Electronic Forms and Alternative SharePoint App Approaches

SPS Toronto
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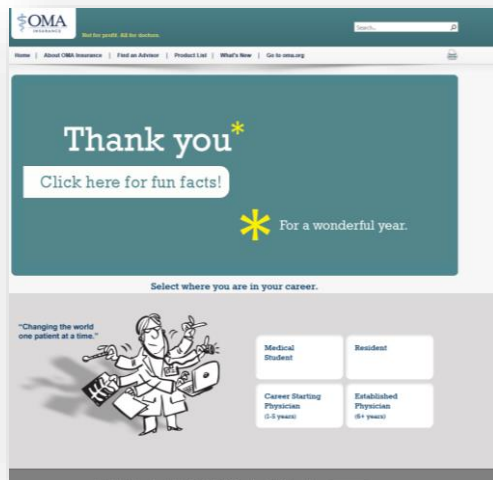- Twitter @carsonpeter
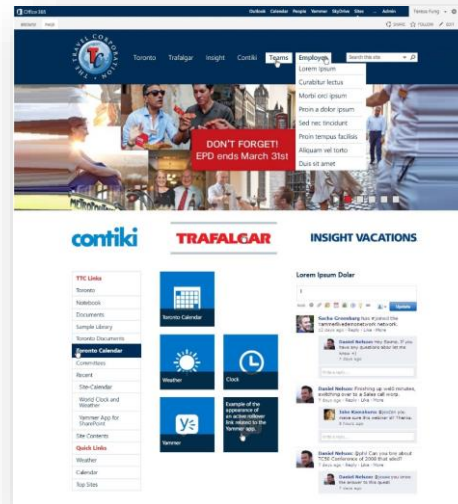- President Toronto SharePoint User Group

Agenda

- Introductions
- Overview of Envision IT
- SharePoint Development Background
- Alternative App Models
- Client-Side Code Only
- Visual Studio WebAPI Projects
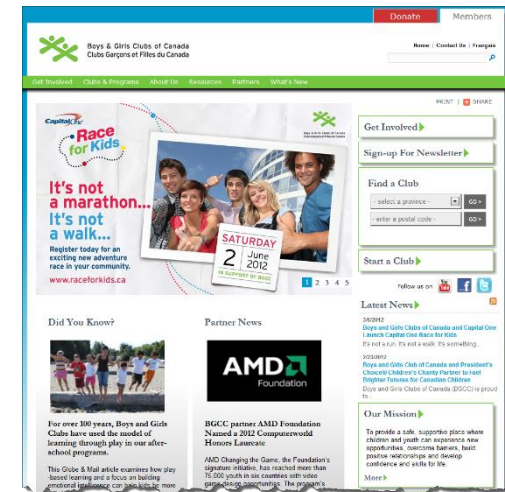- Questions / Next Steps

Envision IT

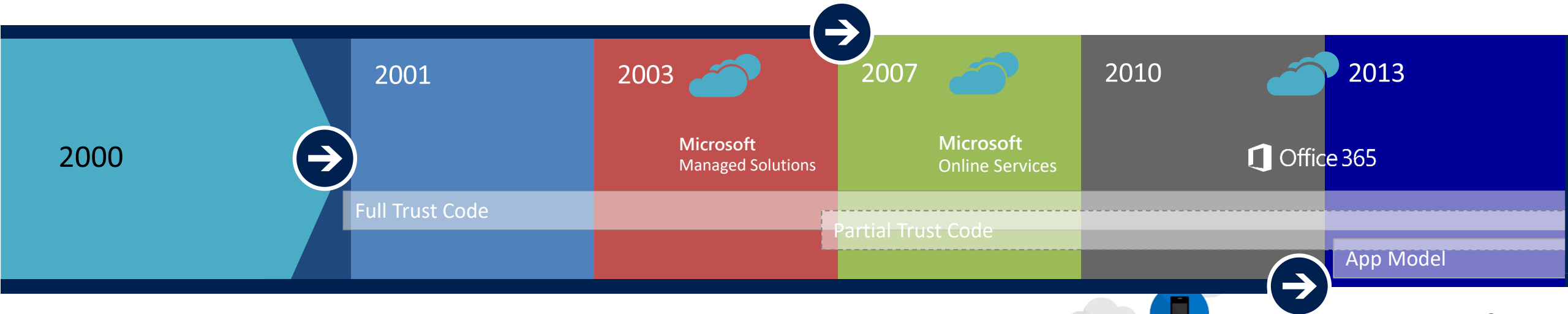**Public Websites**

Intranets / Staff Portals

Extranets / Member Portals

SharePoint   Office 365   Microsoft Azure

SharePoint Development Background

Accelerating web development

2000	2001	2003	2007	2010	2013
		Microsoft Managed Solutions	**Microsoft** Online Services	Office 365	

Full Trust Code

Partial Trust Code

App Model

72%

of customers are leveraging cloud for their applications—from pilots to production apps[1]

Accelerating web development - SPFx

2016	Custom Presentation	UX Extensions	Data Access	Eventing	Solutions Host
	Client Side and Open Source	Client Side and Remotely Hosted	REST and Cleaner Contracts	Web Hooks and Web Sockets	Cloud SaaS and Client Side Logic

Customer

Consistent Platform

Microsoft   Patterns

Enterprise-Grade

Modern Toolchain

User Focused

Alternative App Models

Checklist for an Ideal App Model

- No iFrames
- No wildcard DNS domains
- No code on the SharePoint Server
- Great user experience
- Standard development model
- Ability to run with elevated permissions
- Integrate with more than just SharePoint
- Development can be done locally

Suggested Forms Options

- Microsoft Forms and Forms Pro

- Power Apps forms and apps

- Adaptive cards with input forms

- An SPFx and React form that dynamically generates its fields based on a SharePoint content type

- An interactive, responsive HTML form built with Bootstrap and standard HTML 5 that posts to a Flow workflow

Microsoft Flow
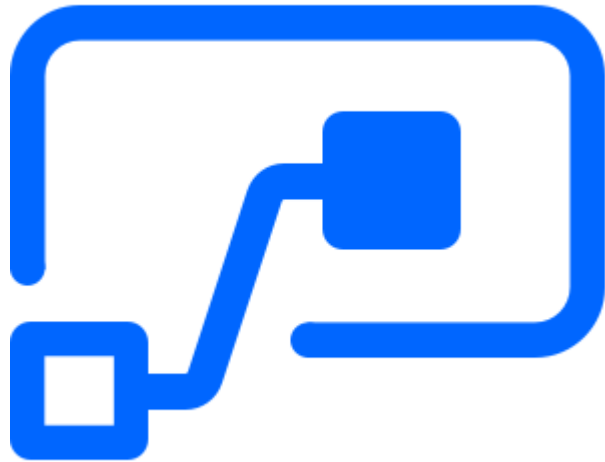
- Create automated workflows between your favorite apps and services to get notifications, synchronize files, collect data, and more
- Supports both Microsoft and third party apps
- Custom connectors can connect to any system
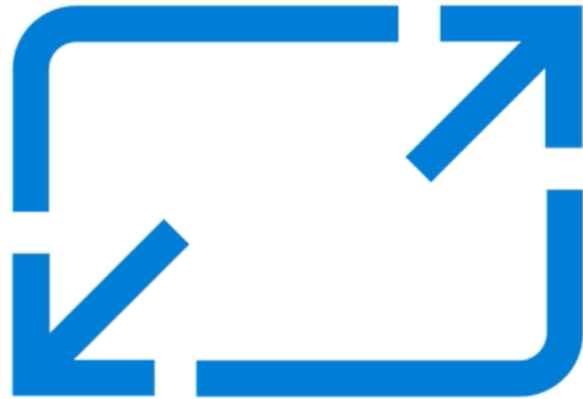
Microsoft Forms

- Easily create surveys, quizzes, and polls
- Free to use
- Forms Pro premium version adds additional features

PowerApps

- Build apps for mobile, desktop, or responsive web
- Hundreds of connectors that can be extended with custom connectors

Adaptive Cards

- https://adaptivecards.io/
- Conversation Bots
- Microsoft Teams
- Outlook Actionable Messages

The SharePoint Framework

Why did we need SPFx?
New Tech? Another thing?

- We saw what developers where doing in SharePoint

- We knew we needed to refresh the UI

- Responsive Design is now expected
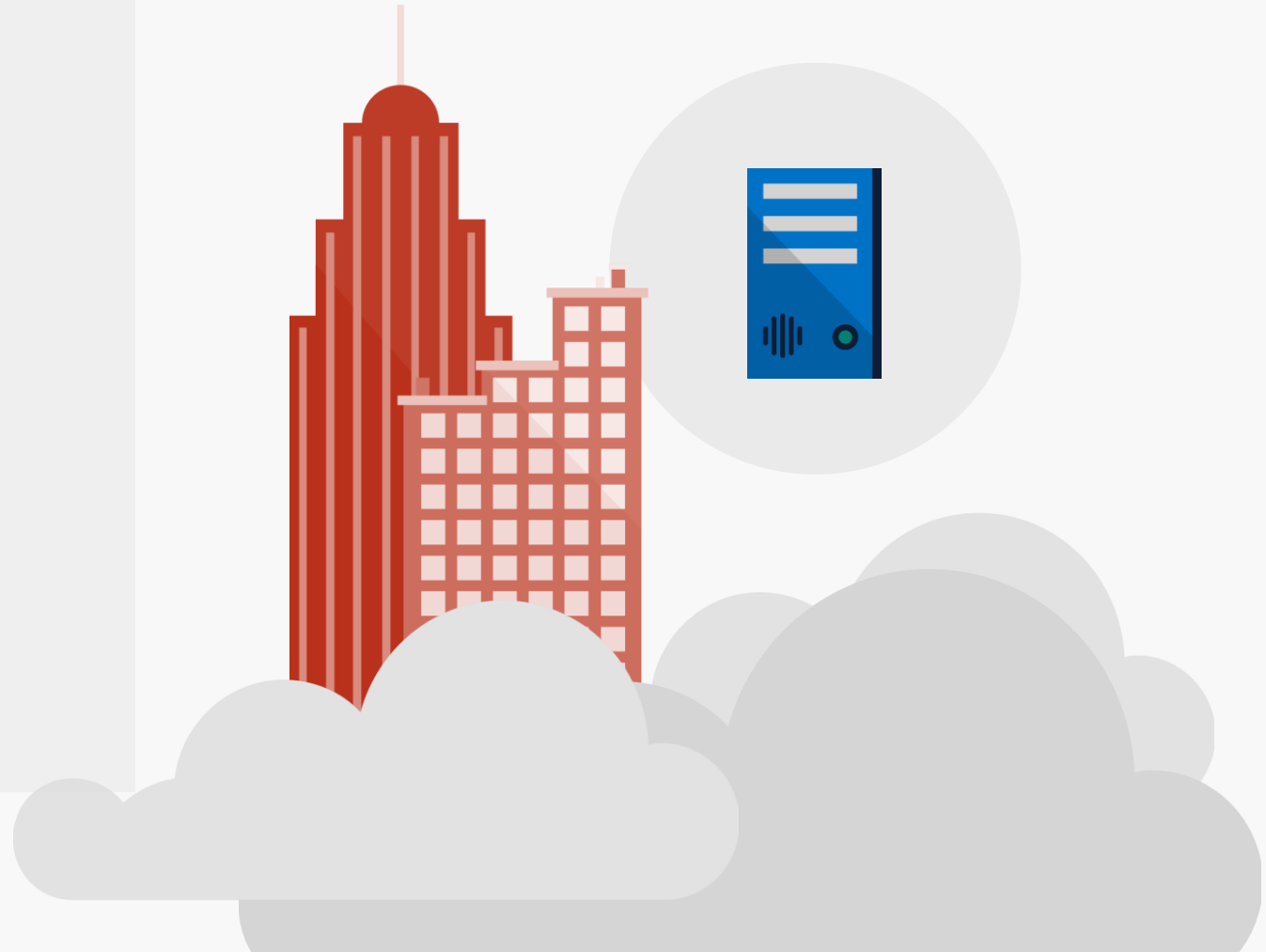
- iFrame ... love it or hate it
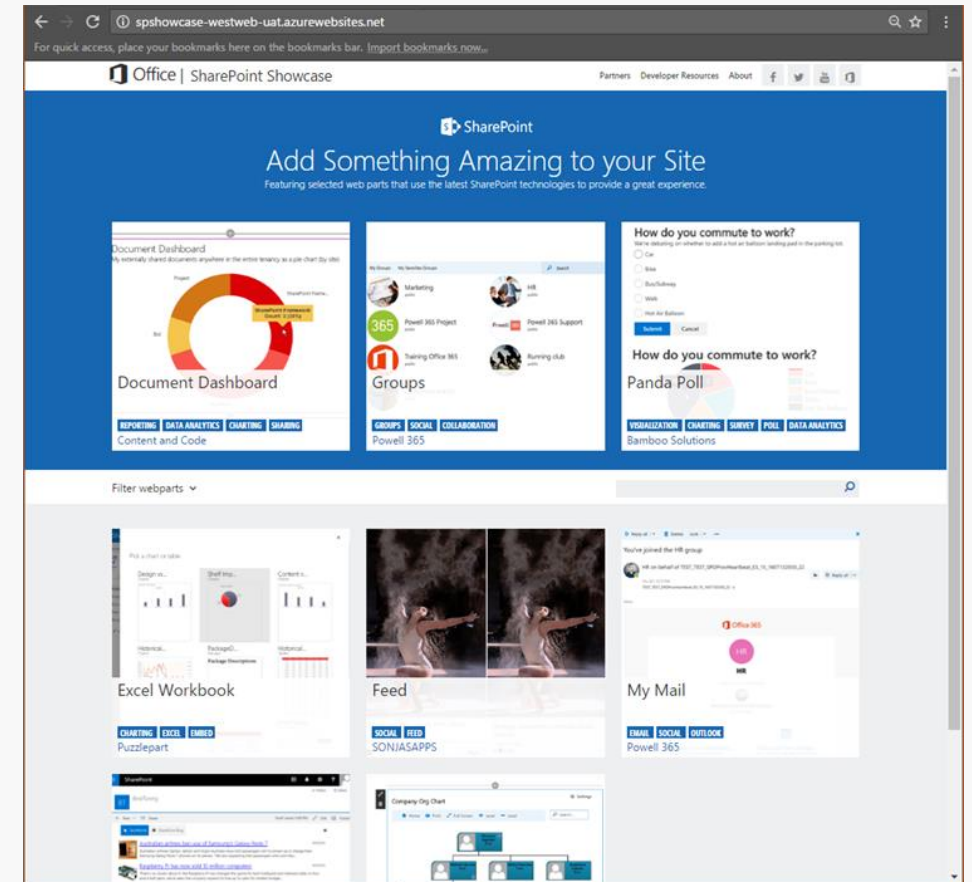
SharePoint extensibility principles
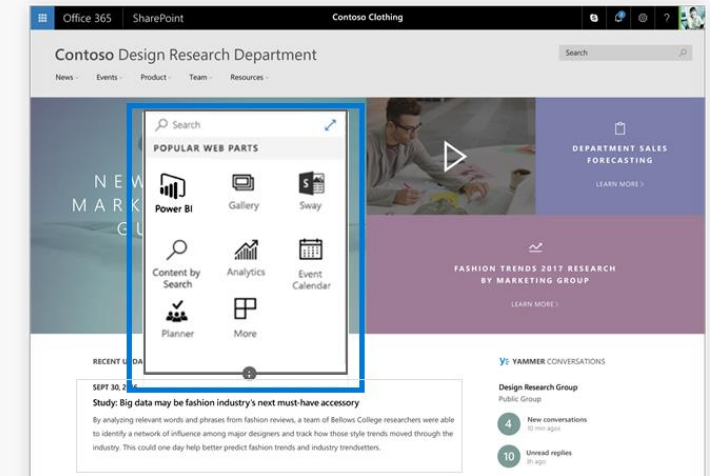
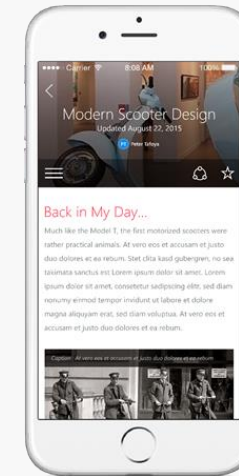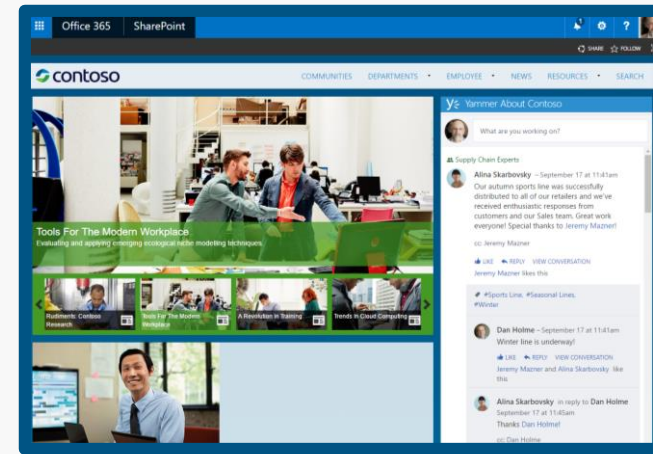Build long-term, value-added services

Principles

- Modern client-side development

- Lightweight web and mobile

- Powers our own experiences

- Backward compatible

- Supports open source tools
  and JavaScript web frameworks

Scenarios
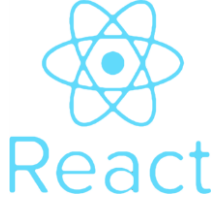
- Building custom Web Parts
  - Building vertical focused applications
  - Integrating with external systems

- Enhancing the out of the box experience
  - Branding custom portals
  - Building custom Intranet Portals

Supporting Frameworks

	Node.js® is a JavaScript runtime	https://nodejs.org
	Node.js' package ecosystem, npm, is the largest ecosystem of open source libraries in the world	https://www.npmjs.com/
	The web's scaffolding tool for modern webapps Used to generate webpart projects	http://yeoman.io/
	JavaScript task runner to automate build tasks	http://gulpjs.com/
	Typed superset of JavaScript that compiles to plain JavaScript. Any browser. Any host. Any OS. Open source.	https://www.typescriptlang.org/

Additional Frameworks

	Open source JavaScript library created by Facebook for building user interfaces	https://facebook.github.io/react/
	Bootstrap is the most popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web	http://getbootstrap.com/
	Less is a CSS pre-processor. It extends the CSS language, adding features to make it more maintainable, themeable and extendable	http://lesscss.org/
	Write less, do more. jQuery is a fast, small, and feature-rich JavaScript library	https://jquery.com/
	Handlebars is a templating engine to convert datasets into HTML	http://handlebarsjs.com/

Additional Frameworks

Knockout.	Simplified dynamic JavaScript UIs with the Model-View-View Model (MVVM)	http://knockoutjs.com/
ANGULARJS by Google	Single page apps built with the Model-View-Controller (MVC)	https://angularjs.org/
Visual Studio	Visual Studio WebAPIs	http://www.asp.net/web-api
swagger	Swagger is to REST as WSDL is to SOAP Define your API in Swagger	http://swagger.io/
	Adds Swagger to a .NET WebAPI project	https://www.nuget.org/packages/Swashbuckle
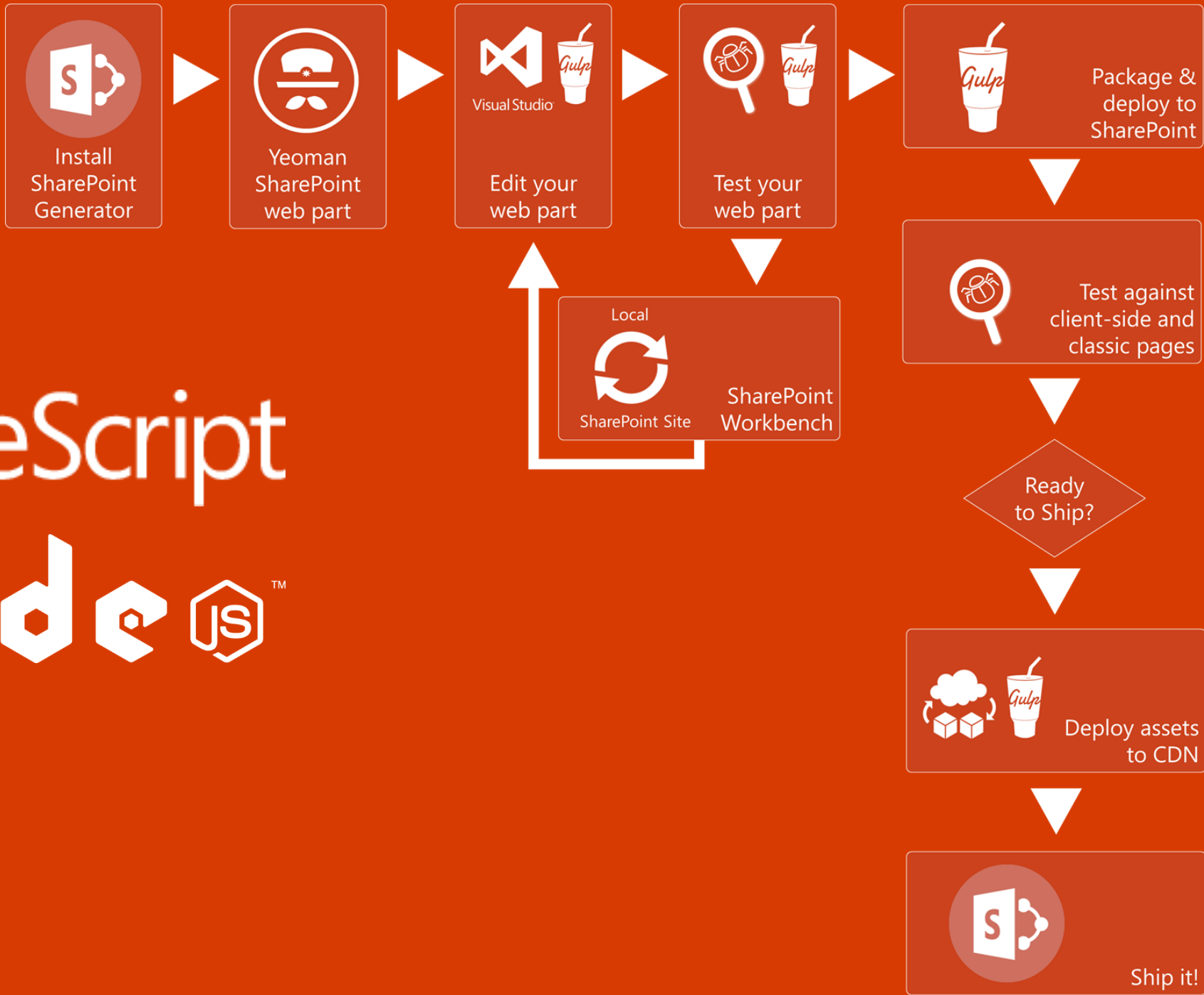
Getting Started with SharePoint Framework

- https://github.com/SharePoint/sp-dev-docs/wiki

- Setup your Office 365 Developer Tenant

- Setup your Machine

- Go build your first web part

- https://dev.office.com/sharepoint/docs/spfx/enterprise-guidance

Pentecostal Assembly of Canada Pension Portal

- SharePoint 2013 portal for current and retired staff
- Address and Banking Information update forms
  - Write to SharePoint lists
  - List columns define the form fields
  - Workflow used to secure submissions
  - Built with jQuery and SharePoint REST APIs
- Pension Calculator
  - Calculates annual benefits payable at retirement
  - Knockout model uses values entered by user

PAOC
PensionFund Fonds deretraite
APDC

Home   About the Pension Plan ▾   Pension Member ▾   Pension Employer ▾

Home / Pension Member / Address Update

Pension Member

Annual Benefits Statement

Contribution History

T4As

Address Update

Banking Information Update

Retirement Options

Pension Calculator

Address Update

Fields marked with an asterisk (*) are required. If a required field is not applicable to you, enter "n/a".

Full Name *	Peter Carson
Employee ID *	pcclimited\pcarson
Effective Date *	MM/DD/YYYY
Address 1 *	
Address 2	
City *	
Province *	
Postal Code *	
Country *	
Email Address	
Telephone Number	

Submit

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PAOC
PensionFund
APDC
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Home   About the Pension Plan ▾   Pension Member ▾   Pension Employer ▾

Home / Pension Member / Pension Calculator

Pension Member

Annual Benefits Statement

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Pension Calculator

Pension Calculator

Annual Benefit Statement Contributions

Please refer to the Annual Accrued Pension to Date section on your most recent Annual Benefit Statement

Pension from Contributions

Pension from Enhancements (All Years)

Start Contribution Year   2015

Member Contributions per Year

Employer Contributions per Year

Projected Annual Pension

Payable at Age   65

Number of Years to Age

Month of birth   1 ▾

Total Projected Annual Benefit Payable at age 65:
Monthly Pension:

Note: For pension calculations below age 65, annual benefit payable is reduced by 0.5% for every month prior to age 65.

The Pension Fund (1969) of The Pentecostal Assemblies of Canada

Contact Information   Privacy Statement   Mission Statement

envision IT
Leaders in SharePoint Solutions

ExtranetUserManager

Run with Elevated Permissions?

- Do users have rights to do everything they need to do in SharePoint?
- Read, add, and edit rights to SharePoint
- Column level security
- Custom business rules
- Not all the code should run in JavaScript
- Need somewhere else
- Not allowed on the SharePoint server

Visual Studio WebAPI Projects

- Part of ASP.NET 4.5
- Full .NET functionality – typically C#
- Can deploy on premises or in Azure
- Can cheat and deploy to SharePoint WFEs
- Makes authentication easier
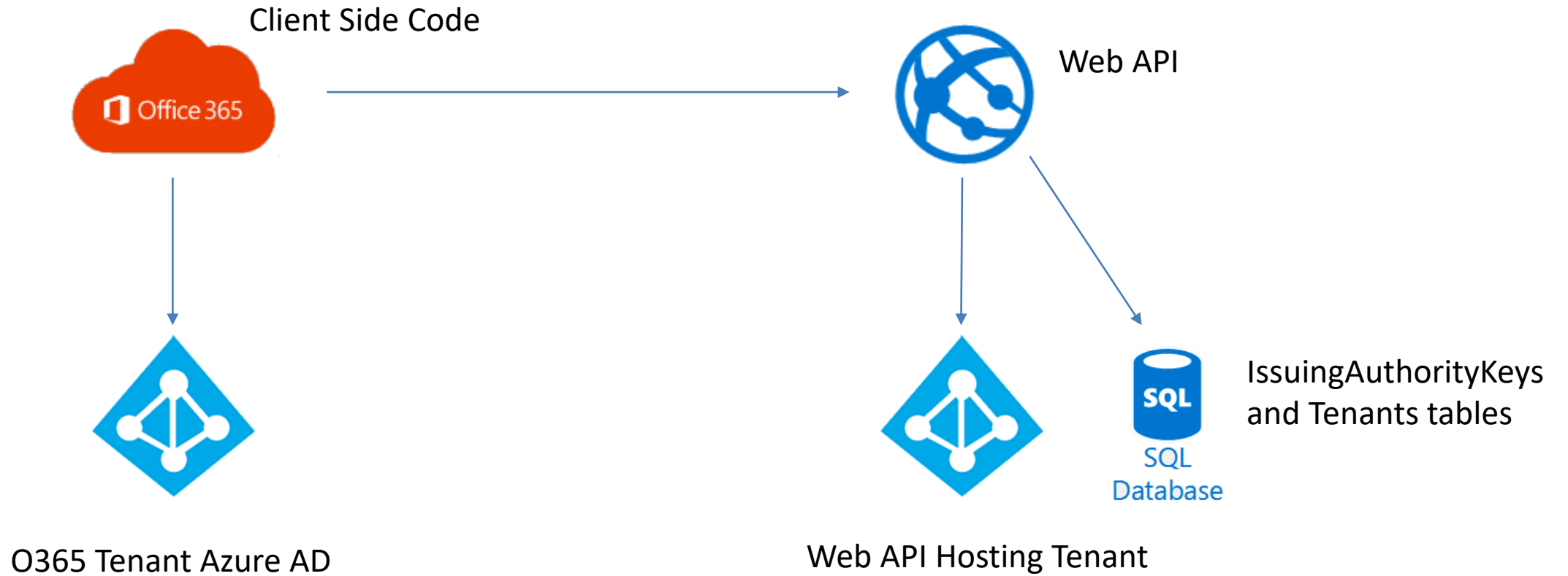- Some work to move to another environment

WebAPI Authentication

- **Can be anonymous**
  - Very useful for anonymous form submits
  - Simplifies permissions in SharePoint
- **Leverage SharePoint or Windows authentication**
  - Deploy as an IIS application under SharePoint, or on an internal IIS server
  - Can access the user's SharePoint or Windows identity
  - Use that to access SharePoint, or can still run with elevated permissions
- **Leverage Windows authentication**
  - Deploy as an IIS application on an internal IIS server
  - Can access the user's Windows identity
- **Azure Active Directory**
  - Ideal for Office 365
  - Register your API as an Azure App
  - Call from Office 365 and have access to the user identity

Creating a new Web API project

- Leveraging Azure AD for authentication
- Need the Web API and a local form for development
- Swagger and Swashbuckler for documenting the API
- Setup Organizational Authentication with Azure AD
- Configure CORS for cross-site scripting

Azure Configuration

Client Side Code

Web API

IssuingAuthorityKeys
and Tenants tables

SQL
Database

O365 Tenant Azure AD

Web API Hosting Tenant

Envision IT Leave Request

- Vacation, sick days, bereavement, jury duty, etc.
- Tracks the allocation and accrual period
- Leverages AD Manager property
- Enforces security
  - Users don't have direct access to SharePoint lists
  - Permissions are managed in the REST API
  - Users can see their requests
  - Managers can see their reports
  - HR Administrators can see all requests
- Supports Office 365

County of Simcoe

- Derived from Envision IT Leave Request
- On premises SharePoint 2013
- Integrated with SAP HRIS
- REST API
  - Allocations from SAP
  - Manager reporting structure
  - Writing requests to SharePoint
  - Pushing approved requests back into SAP
- Nintex workflow
  - Drives the approval process

SharePoint Patterns & Practices Links

- http://dev.office.com/patterns-and-practices
- https://github.com/sharepoint
- http://aka.ms/SPPnP-Videos
- http://aka.ms/SPPnP-Docs

Upcoming Events

Monday December 2, 2019
Microsoft Meadowvale

http://bootcamp.tspug.com

Extranet User Manager Webinar – Learn How to Enhance
Security of Your Office 365 Extranet

Tuesday December 3, 2019
12 pm – 1 pm EST

Eum.co/events

SharePoint Fest Chicago 2019
December 9 - 13, 2019

https://sharepointfest.com/Chicago/
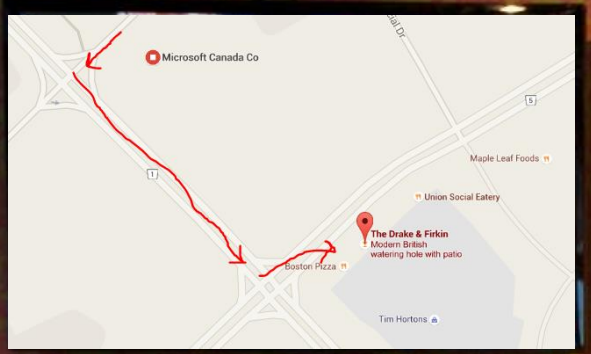
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Share your feedback

http://bit.ly/spsto19sessioneval

http://bit.ly/spsto19eventeval

SharePint

The Drake & Firkin
6982 Financial Dr, Mississauga, ON L5N 8J4

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Toronto Community

Toronto SharePoint
(meetup.com/torontospug/)

Toronto SharePoint Business
(meetup.com/tspbug/)

Metro Toronto .NET
(meetup.com/metrotorontoug/)

North Toronto Cloud & DevOps
(meetup.com/NorthTorontoUG/)

Toronto Nintex User Group
(meetup.com/TorontoNintexUG/)

IT Pro Toronto
(meetup.com/ITProToronto/)

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Toronto Power Platform
(meetup.com/Toronto_Power_Platform_UG/)

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Thank you Toronto community!

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A learning path is a series of connected learning modules that includes sessions, hands-on experiences, technical workshops, certifications, and expert connections. Each learning path works together to build upon what you've learned to provide a comprehensive set of skills to help you reach your goals.

01

Azure fundamentals
Understand cloud concepts and core services including storage, pricing, compute, messaging, networking, data, and identity and cloud security.

02

Building applications for the cloud
Learn how to build your applications and APIs with cloud services in mind, creating resilient, fault-tolerant, and scalable global services.

03

Meeting organizational compliance requirements
Leverage the intelligent and integrated Microsoft solutions to help your organization achieve its compliance goals.

04

Deploying and managing Windows and Office in your enterprise
Learn how to transition your organization to the latest and most productive desktop environment—and simplify the process of keeping your devices secure and up to date.

05

Developer's guide to AI
We'll introduce cognitive services, then graduate into machine learning for developers, finally deploying a machine learning model into production to be consumed by simple web services.

06

Developing integrations and workflows for your productivity applications
Integrate critical business processes into experiences across Microsoft 365 to transform productivity in your organization.

07

Dynamics 365 fundamentals
Learn how to increase your organization's productivity across business groups, enabling efficiencies and business processes that pave the way for innovation and personalized experiences.

08

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Inspire everyone to build apps without risk and simplify app development. Hear how to deploy quickly, add value, and integrate all your data with just a few clicks.

09

Governance and administration of your Power Platform solution
Tips to overcome common blockers, security questions, and monitoring requirements. Hear about monitoring and supporting the Power Platform with strategies and best practices to help land low-code powered digital transformation.

10

IT administrator's guide to cloud management
Learn how to navigate the latest updates in IT admin experiences to effectively manage your organization's users, applications, and devices.

11

Journey to Microsoft Teams
 Build a collaborative workforce for your organization, bringing together everything in a shared workspace where you can chat, meet, share files, and integrate business applications.

12

Managing cloud operations
Learn how to define governance, security, and policies within Azure for your organization. Regulate and organize your Azure subscription to achieve compliance and set up guard rails for cost and regional structure.

13

Migrating data, applications, and API's to the cloud
Migrate and modernize workloads and live databases to the cloud without interruption. Take advantage of application auto scaling and built-in database threat protection. Use pipelines to build and deploy solutions faster and safer.

14

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Learn how to apply modern operations practices across the entire software development lifecycle. Explore the toolset Azure offers to support engineering processes and enable your team to iterate faster and more reliably.

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Cloud adoption starts with assessing your current environment and upgrading to Window Server 2019. This enables an entire hybrid ecosystem not previously available and simplifies migrating Window Server and SQL Server into Azure.

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Learn how to protect your organization's identities, data, applications, and devices across on-premises, cloud, and mobile—end-to-end—using the latest tools and guidance.