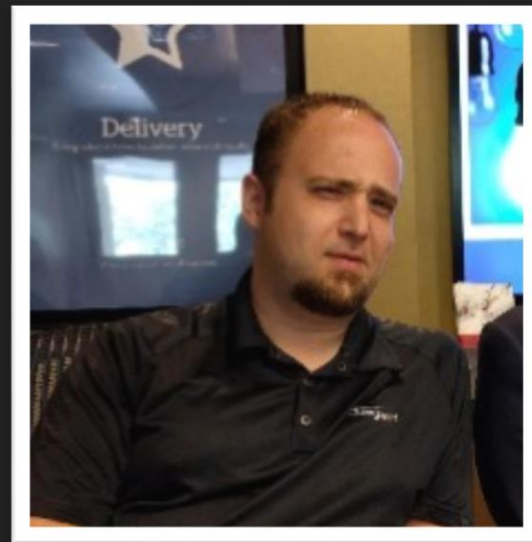


SharePoint Framework

Getting Started with SPFx.

Introductions

- Matt Jimison
 - mjimison@allegient.com (mail)
 - @mjimison (twitter)
- Director of Platform Solutions
 - Allegient, a DMI Company (7 yrs)



Agenda

- A Brief History of SharePoint Development
- Introduction to the SharePoint Framework
- Setting up your Dev Environment
- Hello Chicago Web Part
- Development Tips

A Brief History of SharePoint Development

A Magical Adventure

SharePoint as a Platform



Branding



User Experience



Business Intelligence



APIs

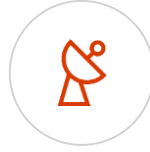


Processes



Packaging & Deployment

SharePoint as a Platform



SharePoint as a Platform

SP 2010

On-Premises Only

New



Branding



User Experience



Business Intelligence



APIs



Processes



Packaging & Deployment

Themes

Alternate CSS

Custom Master
Page

OOTB Web Parts

InfoPath & SPD

PowerPivot

Excel Services

Reporting
Services

PerformancePoint

CSOM & JSOM

Web Services

Server Side APIs

2010 Workflows

Event Receivers

SSIS

Declarative
Sandbox

.NET Sandbox

Full Trust
Solutions

SharePoint as a Platform

SP 2013

On-Premises Only

New



Branding



User Experience



Business Intelligence



APIs



Processes



Packaging & Deployment

Themes

Alternate CSS

Composed Looks

JS Injection

Custom Master
Page

Client Side
Rendering

Custom Actions

Add-in Parts

OOTB Web Parts

InfoPath & SPD

ASP.NET 4.5
Integration

Power BI

PowerPivot

Excel Services

Reporting
Services

PerformancePoint

REST

CSOM & JSOM

Web Services

Server Side APIs

2013 Workflows

2010 Workflows

Remote Event
Receivers

Event Receivers

SSIS

PnP Provisioning

PnP Partner Pack

Add-ins

Declarative
Sandbox

.NET Sandbox

Full Trust
Solutions

SharePoint as a Platform

O365

On-Premises Only

New



Branding



User Experience



Business Intelligence



APIs



Processes



Packaging & Deployment

Themes

SPFx

Power BI

Microsoft Graph

Microsoft Flow

SPFx Client Side Solutions

Alternate CSS

Power Apps

PowerPivot

REST

Webhooks

PnP Provisioning

Composed Looks

Client Side Rendering

Excel Services

CSOM & JSOM

2013 Workflows

PnP Partner Pack

JS Injection

Custom Actions

Reporting Services

Web Services

2010 Workflows

Add-ins

Custom Master Page

Add-in Parts

PerformancePoint

Server Side APIs

Remote Event Receivers

Declarative Sandbox

SPFx Extensions

OOTB Web Parts

Event Receivers

.NET Sandbox

InfoPath & SPD

SSIS

Full Trust Solutions

ASP.NET 4.5 Integration

SharePoint as a Platform

Not Recommended

On-Premises Only

New



Branding



User Experience



Business Intelligence



APIs



Processes



Packaging & Deployment

Themes

SPFx

Power BI

Microsoft Graph

Microsoft Flow

SPFx Client Side Solutions

Alternate CSS

Power Apps

PowerPivot

REST

Webhooks

PnP Provisioning

Composed Looks

Client Side Rendering

Excel Services

CSOM & JSOM

2013 Workflows

PnP Partner Pack

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Reporting Services

Web Services

2010 Workflows

Add-ins

Custom Master Page

Add-in Parts

PerformancePoint

Server Side APIs

Remote Event Receivers

Declarative Sandbox

SPFx Extensions

OOTB Web Parts

InfoPath & SPD

ASP.NET 4.5 Integration

Event Receivers

.NET Sandbox

SSIS

Full Trust Solutions

Introduction to the SharePoint Framework (SPFx)

SharePoint development meets open source standards.

SharePoint Framework (SPFx)

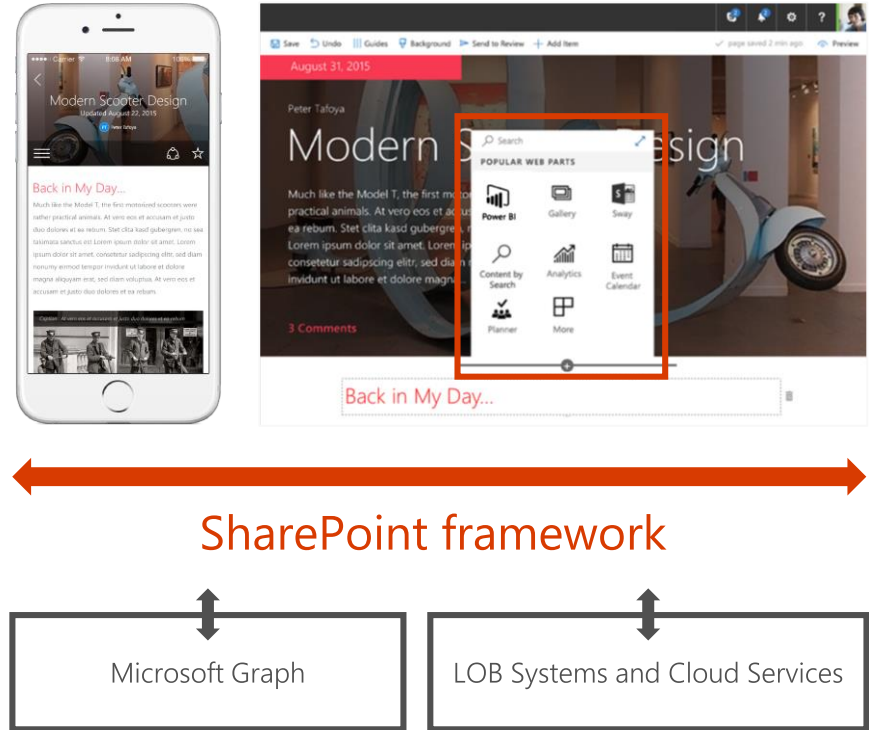
Modern client-side development

Lightweight web and mobile

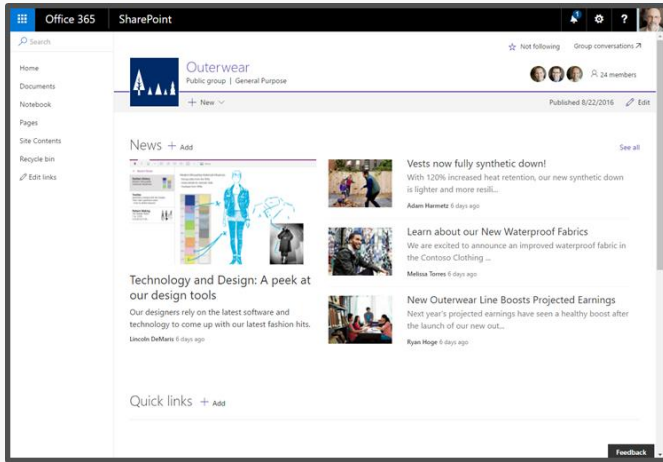
Powers OOTB experiences

Backward compatible

Supports open source tools
and JavaScript web frameworks



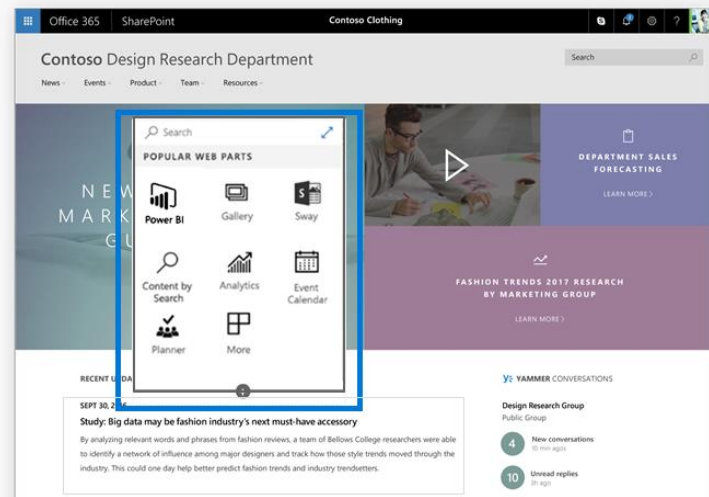
The Modern SharePoint page



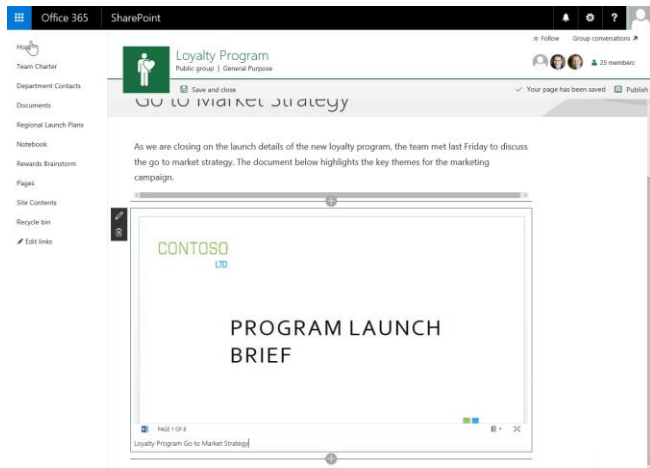
- Provides more productive experiences in all out-of-the-box SharePoint site types and custom applications
- Built using the **SharePoint Framework** (client-side HTML and JavaScript)
- Support across all types of devices and modern browsers
- Pages and Web Parts are responsive by design and support existing add-ins

The Authoring Canvas

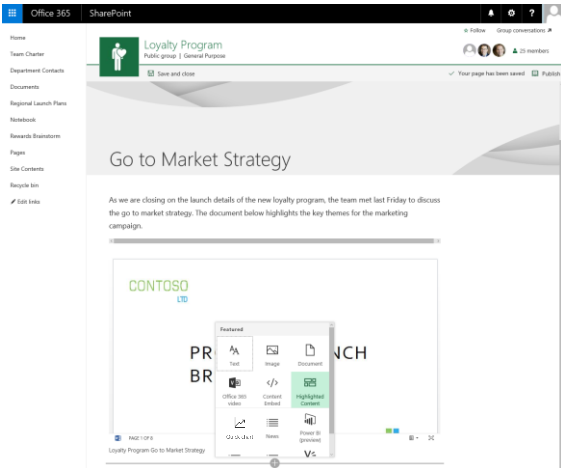
- Updated experiences for end user configuration
- Web Parts work in both classic pages and new pages
- Container for Web Parts, rich text, and more...



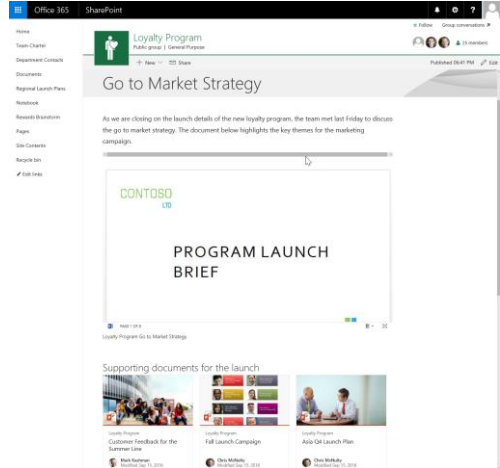
Client-side Web Parts



They are still web parts!



Built for the modern, JavaScript-driven web.



Runs directly inside a SharePoint Page.



But wait... There's more.

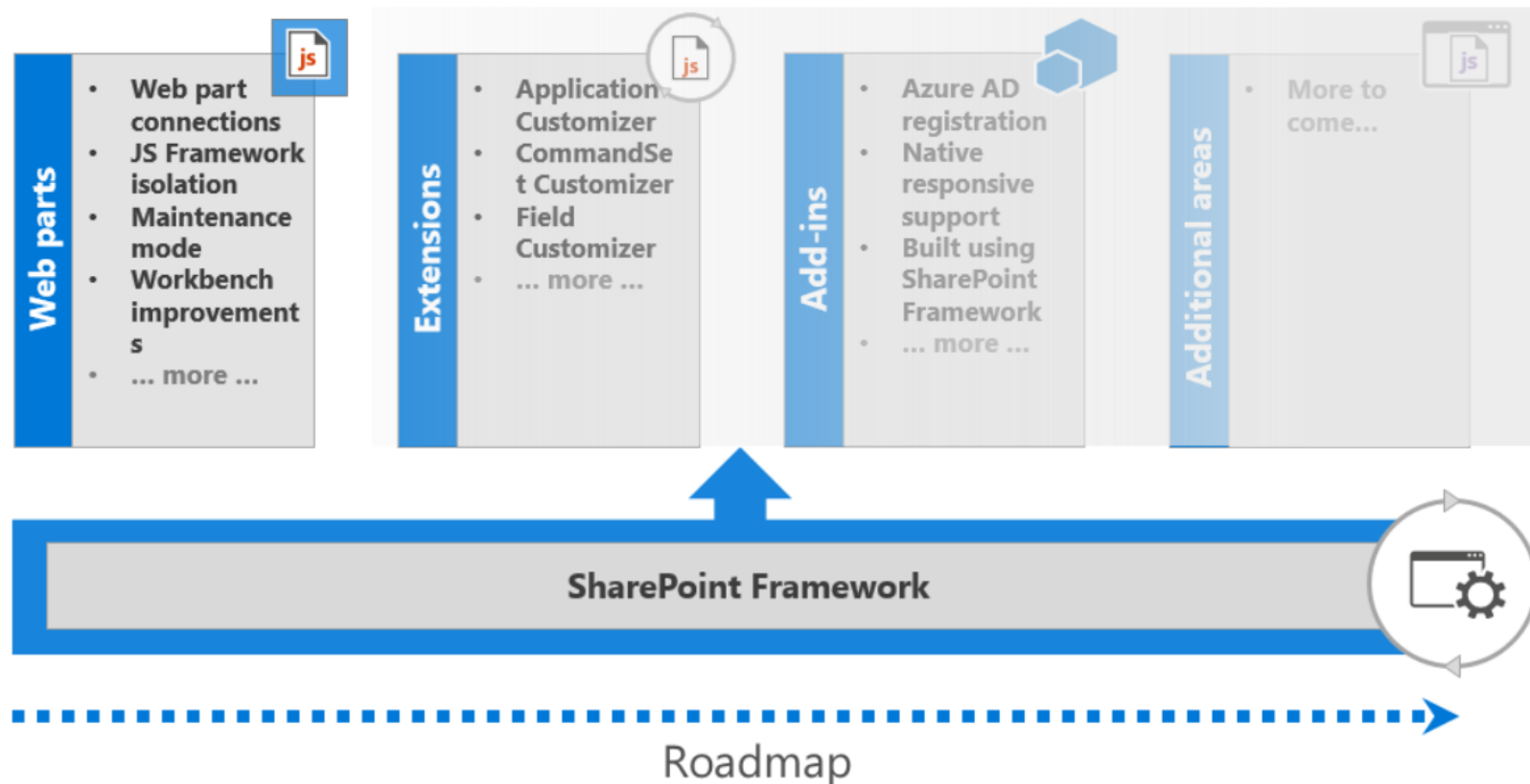
Hot off the press.

SharePoint Framework extensions in SharePoint page

The screenshot shows a SharePoint page for 'Beginning Whitewater Rafting' under the 'contoso adventure' site. The page has a green header bar with a warning message: 'This library contains sensitive information. Please handle according to [contoso policies](#). (Phone Number, Emergency Contact Name, Emergency Phone Number)'. The left sidebar shows navigation links: Home, Notebook, News, Attendee List, Site contents, Recycle bin, and Edit. The main content area displays a list of attendees with columns for Name, Email, and Phone Number. A context menu is open over the list, showing options like Open, Edit, Share, Copy link, Copy field to clipboard, Delete, Flow, Alert me, More, Contact this Attendee, and Details. Three green callout boxes provide information about SharePoint Framework extensions:

- Application Customizer:** Areas in the page available for **Application Customizer** to embed customizations for end users. Application Customizer can be also invisible for the end users.
- Command Set customizer:** Can be used to introduce new custom actions to a list. Can be configured to be active when numerous items are selected. Executes associated custom code when clicked.
- Field customizer:** Can be used to customize experiences around the specific fields. You can associate field customizer component to a specific field instance to make a customization execute when it's used.

SharePoint Framework Roadmap



SharePoint Framework Considerations

Before you begin.

Governance

Strive for a simple (1-2 pages) document that outlines the following

For Customers	For Developers
Standardize Client-side libraries	Development practices
External scripts policy	Testing approach
Hosting location	Deployment to production
Explicit agreements with ISVs	Updates and support

Introduction to the SPFx Toolset

New Nouns for a New World

SharePoint Workbench

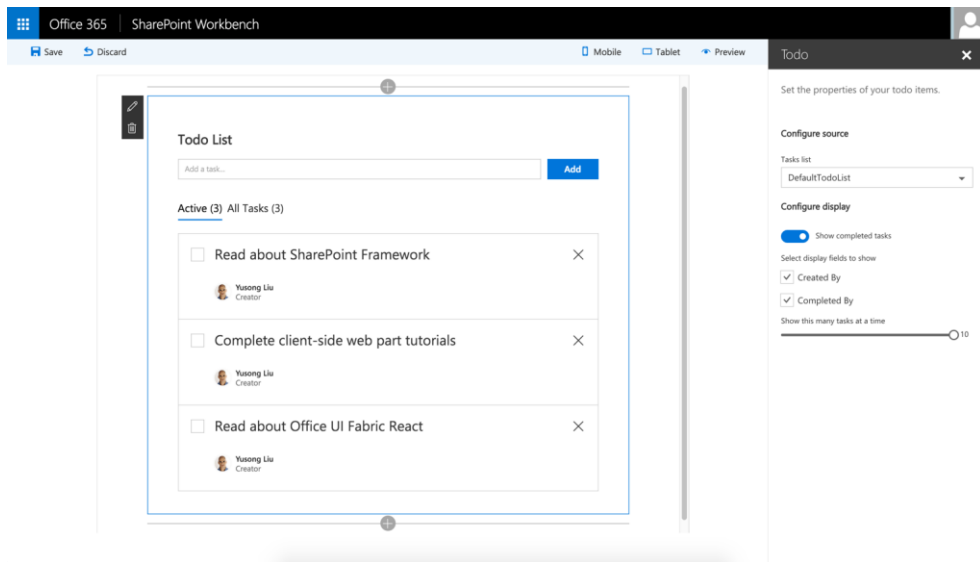
Developer tool to debug web parts

Local development experience

Test your changes locally

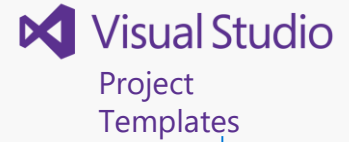
SharePoint Framework available offline

Available in SharePoint Online as well



Server side tool comparison

IIS Express



<https://dev.office.com/sharepoint/docs/spfx/tools-and-libraries>

Using the Toolset



Install
SharePoint
Generator



Yeoman
SharePoint
web part

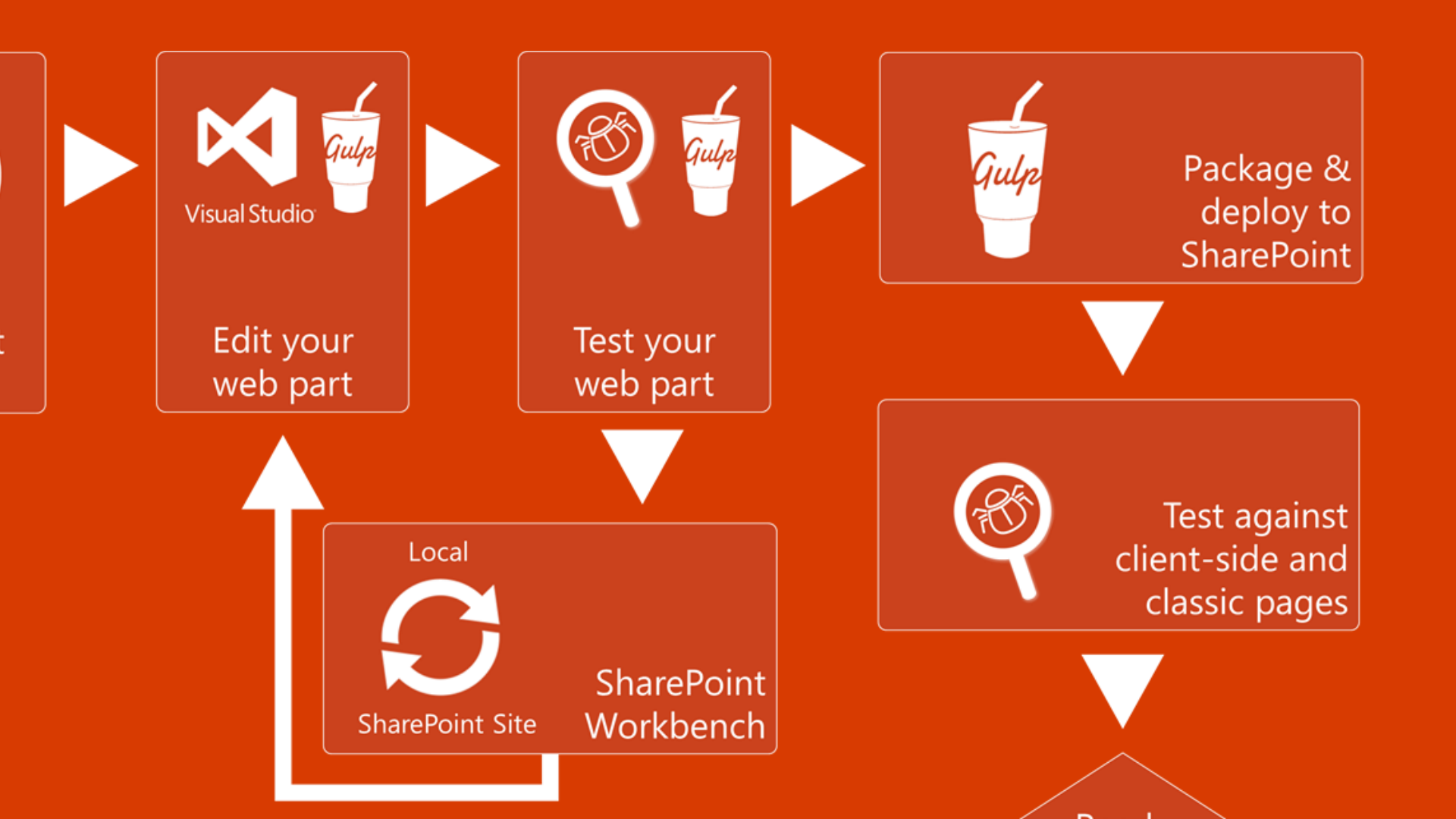


Visual Studio

Edit your
web part



Local



TypeScript
node JS™

Ready
to Ship?



Deploy assets
to CDN



Ship it!

TypeScript



Setting Up your Dev Environment

Next. Next. Finish. (Sorta)

Installing NodeJS LTS



- **Install NodeJS LTS**

If already installed, check version with:

- `node -v`

(rerun installer if you don't have latest version, or use the Node Version Manager)

- If using a Mac, use homebrew to install and manage

- **Ensure NPM is up to date**

- `npm install -g npm`

- **Get Node**

- <https://nodejs.org/en/>

- **Homebrew (Macs Only)**

- <http://brew.sh/>

Installing Yeoman and Gulp



- Install Yeoman and Gulp

- `npm install -g yo gulp .`

- Install Yeoman SharePoint Generator

- `npm install -g @microsoft/generator-sharepoint .`

- Yeoman Site

- <http://yeoman.io/>

- Gulp Site

- <http://gulpjs.com/>

Installing VS Code



- **Download and Install VS Code**

- You can also use

 - Atom

 - Webstorm

- Get VS Code

 - <https://code.visualstudio.com>

Creating Your First Project

- Create Directory

- `md hello-chicago.`

- Change Directory

- `cd hello-chicago.`

- Install Dev Certificate

- `gulp trust-dev-cert.`

- Scaffold Project

- `yo @Microsoft/sharepoint.`

- Run Solution

- `gulp serve.`

Demo

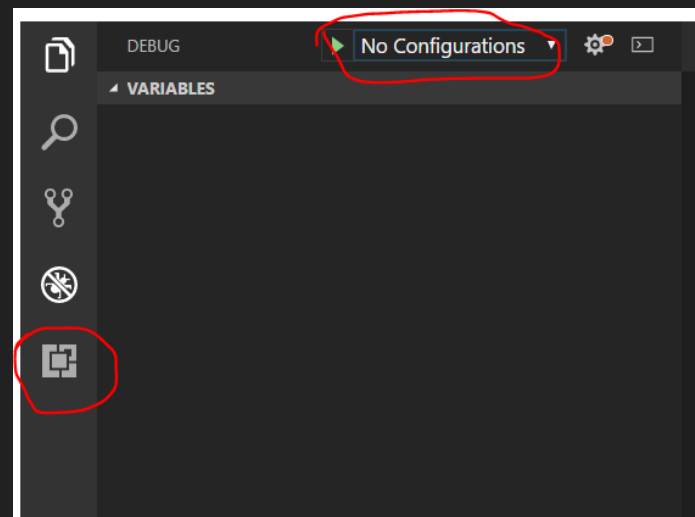
Hello World.

Development Tips

Tips for coding.

Debugging with Chrome

- Install Google Chrome
- Install 'Debugger for Chrome' extension in VS Code and reload
- Create New Debugging Configuration(s)
 - Local Workbench
 - Hosted Workbench
- Serve the solution without browser
 - `gulp serve --nobrowser.`
- Debug with F5 (or Debug -> Start Debugging)



Demo

Tips and Tricks.

Intellisense with Config Files

- Settings.json
 - Json.Schema

```
// Place your settings in this file to overwrite default and user settings.
{
  "json.schemas": [
    {
      "fileMatch": [
        "/config/config.json"
      ],
      "url": "./node_modules/@microsoft/sp-build-web/lib/schemas/config.schema.json"
    },
    {
      "fileMatch": [
        "/config/copy-assets.json"
      ],
      "url": "./node_modules/@microsoft/sp-build-core-tasks/lib/copyAssets/copy-assets.schema."
    },
    {
      "fileMatch": [
        "/config/deploy-azure-storage.json"
      ],
    }
  ]
}
```

Demo

Tips and Tricks.

Referencing Assets within Solution

- Ensuring assets are referenced correctly after webpack:
 - `require('set-webpack-public-path!');`
- Referencing assets within the solution:
 - ``

Demo

Tips and Tricks.

Reading SharePoint Data

- JSOM
- REST
- SPHttpClient
- PnP JS Core

SharePoint development options

	JSOM	Raw REST	SPHttpClient	PnP JS Core
Characteristics	<ul style="list-style-type: none">• Introduced in SP2010• Mimics CSOM• Works with delegates• Does not support promises• Not being invested in anymore	<ul style="list-style-type: none">• The same across technology stacks• Easy for GET requests• Complex for non-GET requests• Evergreen	<ul style="list-style-type: none">• SharePoint Framework-specific• Easy for all kinds of requests• For non Get operations, you'll still need to create JSON• Evergreen	<ul style="list-style-type: none">• Fluent API• Works natively with Promises• Open-source community-driven initiative
Future-proof	!	✓	✓	✓
Coverage	Fair	Excellent	Excellent	Fair
Ease of use	Hard	Moderate	Moderate+	Easy

Demo

Tips and Tricks.

Creating Declarative Lists and Content Types

- What can you create?
 - Fields / Site Columns
 - Content Types
 - List Instances
 - List Instances with Custom Schema

Demo

Tips and Tricks.

Additional Resources

- Overview of the SharePoint Framework
 - <https://dev.office.com/sharepoint/docs/spfx/sharepoint-framework-overview>
- SharePoint Framework Roadmap
 - <https://dev.office.com/sharepoint/docs/spfx/roadmap>
- Office Dev Patterns and Practices (PnP)
 - <https://dev.office.com/patterns-and-practices>
- SharePoint Framework Code Samples (PnP)
 - <https://dev.office.com/code-samples#?filters=sharepoint%20framework%20app>
- SharePoint Framework Reference
 - <https://dev.office.com/sharepoint/reference/spfx/sharepoint-framework-reference-overview>
- PnP JS Core
 - <https://github.com/SharePoint/PnP-JS-Core>

Questions



**Thank you
for attending!**

Feel free to stop by afterwards for more questions.

Sponsors



SPR CONSULTING

DeVry University 



Acumatica
THE CLOUD ERP



CCS Technology
BRING IT ON.

avtex 
the point of interaction™

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Concurrency 



Micro  excel®
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It's all in the way we listen.®

NINTEX 

 Valo