

Electronic Forms and Alternative SharePoint App Approaches

Peter Carson

March 15, 2017



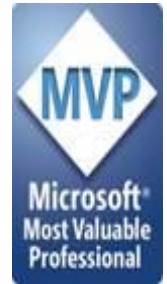
ExtranetUserManager



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- <http://blog.petercarson.ca>
- www.envisionit.com
- Twitter @carsonpeter
- VP Toronto SharePoint User Group

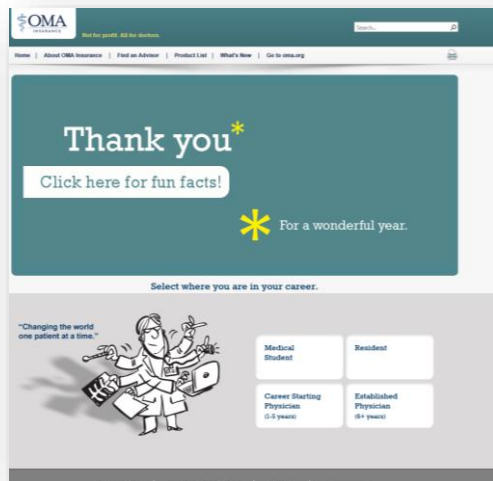


Agenda

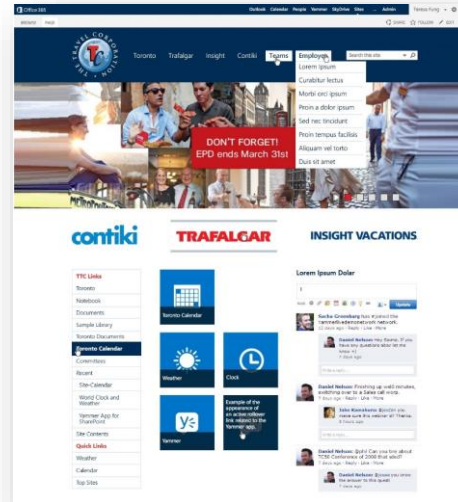
- Introductions
- Overview of Envision IT
- SharePoint Development Background
- Alternative App Models
- Client-Side Code Only
- Visual Studio WebAPI Projects
- Questions / Next Steps

Envision IT

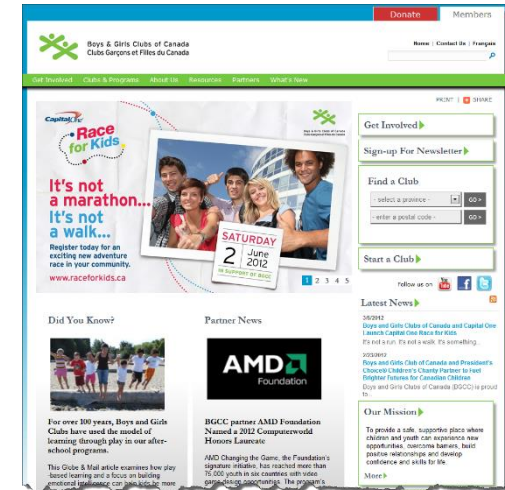
Public Websites



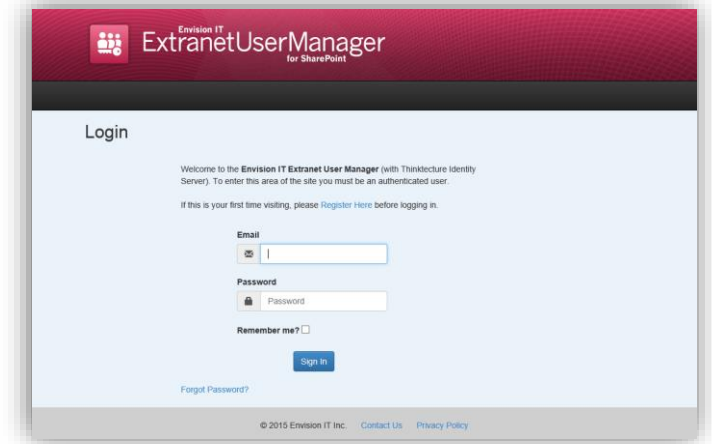
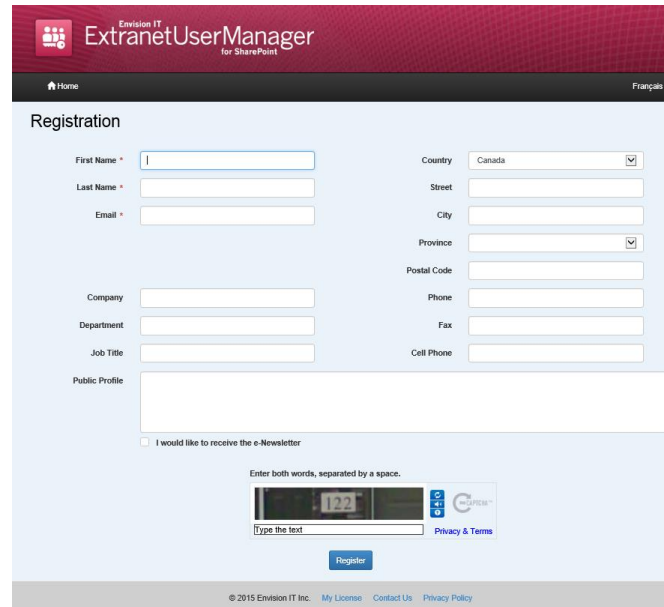
Intranets / Staff Portals



Extranets / Member Portals



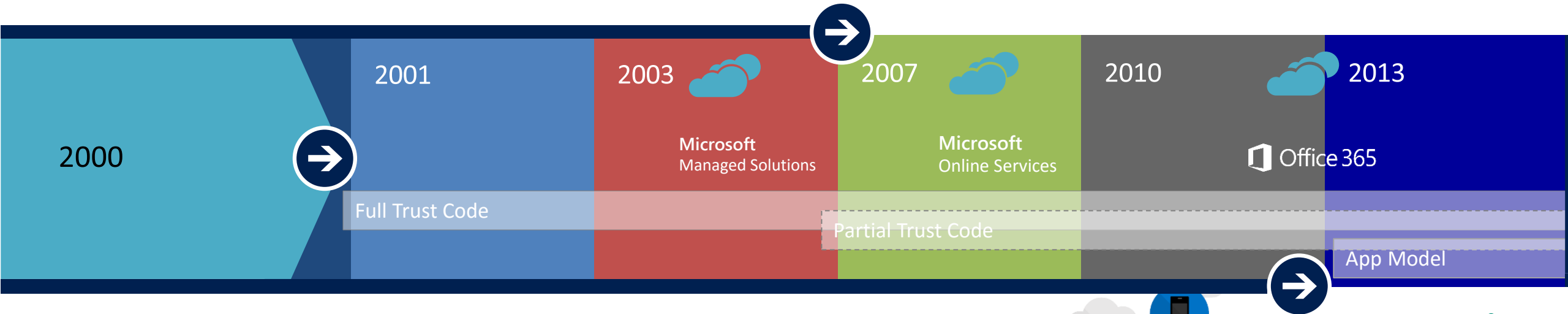
Extranet User Manager



- Easy delegation of user management to business
- Self-registration, approvals, forgotten password reset
- Simplified login for both internal and external users

SharePoint Development Background

Accelerating web development



Sources:

1. 451 Research, Hosting and Cloud Study, 2014



72%

of customers are leveraging cloud for their applications—from pilots to production apps¹

Accelerating web development

2016

Custom Presentation

Client Side and Open Source

UX Extensions

Client Side and Remotely Hosted

Data Access

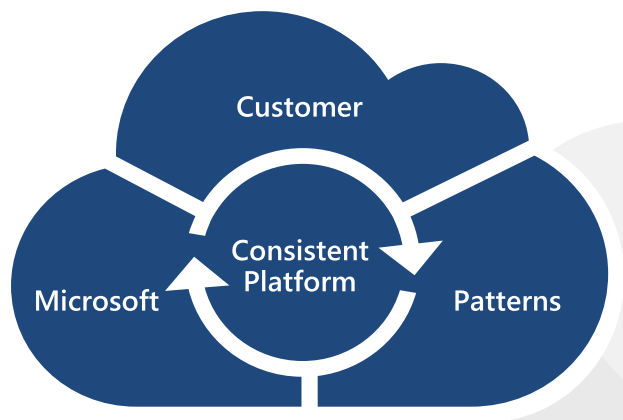
REST and Cleaner Contracts

Eventing

Web Hooks and Web Sockets

Solutions Host

Cloud SaaS and Client Side Logic



Enterprise-Grade



Modern Toolchain



User Focused

Full Trust Solutions

- Code runs on the SharePoint server
- Access to the full server API
- Code can run in with elevated permissions
- Not supported on Office 365
- Can raise challenges when upgrading SharePoint

Sandbox Solutions

- Code is uploaded into SharePoint
- Runs in a restricted sandbox
- Limited set of API methods available
- Supported on premises and in Office 365
- Deprecated by Microsoft and not recommended

Apps Model – SharePoint Hosted

- Client side code runs in the browser
- Uses CSOM or REST APIs to communicate with SharePoint
- User needs permissions for anything that is being done
 - No ability to run with elevated permissions

Apps Model – Provider Hosted

- Apps run in a separate server or IIS site from SharePoint
- Gets code off the SharePoint server
- Supports on premises and Office 365
- UI runs in an iFrame in the SharePoint window

App Model Challenges

- Setting up the App store is complicated
- Separate wildcard app domain is needed
- Certificates
- Complex to move between environments – dev, test, prod
- Apps intended to be added to sites by end users

Why are Apps Complex?

- Intended for functions that will be added multiple times to sites
- End users can discover Apps in the public store or company store
- Reality is most business apps don't require this
- Custom Apps typically need to exist in one or a few places

Alternative App Models

Checklist for an Ideal App Model

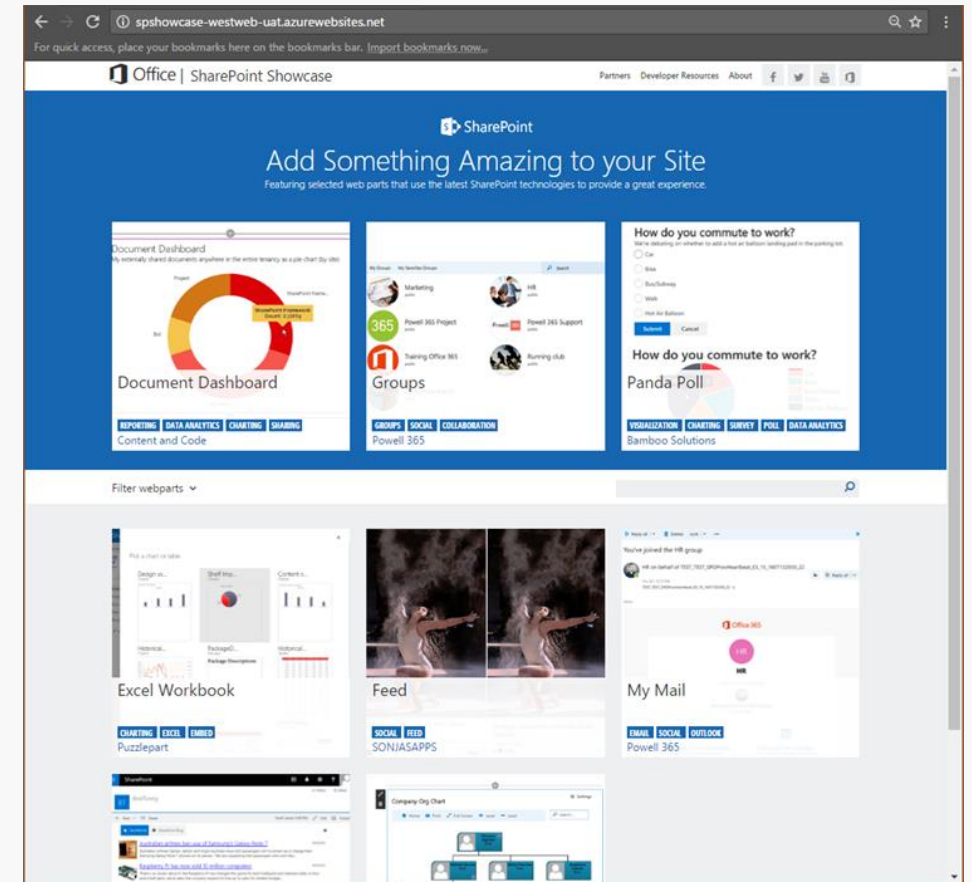
- No iFrames
- No wildcard DNS domains
- No code on the SharePoint Server
- Great user experience
- Standard development model
- Ability to run with elevated permissions
- Integrate with more than just SharePoint
- Development can be done locally

The SharePoint Framework

Why did we need SPFx?

New Tech? Another thing?

- We saw what developers were doing in SharePoint
- We knew we needed to refresh the UI
- Responsive Design is now expected
- iFrame ... love it or hate it

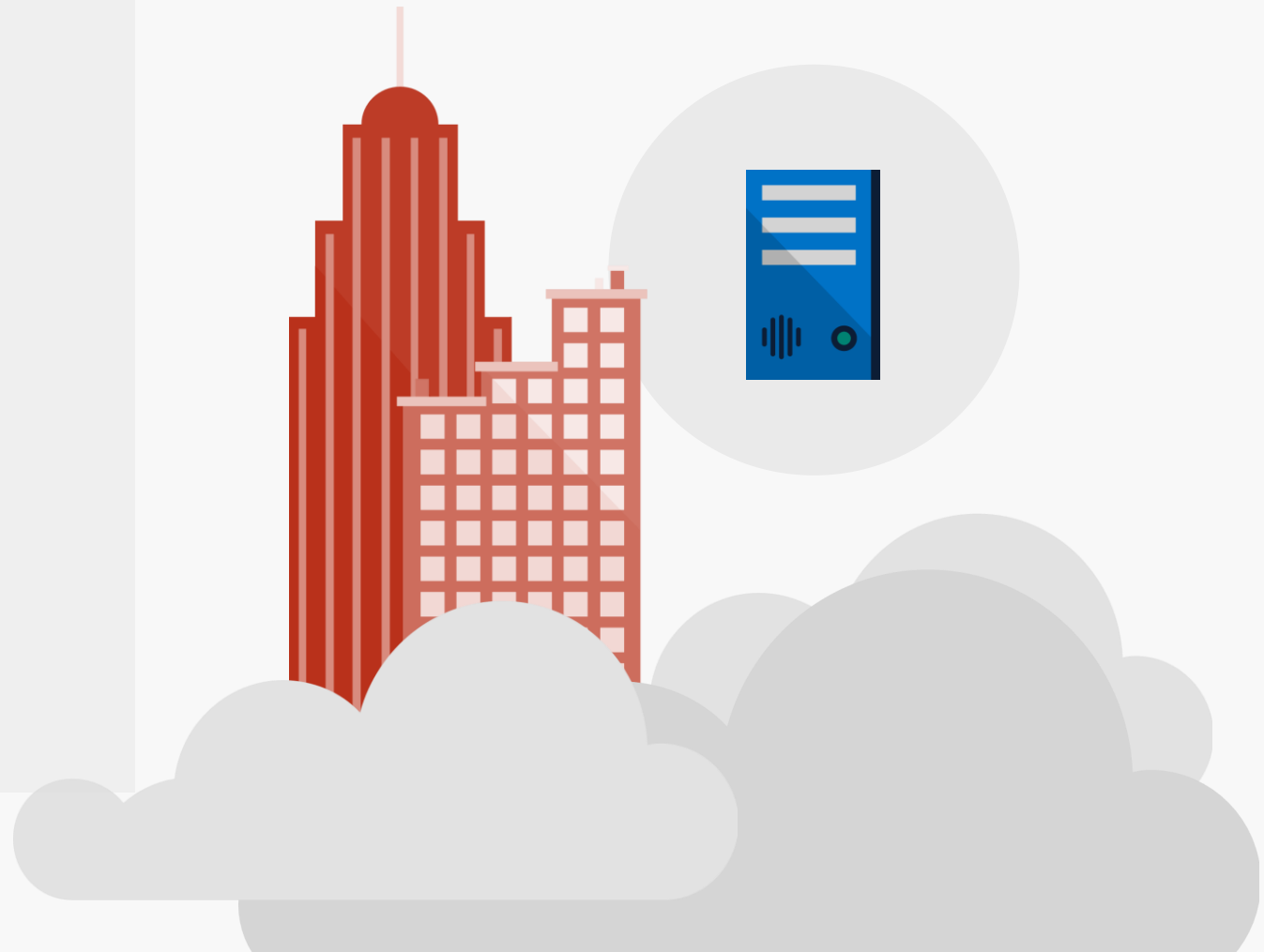


SharePoint extensibility principles

Build long-term, value-added services

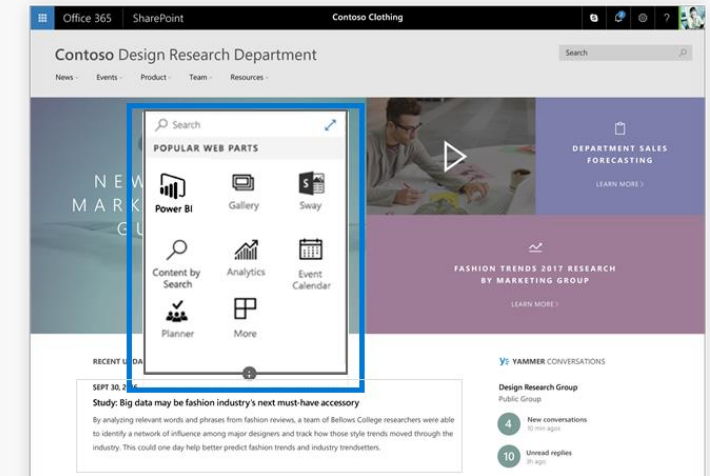
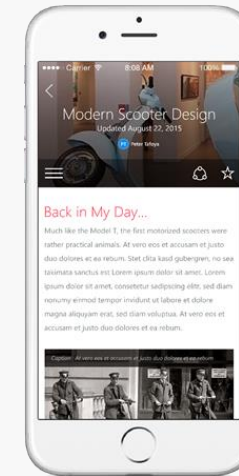
Principles

- 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

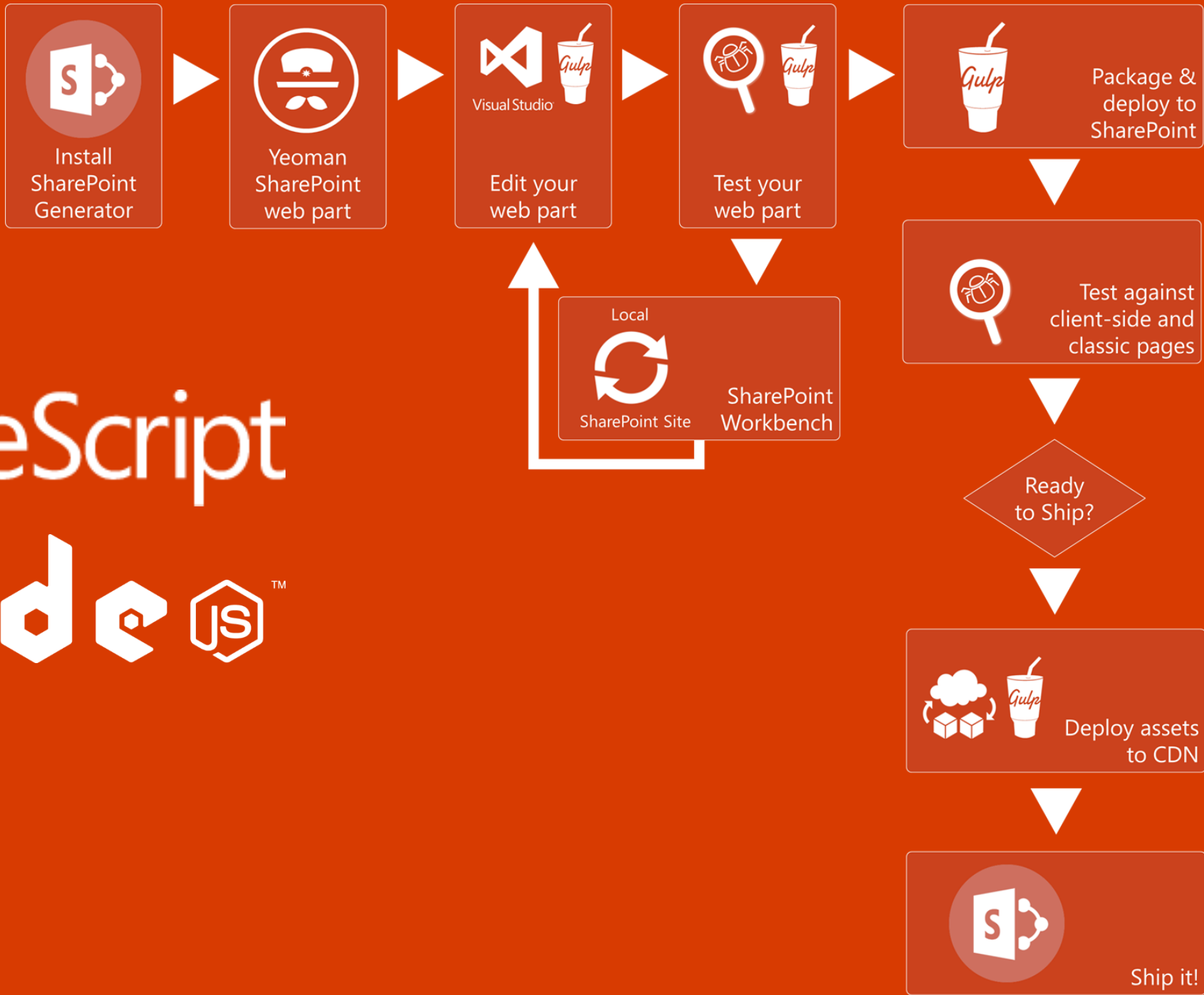
	Node.js® is a JavaScript runtime	https://nodejs.org
	Node.js' package ecosystem, npm, is the largest ecosystem of open source libraries in the world	https://www.npmjs.com/
 YEOMAN	The web's scaffolding tool for modern webapps Used to generate webpart projects	http://yeoman.io/
	JavaScript task runner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

Additional Frameworks

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

Additional Frameworks

	Simplified dynamic JavaScript UIs with the Model-View-View Model (MVVM)	http://knockoutjs.com/
	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 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



TypeScript

node JS™

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](#)

SharePoint Framework Current Status

- Available in First Release Office 365 tenants today
- General Availability has not been announced yet, but expected this year (early 2017 hopefully)
- Committed to releasing to SharePoint 2016 on premises in a Feature Pack after GA on Office 365 is complete

- If you're not ready to start using it yet, you should still build in the same model to future proof

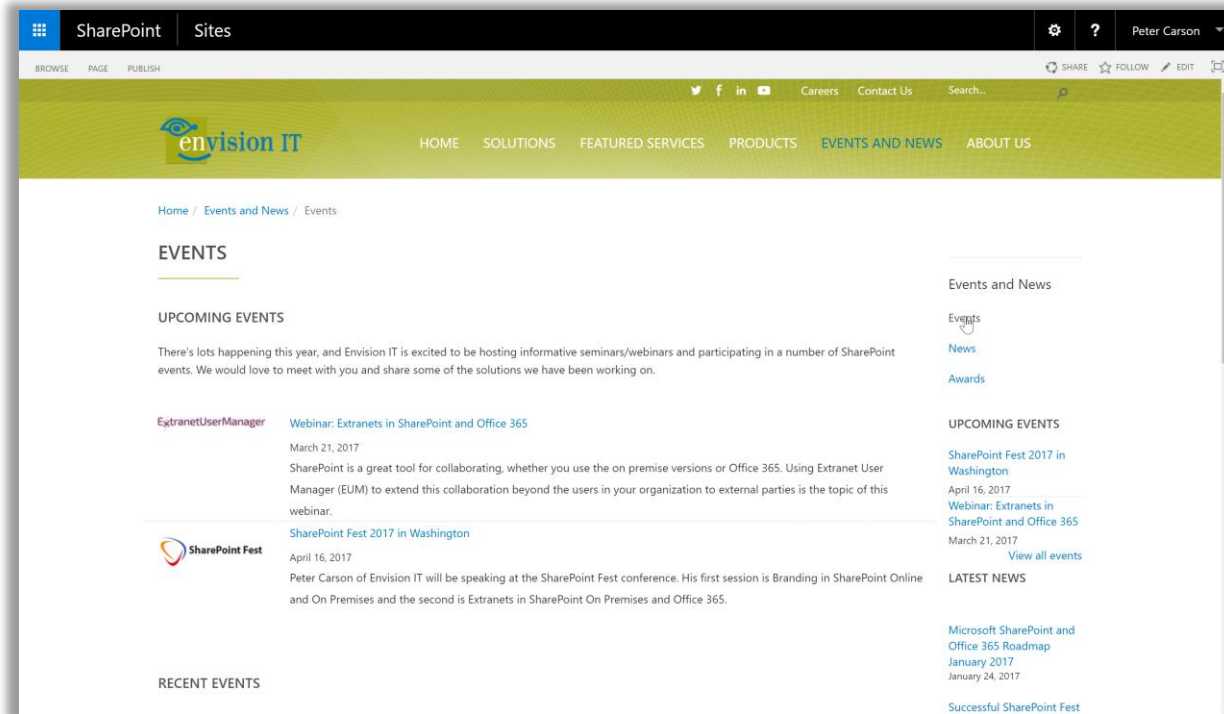
Client-Side Code Only

- Presentation of read-only data
 - Catalog publishing
 - Visualizations
 - Customized user experience
- Simple forms
 - No business rules that are not also enforced by the underlying SharePoint lists and libraries

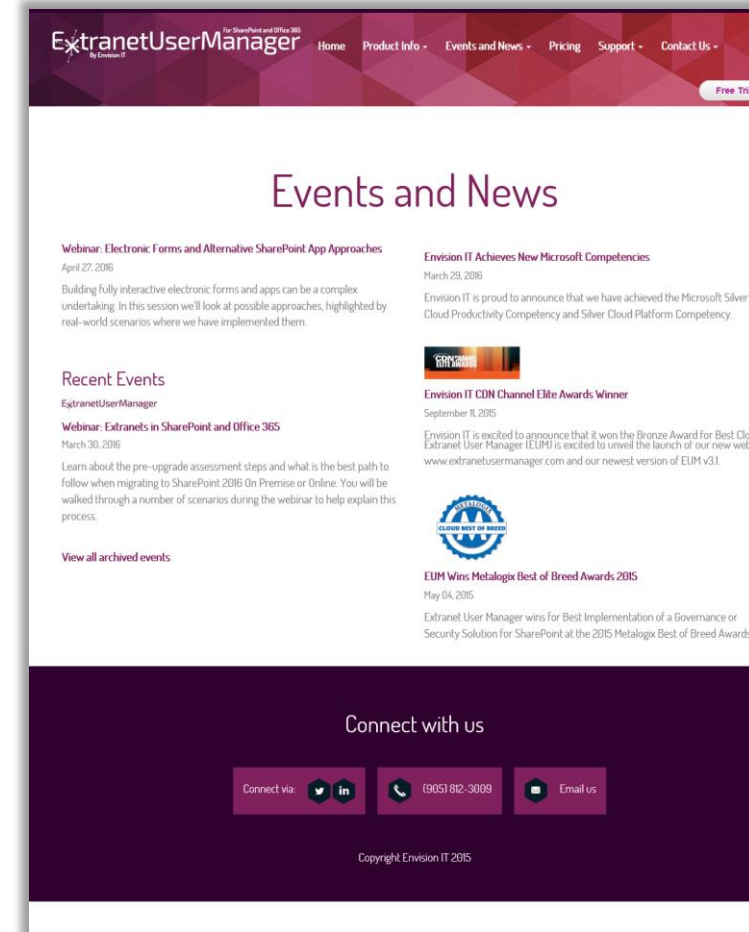
SharePoint APIs

- Client Side Object Model (CSOM)
- REST APIs
- REST seems to be the preferred path that Microsoft is investing in

Cross Site Publishing



www.envisionit.com/events-and-news/events



www.extranetusermanager.com/Events-and-News

SharePoint Framework Web Part for News and Events

The screenshot shows a SharePoint Framework web part for News and Events. The main content area displays a list of events with logos and descriptions. The right-hand pane shows configuration options for the web part.

Event Title	Date	Description
Office 365 Webinar: SharePoint Framework Technical Breakdown	October 26, 2016	The new SharePoint Framework has given web developers the ability to use cross-platform tools to build applications. As a follow up to the first webinar we will be delving deeper into the technical aspects, focusing particularly on Web APIs and security.
SharePoint Engage 2016 in Raleigh	November 02, 2016	Envision IT President Peter Carson will be attending and sponsoring SharePoint Engage this year. This event is your chance to engage with real-world SharePoint peers through numerous sessions.
Microsoft MVP Summit	November 07, 2016	Envision IT President Peter Carson will be attending the MVP Global Summit. This is a multi-day event hosted by Microsoft.
SPTechCon 2016 Speaker	December 05, 2016	Peter Carson of Envision IT will be speaking at the SPTechCon conference. His first session is Running Effective Projects in Office 365 and the second is Electronic Forms and Alternative SharePoint App Approaches.
SharePoint Fest 2016 Speaker	December 06, 2016	Peter Carson of Envision IT will be speaking at the SharePoint Fest conference. His first session is Running Effective Projects in Office 365 and the second is Electronic Forms and Alternative SharePoint App Approaches.

Configuration Panel:

- Description: [Empty]
- Group Name: [Empty]
- Item Type:
- Target Site:
- Item Count:
- Item Date:

Technical Details

- Leverages the existing catalog publishing on our public web sites
- Web part property pane used to configure
- jQuery builds and executes the REST search query
- CORS allows the cross-site query
- Handlebars formats the results as HTML
- SPFx injects the HTML into the page DOM

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

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 *

Employee ID *

Effective Date *

Address 1 *

Address 2

City *

Province *

Postal Code *

Country *

Email Address

Telephone Number



Pension Member

Annual Benefits Statement

Contribution History

T4As

Address Update

Banking Information Update

Retirement Options

Pension Calculator

Banking Information Update

Fields marked with an asterisk (*) are required.

Full Name *

Peter Carson

Employee ID *

pcclimited\pcarson

Name of Financial Institution *

Branch Transit Number *

Institution Number *

Account Number *

Submit



Pension Member

[Annual Benefits Statement](#)
[Contribution History](#)
[T4As](#)
[Address Update](#)
[Banking Information Update](#)
[Retirement Options](#)
[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

Member Contributions per Year

Employer Contributions per Year

Projected Annual Pension

Payable at Age

Number of Years to Age

Month of birth
 ▾

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.

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

Milton District High School

- www.mdhsreads.ca
- Technological Resources Calendar
- Teachers can request resources
- Form is anonymously available
- Teachers confirm requests through an email link
- SharePoint library has approvals turned on
- Librarian approves to publish to site
- Mobile friendly



Technological Resources Request Form

Teacher Name

Email

Requested Items

- Chromebook Cart A (20)
- Chromebook Cart B (20)
- Chromebook Cart B (20)
- iPad Box (8)
- 23 Desktop Computers
- Conference room with overhead projector
- Library space
- Teacher-Librarian

Date

Period

- 1
- 2
- 3
- 4
- 5

Notes

Library Links

[MDHS Website](#)
[MDHS Scene and Herd](#)
[Halton District School Board Website](#)

Contact

Milton District High School Library
396 Williams Avenue, Milton, ON L9T 2G4
905-87802839 x236

Library Hours


Monday through Friday
7:30 AM to 3:30 PM

Connect

[Twitter](#)

College of Early Childhood Educators

- Launched a new mobile-friendly SharePoint 2013 site
- Complain and Mandatory Employer Report forms next
- Anonymously submitted to a Visual Studio REST API
- Document attachments
- Creates a document set with metadata set from the form
- Generates a Word version of the report
- Uploads all attached documents


Home Contact Us Français
Text Size: a a a
Search...

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[Employers -](#)
[Members -](#)
[Become a Member -](#)

Home / About Us / History

About Us

Mandatory Employer Report

I wish to submit a mandatory employer report to the College of Early Childhood Educators

Employer's name Employer's name

Position with the workplace Position with the workplace

Workplace name Workplace name

Workplace address Workplace address

Confidential e-mail Confidential e-mail

Workplace telephone Workplace telephone

Supervisor's name (if applicable) Supervisor's name (if applicable)

Owner's name (if applicable) Owner's name (if applicable)

Parent organization (if applicable) Parent organization (if applicable)

Member Information

If your report relates to more than one RECE, please fill out separate forms for each.

Name (please include College registration # if known) Name (please include College registration # if known)

Position in workplace Position in workplace

Home address (if known) Home address (if known)

Work address (if different from workplace) Work address (if different from workplace)

E-mail E-mail

Home telephone Home telephone **Work/cell telephone** Work/cell telephone

Start date of employment in the workplace Start date of employment in the workplace

End date of employment in the workplace (if applicable) End date of employment in the workplace (if applicable)

Parent Contact Information (if known and applicable)

Parent(s) name(s) Parent(s) name(s)

Home address Home address

Work address Work address

Email Email

Home telephone Home telephone **Work/cell telephone** Work/cell telephone

Incident(s) Information

Incident #1

Incident Location Please describe as clearly and concisely as possible the incident(s) and the conduct that, in your opinion, constitutes professional misconduct, incompetence or incapacity. Attach and label additional sheets if necessary.

Incident Date

Incident(s) Information (continued)

Please describe what steps if any, were taken at the local level to resolve this matter. What was the outcome of this incident within the Workplace (suspension, termination, internal investigation, etc.)?

Have there been previous concerns about the Member's behaviour or professional abilities? If so, please explain the concern(s) and the steps taken to address the issue(s).

If the police have been contacted regarding this incident, please answer the following:

To your knowledge have criminal charges been laid against the member? Yes No

If yes, please provide the following information:

Offences charged Offences charged

Date charges laid Date charges laid

Police Service (OPP, municipal force, etc.) Police Service (OPP, municipal force, etc.)

Contact Name Contact Name

Address Address

Telephone Telephone

Supporting Documentation (please see attached list below)

In order for the College to successfully complete its investigation, it is important that you submit any supporting documentation along with your report. This may include:

- relevant policies
- e-mails
- serious occurrence reports
- employment termination letters
- verbal/written warnings
- pictures, video footage
- witness statements
- any other information you feel may be relevant to the investigation or useful for the Complaints Committee during its deliberation

If the College requires any information you will be contacted.

If you provide any supporting documentation, please ensure it is properly labelled and explain its relevance to your report.

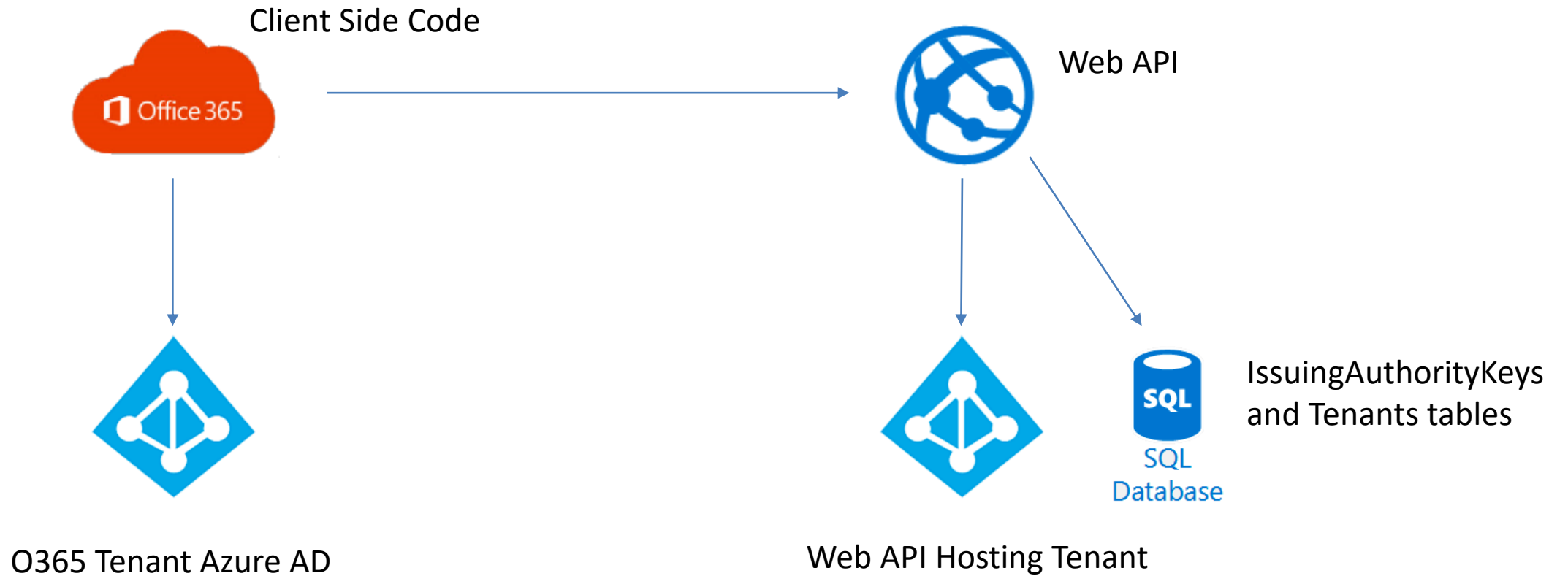
Signature Signature **Date** Date

[Contact Us](#) [Privacy Statement](#) [Terms and Conditions](#) [Webmaster](#)
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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



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



Home EDIT LINKS

RequestForm

Recent

Tasks

SOR

VacationRequests

VacationAllocation

Workflow Tasks

Request Form

Site Contents

Recycle Bin

EDIT LINKS

Request Type Select a request type

Staff Member Peter Carson

Manager Peter Carson

Start Date mm/dd/yyyy

End Date mm/dd/yyyy

Comments

Status Draft

Created On

Total Business Days 0

Available Vacation Days 3

Search this site

Save Request

Request History

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

Employee

Peter Carson

Manager

Choose...

Start Date 04/28/20



End Date 04/29/20

**Multiple Days****Absence type**

Choose...

*Only one absence type is allowed per range***Comments****Status****Draft****Available Time Off**

Type	Hours
Vacation	20
Float	10
Banked Overtime	0
Sick Carried to Vacation	40
Banked Stat	5.5

Available Hours

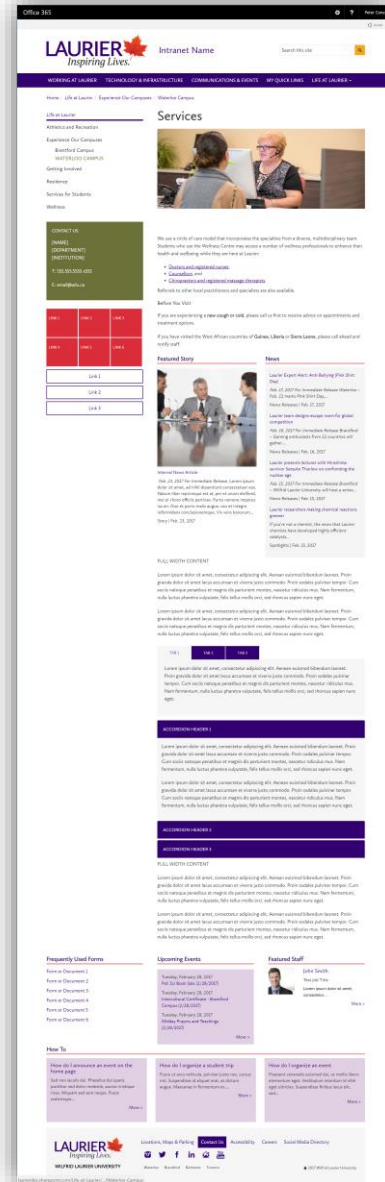
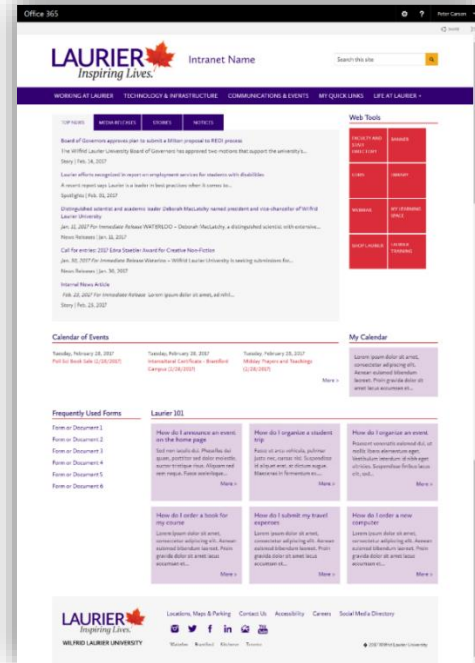
Date	Work hours	Notes
04/27/2016	7	VAC
04/28/2016	7	
Total Available Hours	14	

[Save Request](#)**Request History**

Type of Leave	Start Date	End Date	Hours	Status	Manager to Approve	Last Action
No items to display						

Wilfred Laurier University

- SharePoint Online / Office 365 Staff Portal
- Launching May 2017
- Live integration of News and Events from external publishing systems
- SPFx parts for quick links, tabs, and accordions



Ignite SharePoint Framework Sessions

- [BRK2114 – Introduction to the SharePoint Framework](#)
- [BRK4015 – Build client-side web parts](#)
- [BRK2117 - Discover the future of Microsoft SharePoint development](#)
- [BRK2115 – Learn about PnP and the new SharePoint Framework](#)

Recordings and slide decks available for on demand viewing

Sharing is caring...

Code samples

Reusable components and solutions

Guidance documentation

Monthly community calls

Case Studies

SharePoint Framework

SharePoint add-ins

Microsoft Graph, Office 365 APIs etc.

Remote provisioning and client side development

<http://aka.ms/SharePointPnP>

BLUE METEORITE **VOLVO**





2013

Internal

Internal initiative in Microsoft to start collecting learnings from add-in model



2014

Going public

Going first public in CodePlex, then moved to GitHub. Concentration on add-in model enterprise scenarios.

2015

Reusability

PnP Provisioning Engine introduced. Reusable components and solutions, like PnP Partner Pack introduced. Weekly webcasts started.

2016

Partnership

PnP ownership moved to engineering, team works with a partnership on aligning roadmap. Work with SP Framework starts.



More than **2000** tenants use PnP Core Component in SharePoint Online. Numerous also on-prem.

More than **280 million** requests using PnP Core Component in September before 13th.

More than **150** samples to learn and take advantage from in your work

More than **11000** unique visitors during past 2 weeks in PnP repositories

More than **300** contributors in the GitHub for the PnP and SP repositories.



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>

QUESTIONS & NEXT STEPS