



BUILDING APPS FOR MS TEAMS: EMPOWERING COLLABORATION WITH CUSTOM SOLUTIONS



Eli Schei
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About me

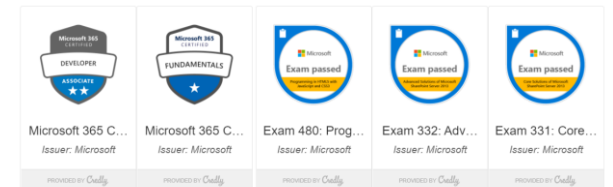
Eli H. Schei

- Senior developer / subject manager at Point Taken AS
- Been working as a developer since 2011, fell into the SharePoint space in 2013 – never managed to get out
- Wife. Mom to two girls, 4 and 7 years old
- Have a cat named Poppy
- Loves to create stuff – with code, yarn or a pencil.

 eli.h.schei@pointtaken.no

 <https://acupof.dev>

 <https://github.com/Eli-Schei>





What about you?



Building Apps for Microsoft Teams

01 | What

What types of extensibility does MS Teams offer?

02 | Why

Why should we spend time building apps for Teams?

03 | How

How do we go about doing that?

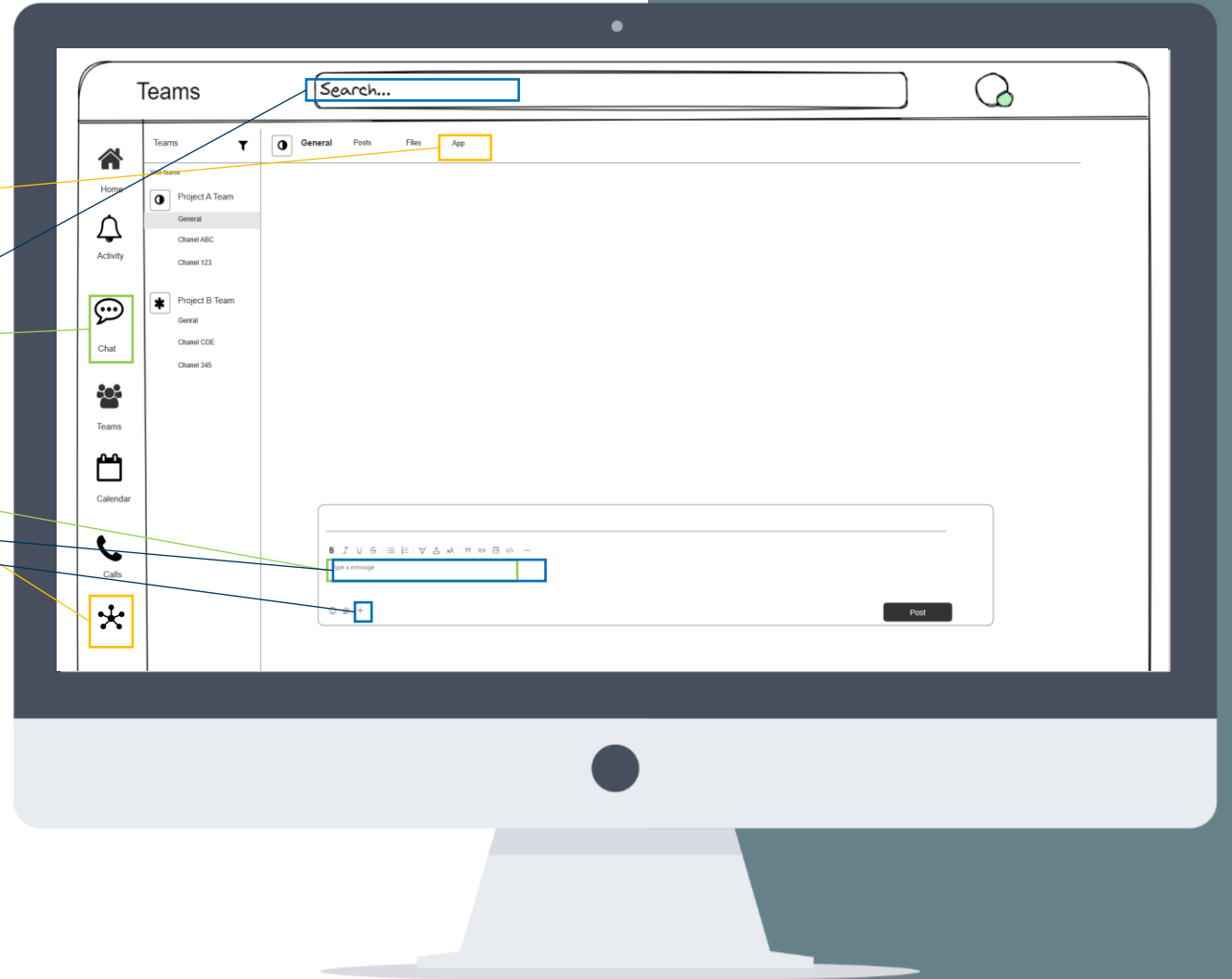
Goal of this talk:

- Give you a overall map of what is possible when it comes to Teams App Dev
- Give you a starting point on this map

01 | What

What types of extensibility does MS Teams offer?

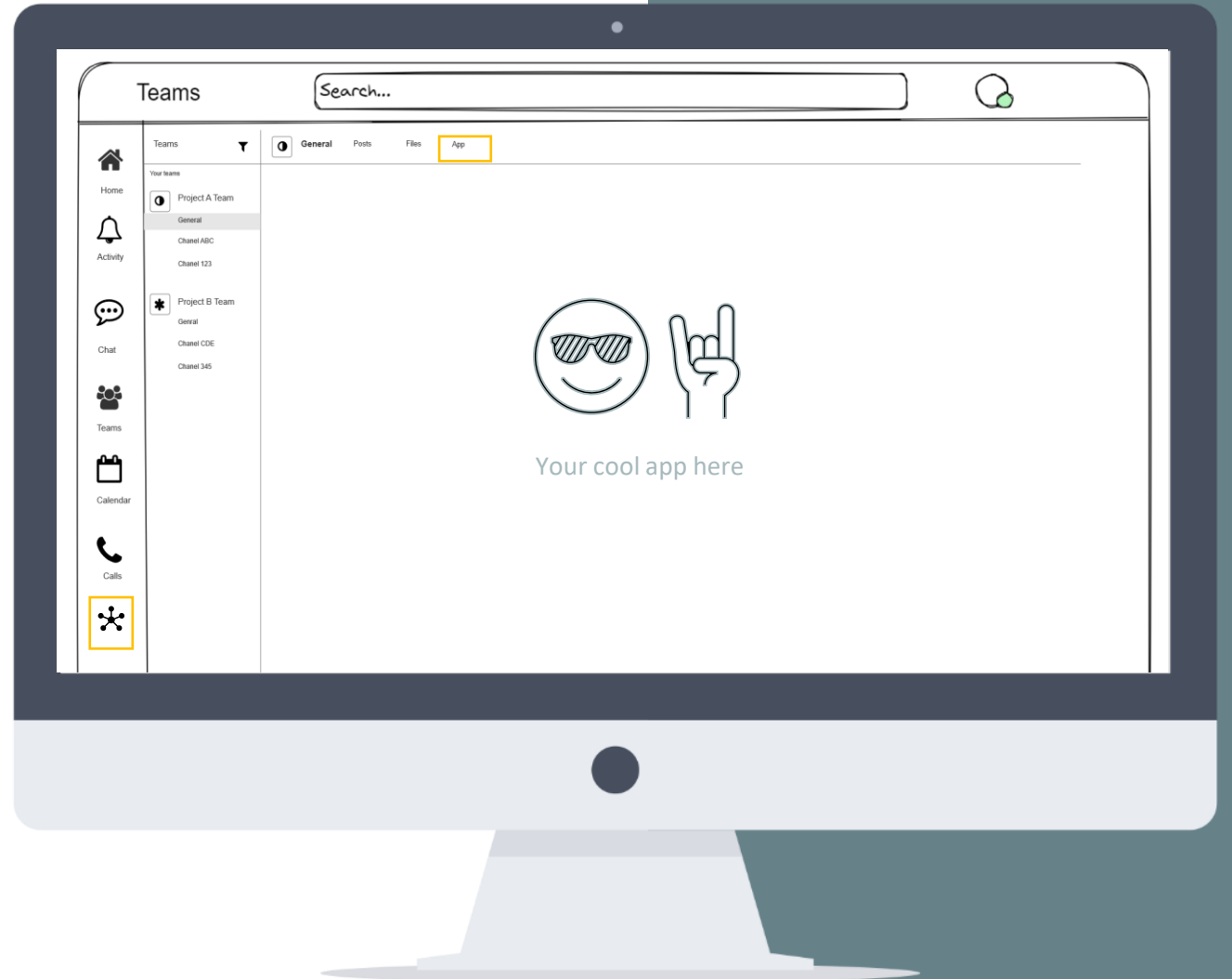
1. Tabs / Personal apps
2. Bots
3. Messaging Extensions
4. Meeting apps*



Tabs /Personal Apps

Main characteristics of tabs

- A tab / app is just web apps that are displayed in teams
- Which means that your creativity is the only limitation (ish)
- You can create a 'personal experience' customized based on the current user
- Or you can build shared experiences

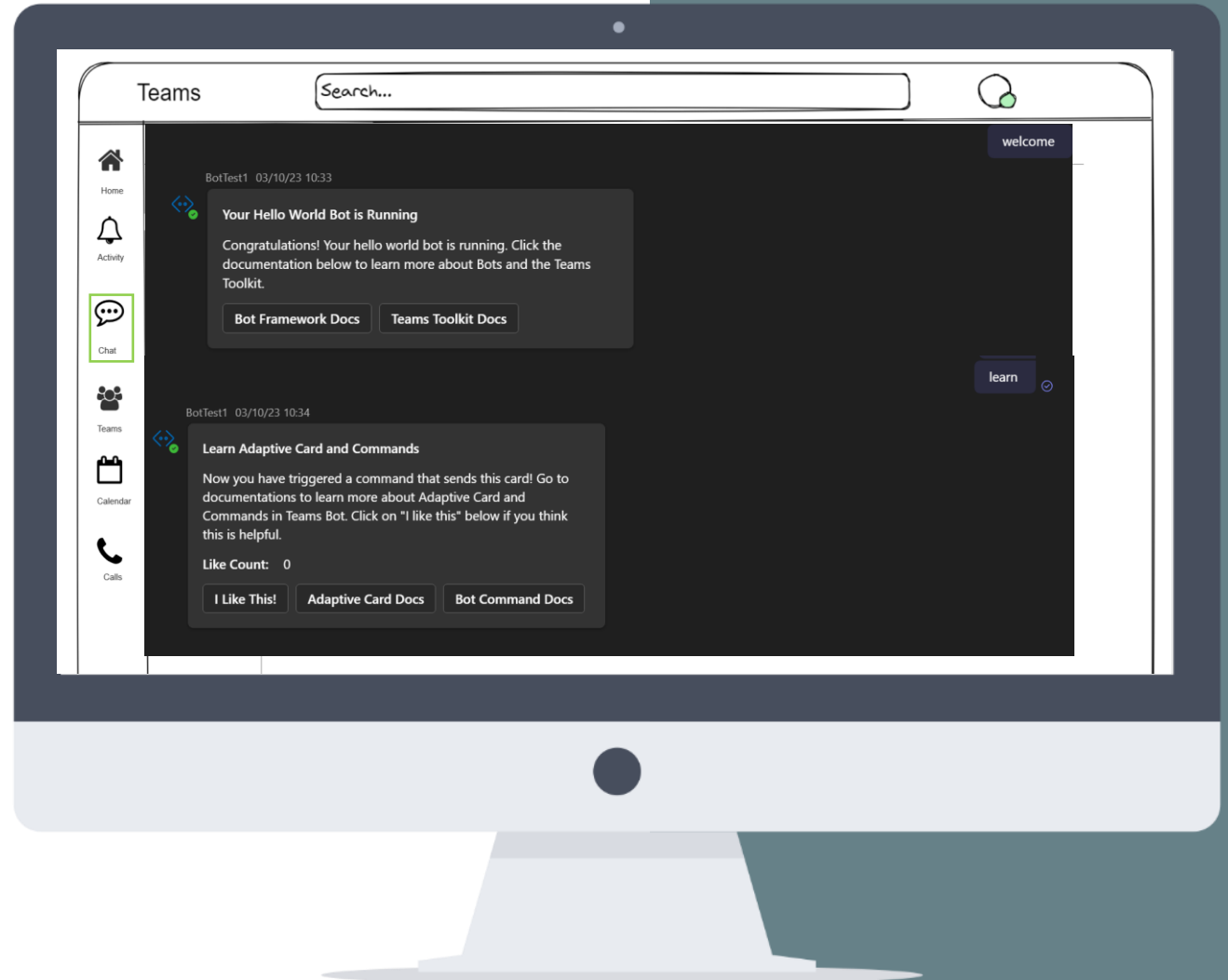


Bots

Bots facilitate user interaction with a web service via text and/or adaptive cards

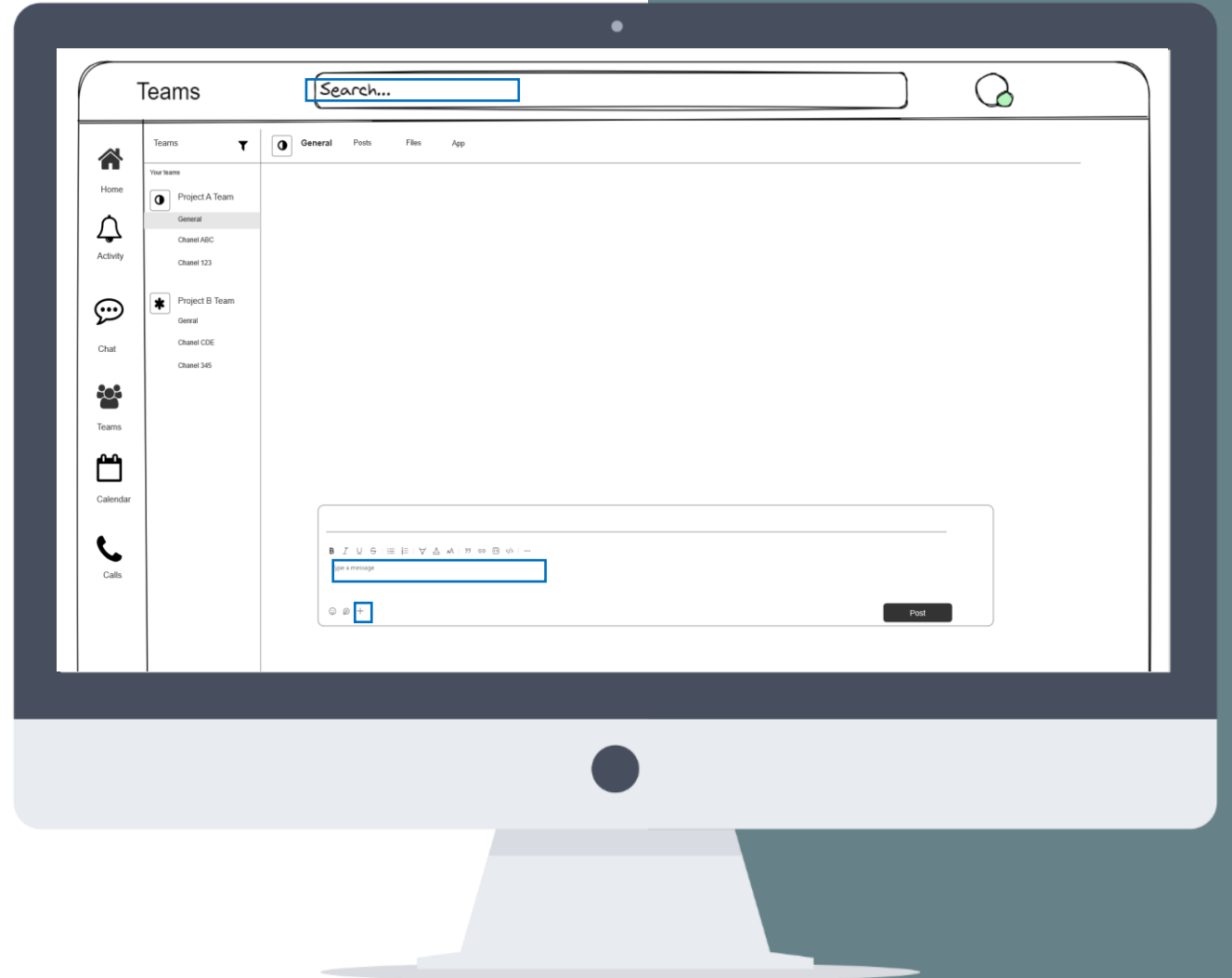
Can be used in channels or group chats, or 1:1 chat (with the bot)

Most commonly needs to be initiated by user @bot – but you *can* create ‘notification’ bots.



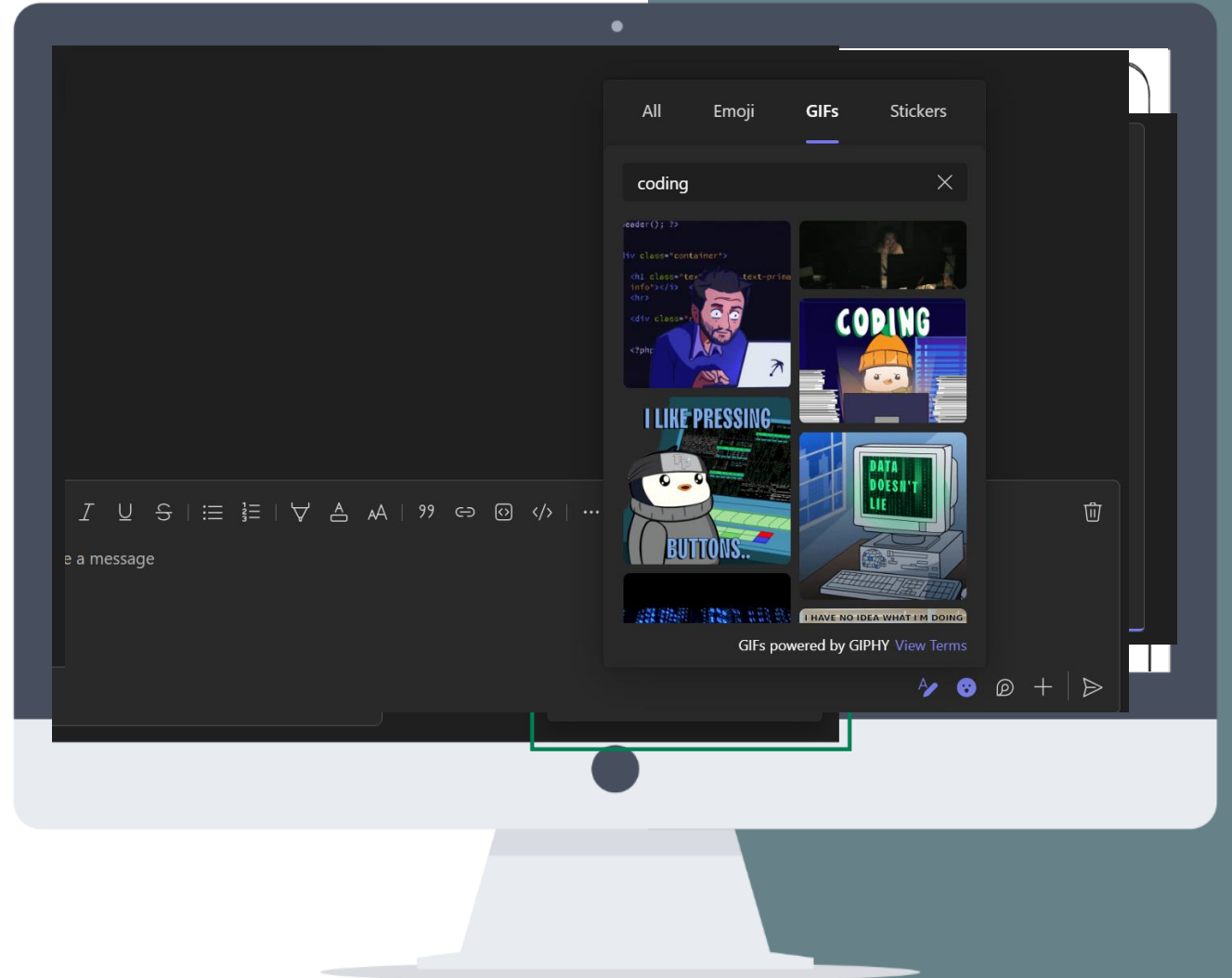
Messaging extensions

- Link unfurling
 - Based on the URL you copy inside a textbox (chat/channel) you get a preview of the content.
- Action Command
 - Used to present the users with a modal pop-up to collect or display information
- Search Command
 - allow the users to search an external system for information, and embed the results in the conversation (chat/channel)



Messaging extensions

- Link unfurling
- Action Commands
- Search Command



02 | Why

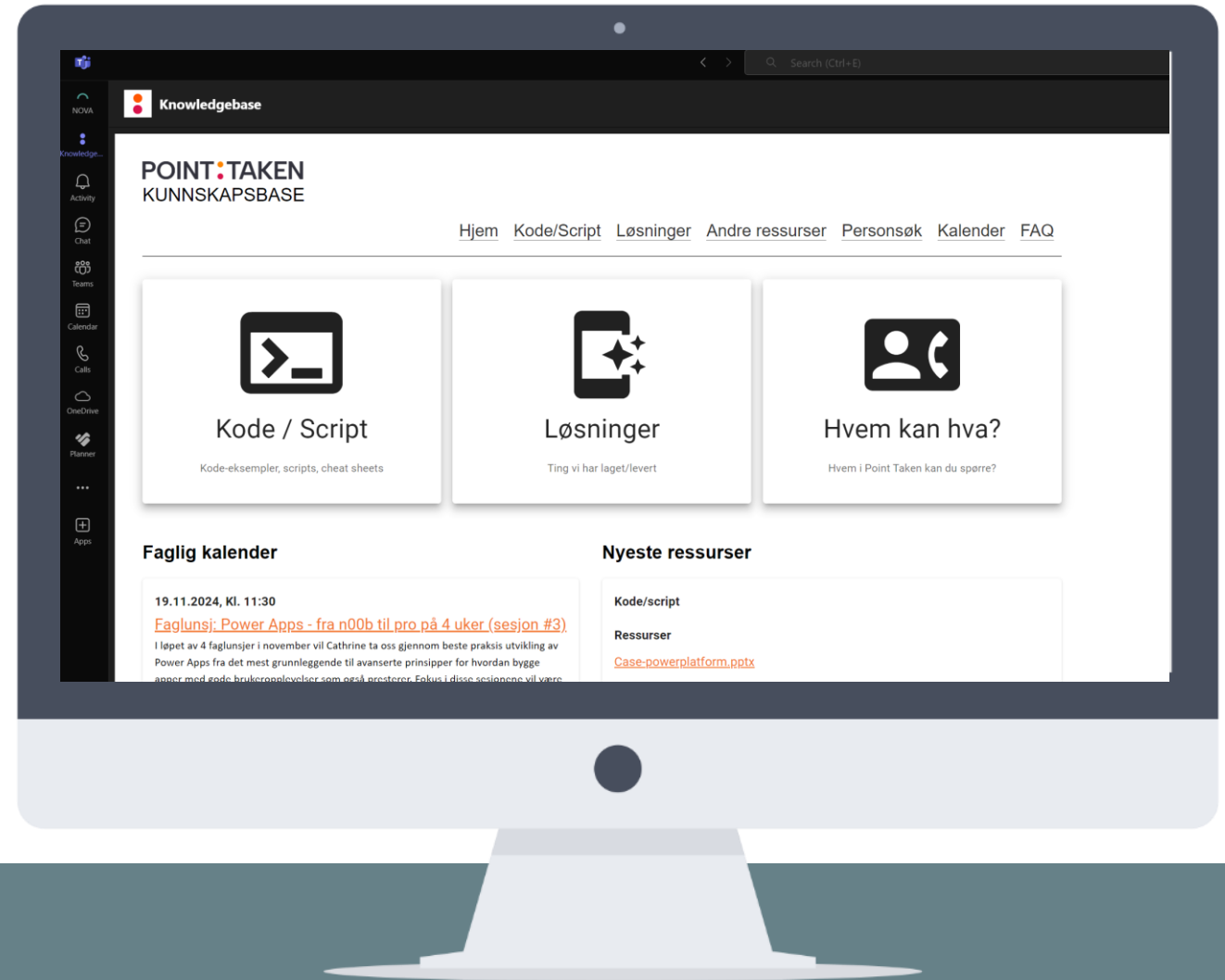
Why should we spend time building apps for Teams?

- Give the user access to information where they are
→ inside of teams
- Do daily tasks from one place (avoid context shifting)
- Improve/enhance the functionality teams offers

Use Cases / Examples

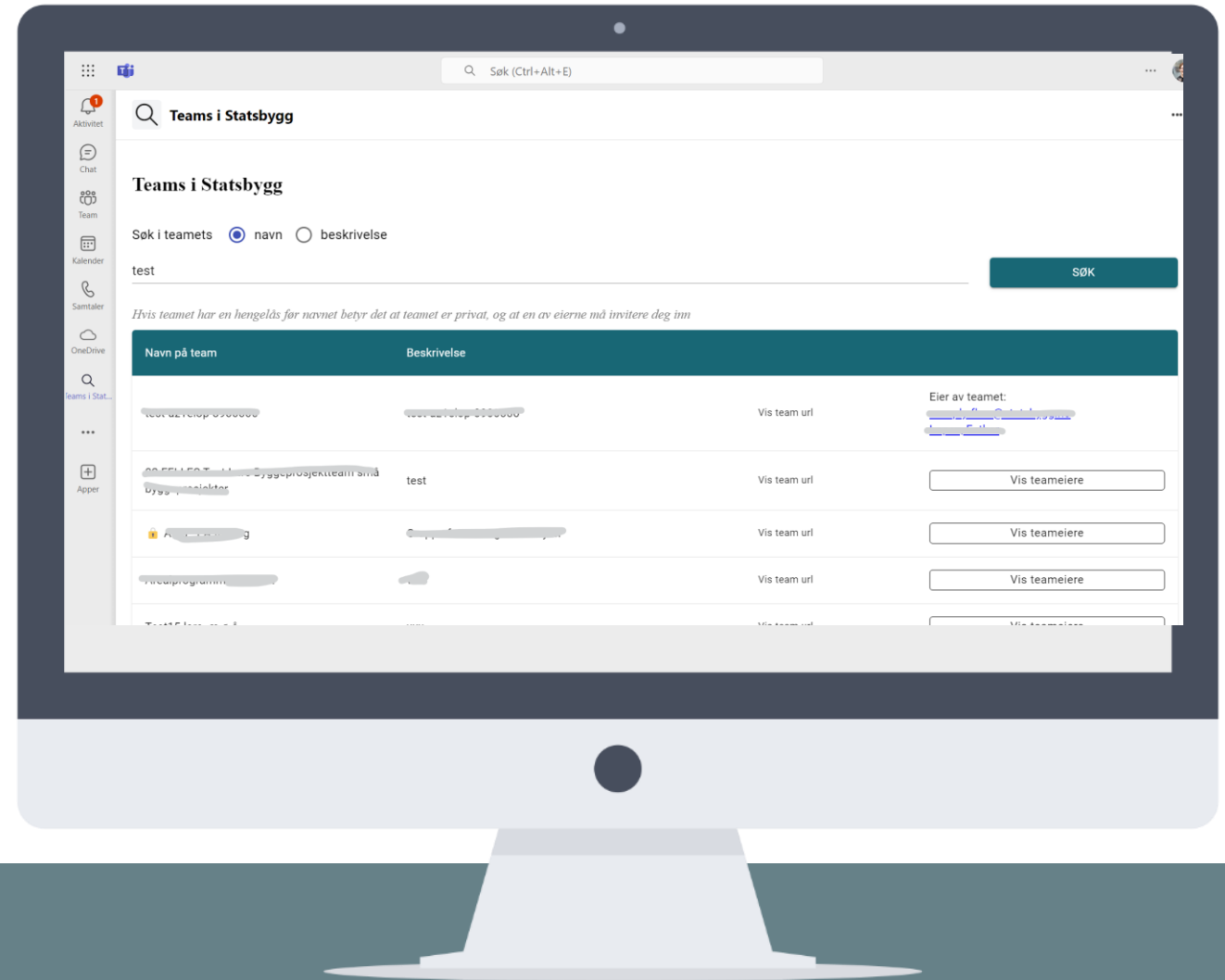
Point Taken Kunnskapsbase

- Centralized Experience sharing
- Reusable resources like scripts/code
- Find a colleague based on skill



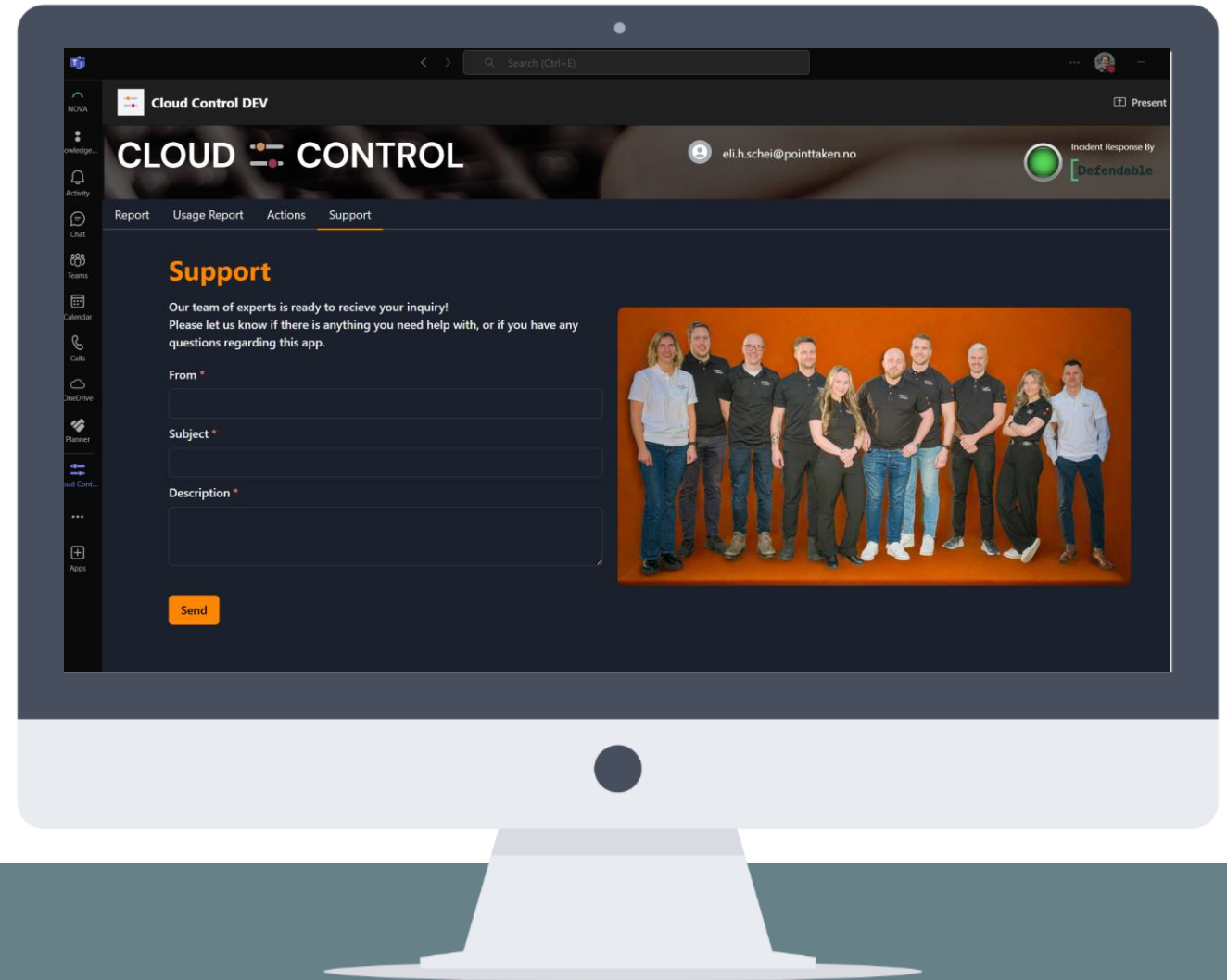
Search in all Teams

- Enable search in Private teams as well as open teams
- Information about owner
- Easy copying of team URL to share with others



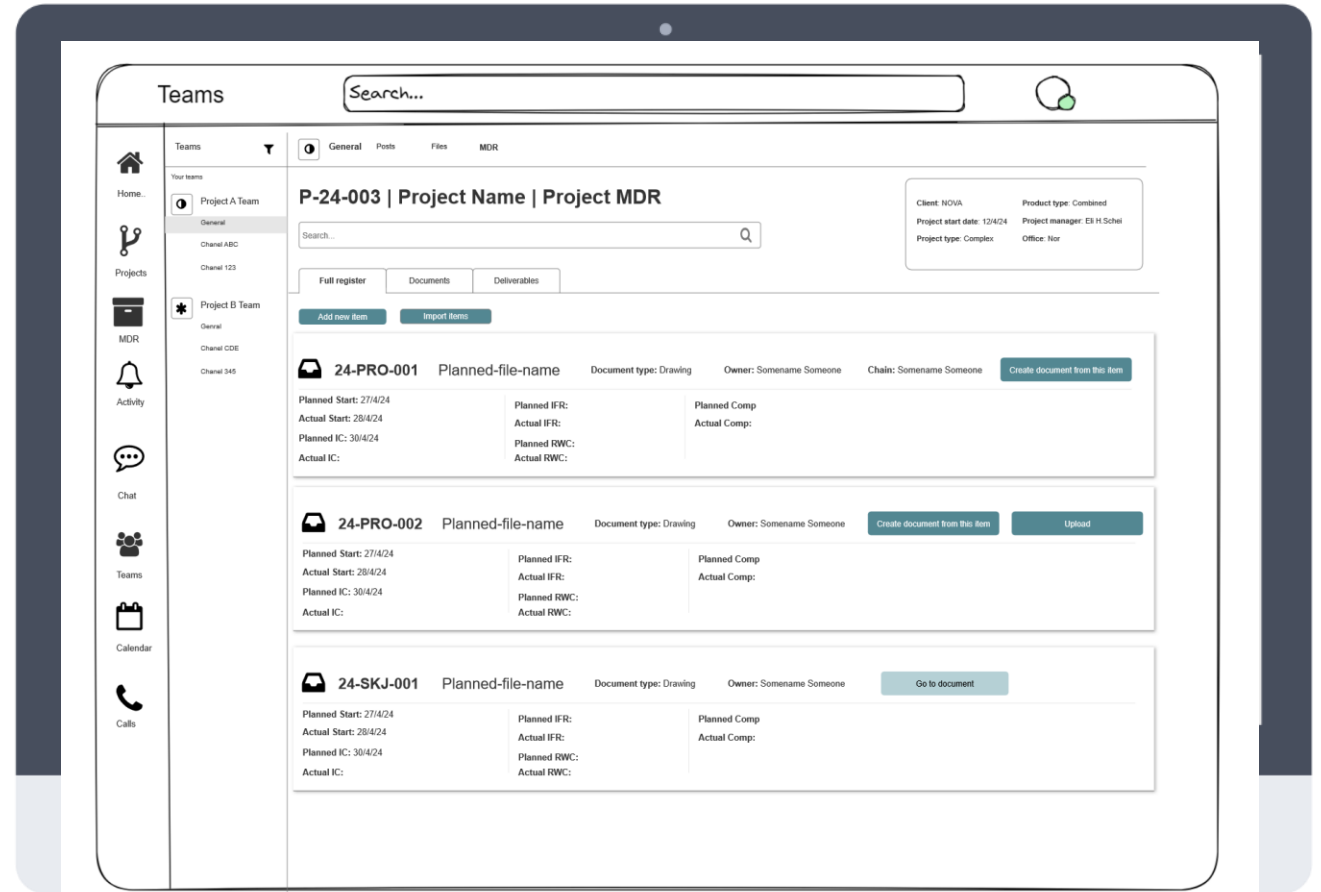
Cloud Control

- App that is provided with the Cloud Control Service.
- Overview of your stats directly from teams
- Different reports
- Follow up on actions (or ask support to help)
- Contact support



Project Master Document Register

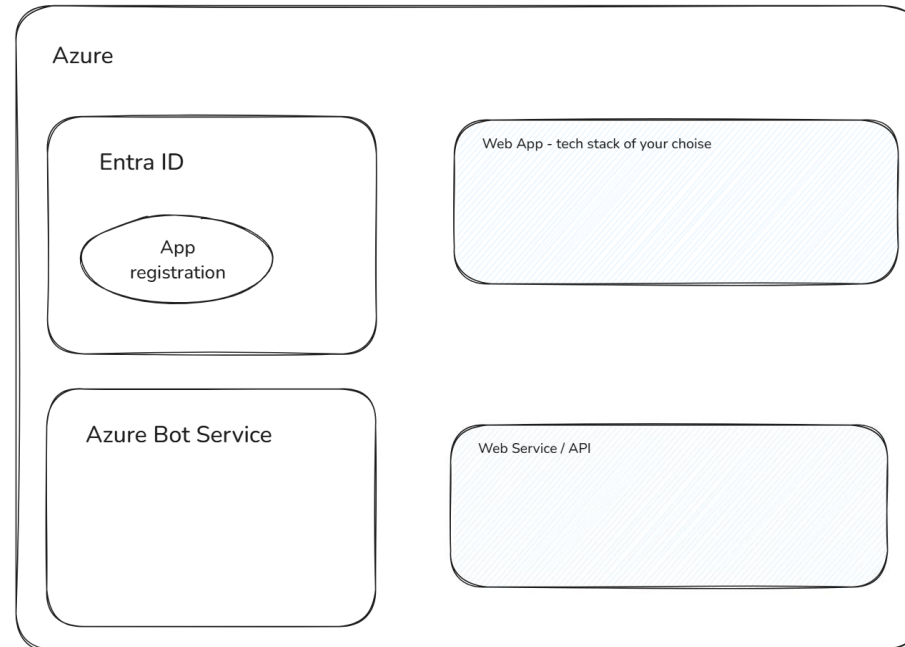
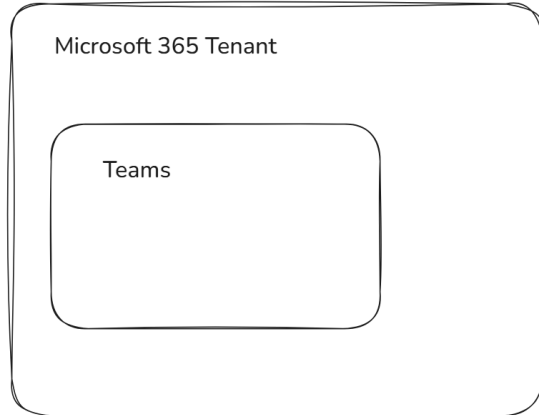
- Tab in every project team
- Can register documents before the document is created
- Send document through a multi step approval flow
- Package documents together and send to client as a 'transmittal'



03 | How

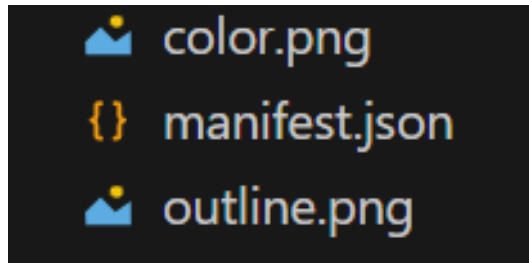
How can you use your coding skills to create these apps?

What do you need?



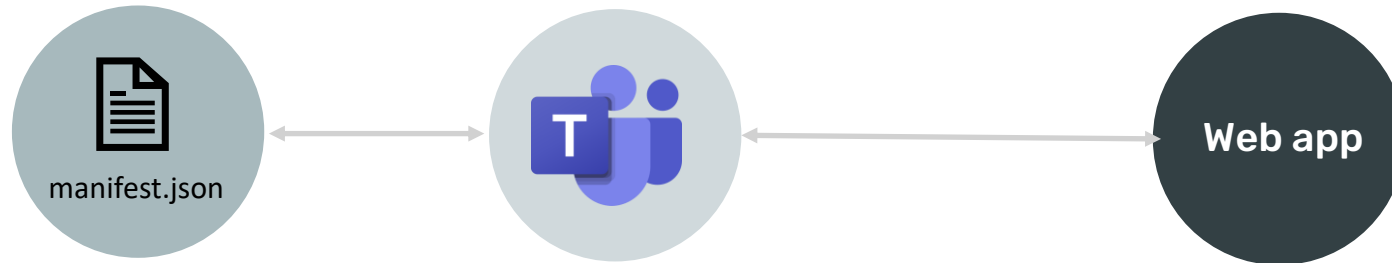
→ Teams apps are just web apps hosted in the cloud

app package.zip



```
{
  "$schema": "https://developer.microsoft.com/en-us/json-schemas/teams/v1.15/MicrosoftTeams.schema.json",
  "manifestVersion": "1.15",
  "version": "1.1.0",
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  }
}
```

Tabs / Personal Apps



Bots / Messaging extensions



Tools that are available to you:

Setting up, and lifecycle management:

- SharePoint Framework
- Teams Toolkit SDK
- Teams Toolkit CLI
- Developer Portal

Working with Teams or user context/data

- Microsoft Graph
- Microsoft Authentication Library (MSAL)
- Pnpjs
- TeamsFx SDK

Different tools

Tools for setting up the project (source code)

SharePoint Framework

TypeScript / React*

Created as a SharePoint WebPart,
that can also be added to Teams

The app is hosted in a App Catalog
(in SharePoint site or in tenant AC)

Teams toolkit – VS Code extension

TypeScript* / React*

Created as a 'regular' web app

App is hosted in Azure by default
(but you can change the scripts to
host it somewhere else)

Comes with setup and script to
handle deploy to Azure (including
App registration in Entra ID)

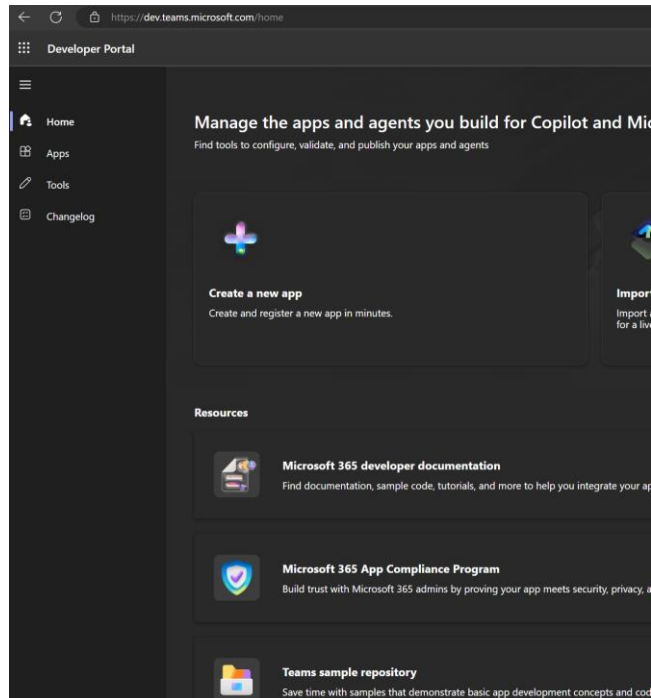
Teams toolkit CLI

Same as Teams toolkit VS
Code extension – but
command line

Different tools

Developer Portal

→ dev.teams.microsoft.com



Teams toolkit CLI

Command	Description
teamsapp doctor	Prerequisites to create a Teams application.
teamsapp new	Create a new Teams application.
teamsapp add	Add features to your Teams application.
teamsapp auth	Manage authentication for cloud service accounts. The supported cloud services are Azure and Microsoft 365.
teamsapp entra-app	Manage the Microsoft Entra app in the current application.
teamsapp env	Manage environments.
teamsapp help	Show Teams Toolkit CLI help.
teamsapp install	Upload a custom app for a specific application package across Microsoft 365.
teamsapp launchinfo	Get launch information of an installed Microsoft 365 App.
teamsapp list	List available Teams application templates and samples.
teamsapp provision	Run the provision stage in <code>teamsapp.yml</code> or <code>teamsapp.local.yml</code> .
teamsapp deploy	Run the deploy stage in <code>teamsapp.yml</code> or <code>teamsapp.local.yml</code> .
teamsapp package	Build your Teams app into package for publishing.
teamsapp validate	Validate the current application.
teamsapp publish	Publish the app to Teams.
teamsapp preview	Preview the current application.
teamsapp update	Update the app manifest (previously called Teams app manifest) to Teams Developer Portal.
teamsapp upgrade	Upgrade the project to work with the latest version of Microsoft Teams Toolkit.
teamsapp collaborator	Collaborate with other developers in the same project.
teamsapp uninstall	Remove an acquired Microsoft 365 App.

Other

- PnP PowerShell

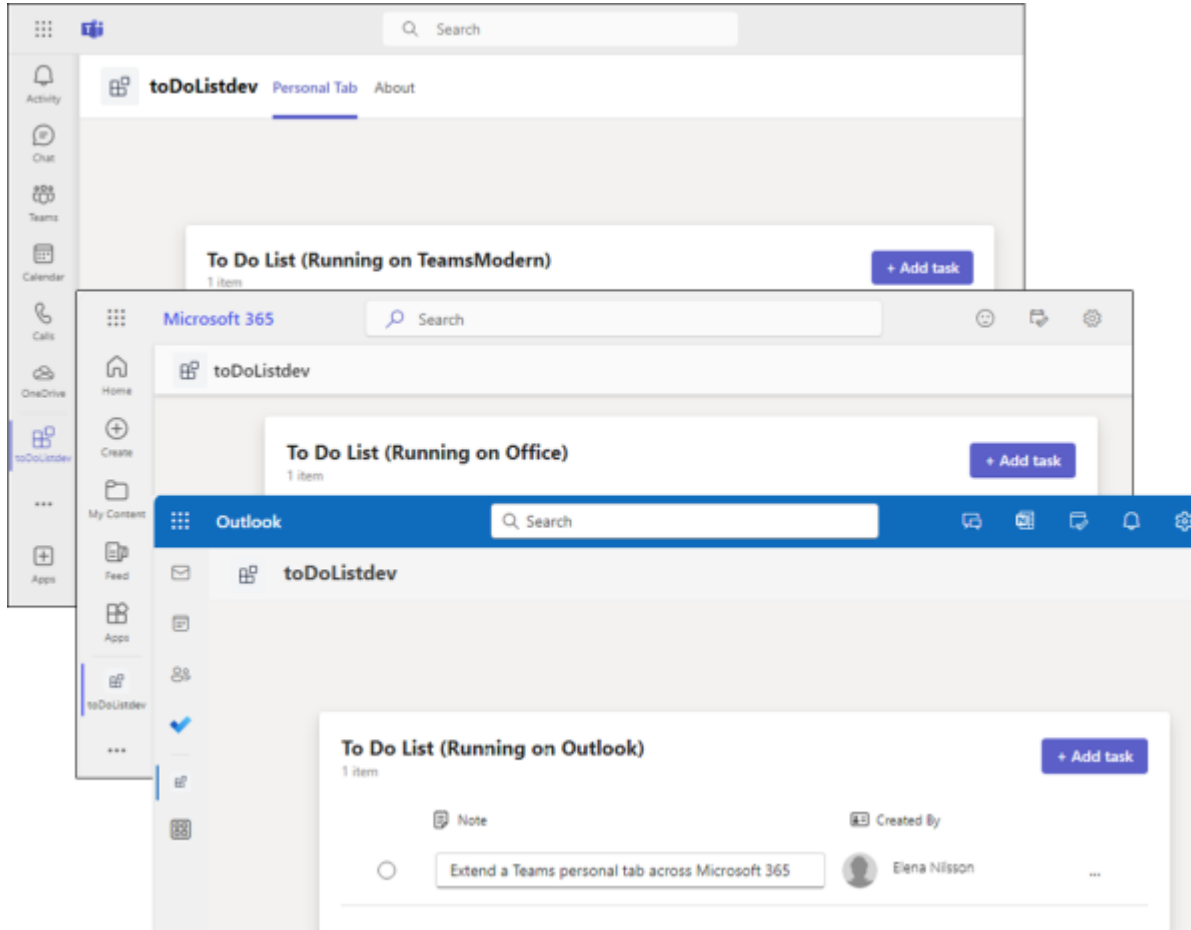
**Working with Teams -,
or user context/data**

Microsoft Graph

Microsoft Authentication Library (MSAL)

Pnpjs

TeamsFx



<https://learn.microsoft.com/en-us/microsoftteams/platform/m365-apps/overview>

Resources



Microsoft Teams Developer documentation

<https://learn.microsoft.com/en-us/microsoftteams/platform/mstdd-landing>



MS Teams Toolkit Overview

<https://learn.microsoft.com/en-us/microsoftteams/platform/toolkit/teams-toolkit-fundamentals>



Teams apps with SPfx

<https://learn.microsoft.com/en-us/sharepoint/dev/spfx/build-for-teams-overview>



Teams apps samples

<https://github.com/OfficeDev/Microsoft-Teams-Samples>

Thank you!



eli.h.schei@pointtaken.no



<https://acupof.dev>



<https://github.com/Eli-Schei>