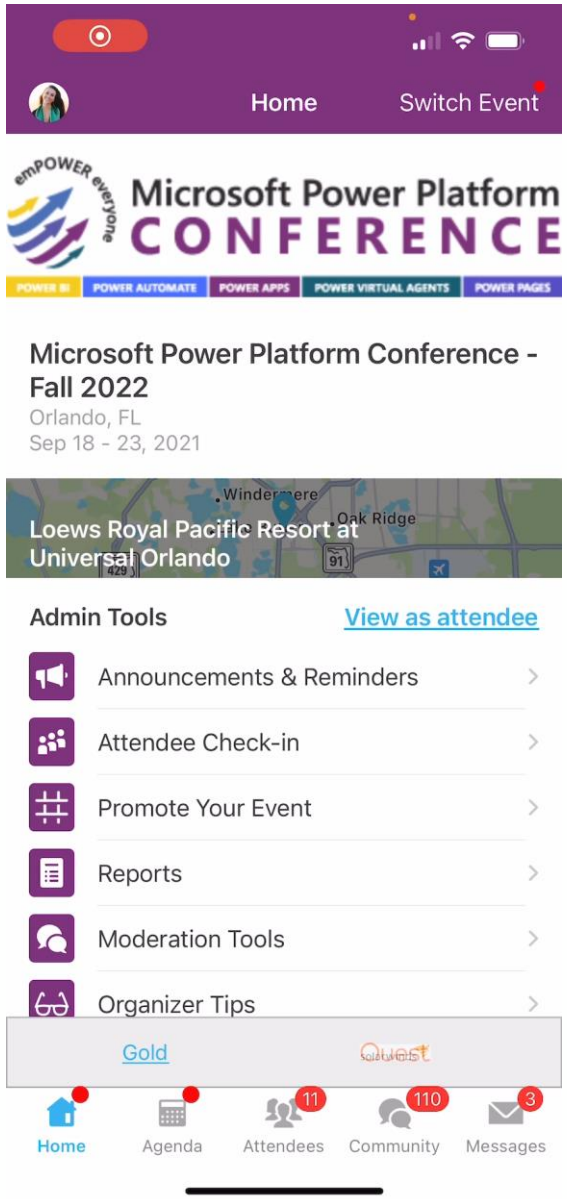


Code breakdown

- HTML page for overall structure
- Embedded CSS for specific styling
- Liquid objects to render content snippets, site markers
- Liquid FetchXML to retrieve Microsoft Dataverse records
- JavaScript to trigger update to call portal Web API to update Dataverse



Real world case study – PwC LLP



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