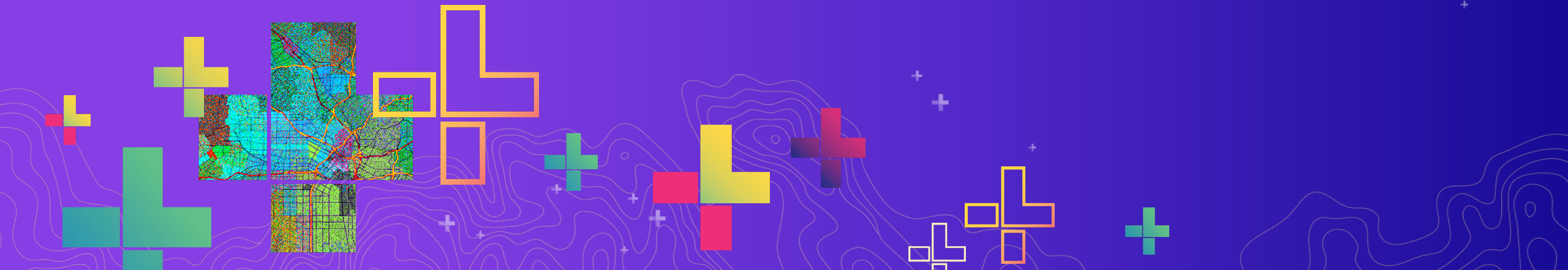
esri | THE SCIENCE OF WHERE

Building Native Cross-Platform Apps with AppStudio: An Introduction

Erwin Soekianto
Chris LeSueur

2020 ESRI DEVELOPER SUMMIT | Palm Springs, CA



Agenda

- What is AppStudio for ArcGIS?
- Apps Built using AppStudio
- A Tour of AppStudio
- Deploying AppStudio Apps
- Customizing Apps with Code
- How do you get AppStudio

What is AppStudio for ArcGIS?

What is AppStudio for ArcGIS?

What is AppStudio for ArcGIS?

solution for

creating native apps

What is AppStudio for ArcGIS?

low-code solution for

creating native apps

What is AppStudio for ArcGIS?

low-code / no-code solution for creating native apps

Why Native Apps?

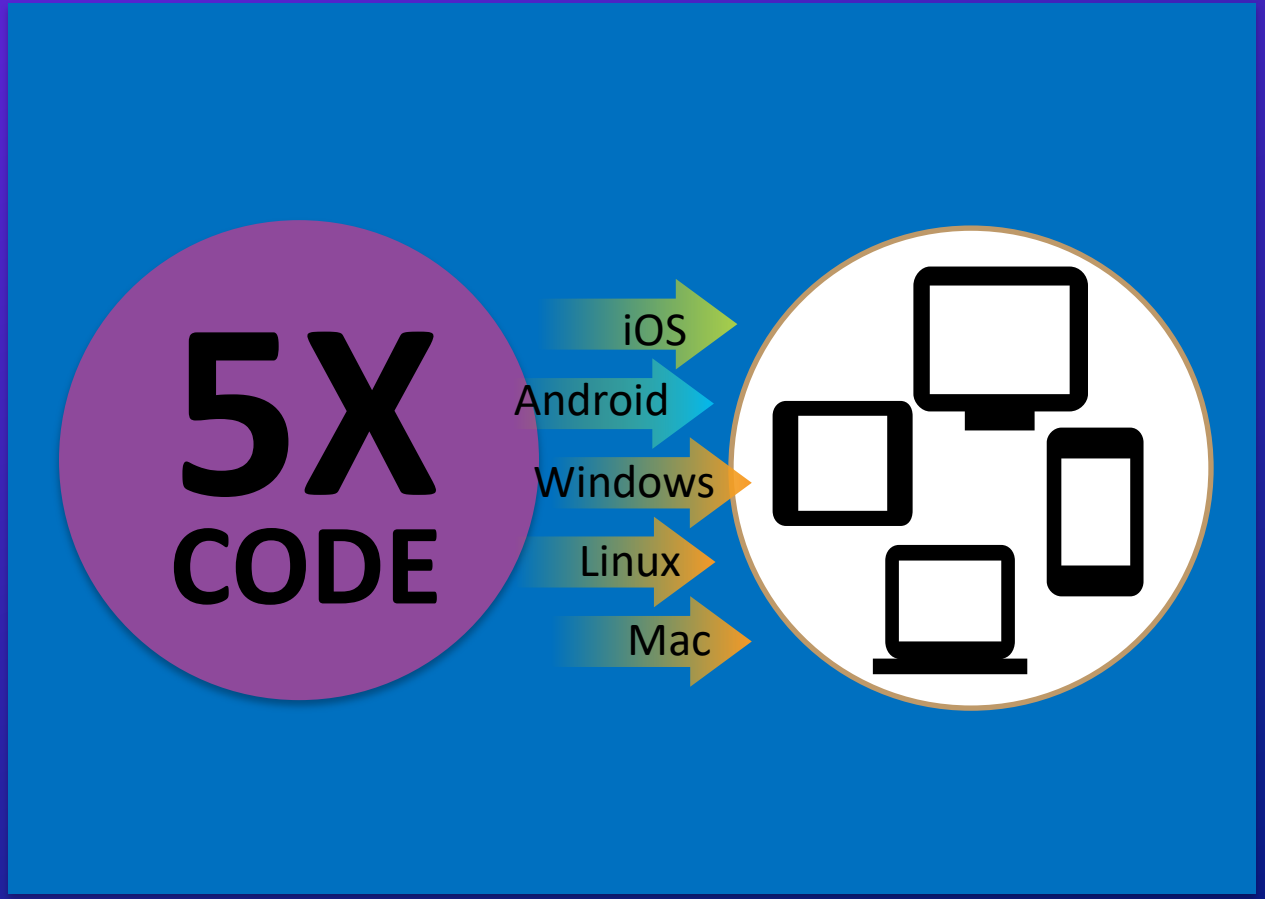
Offline

Device Capabilities

App Stores

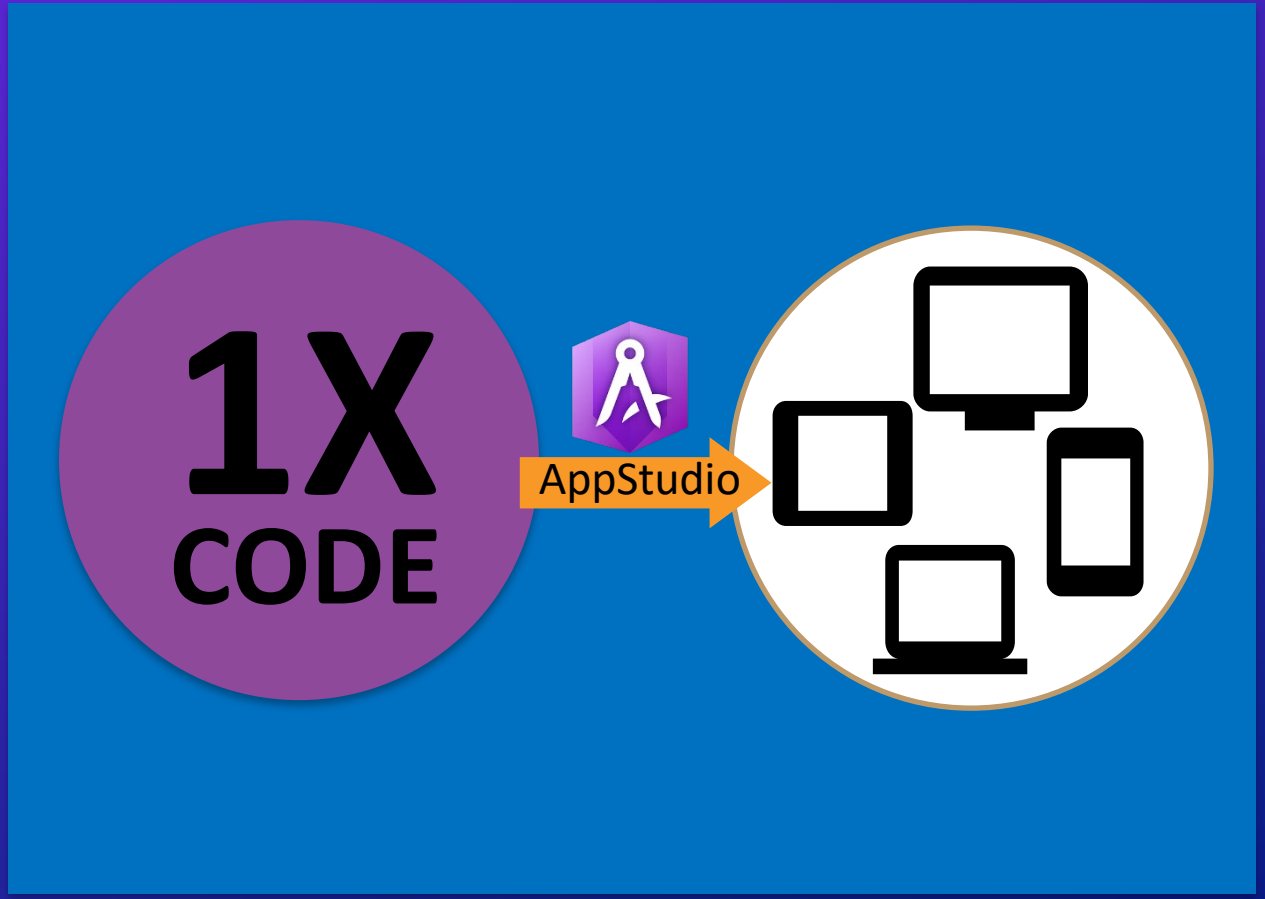
Challenges of Native App Development

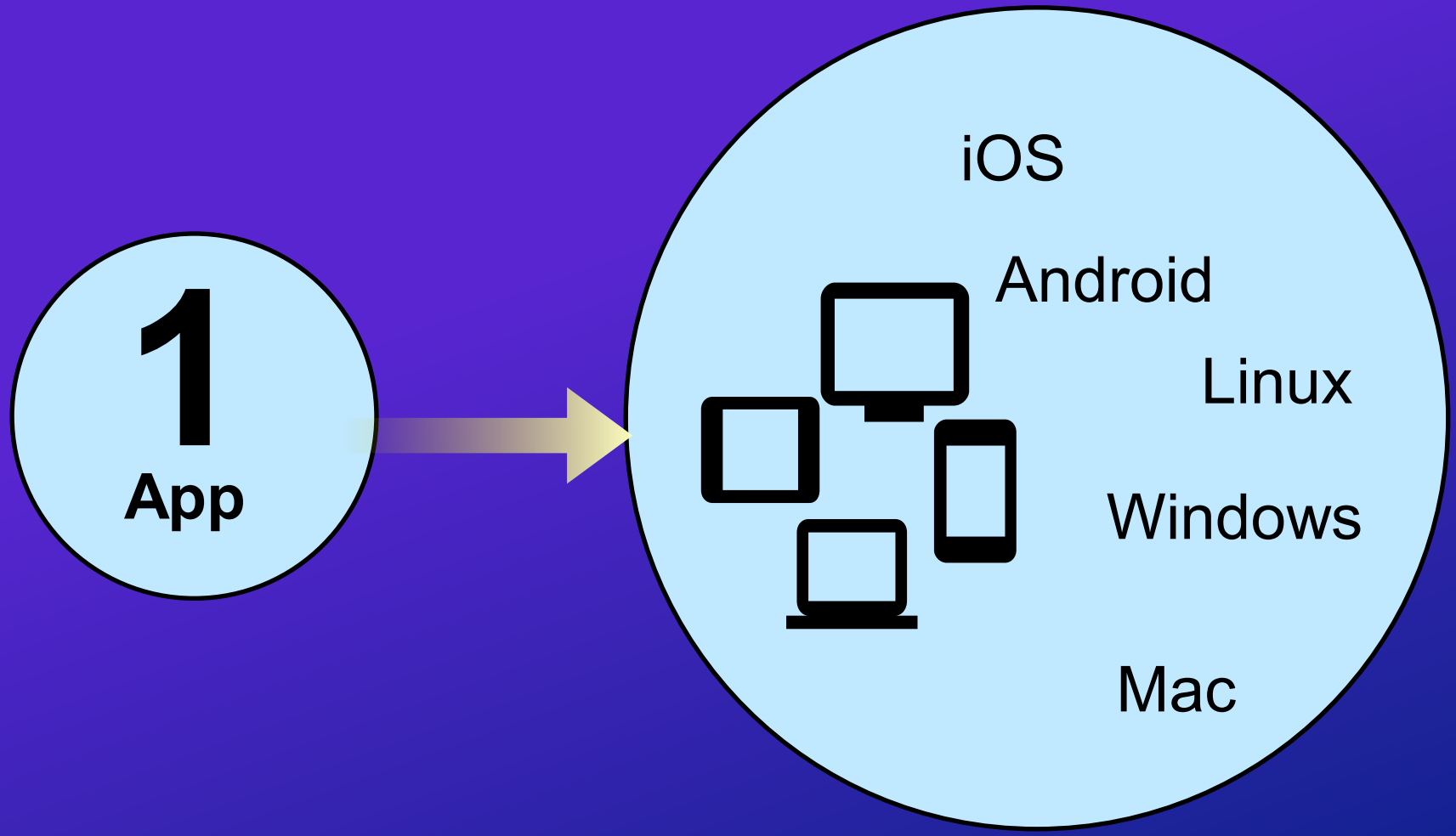
- Time and Cost
- App Distribution
- App Security
- App Maintenance and Updates

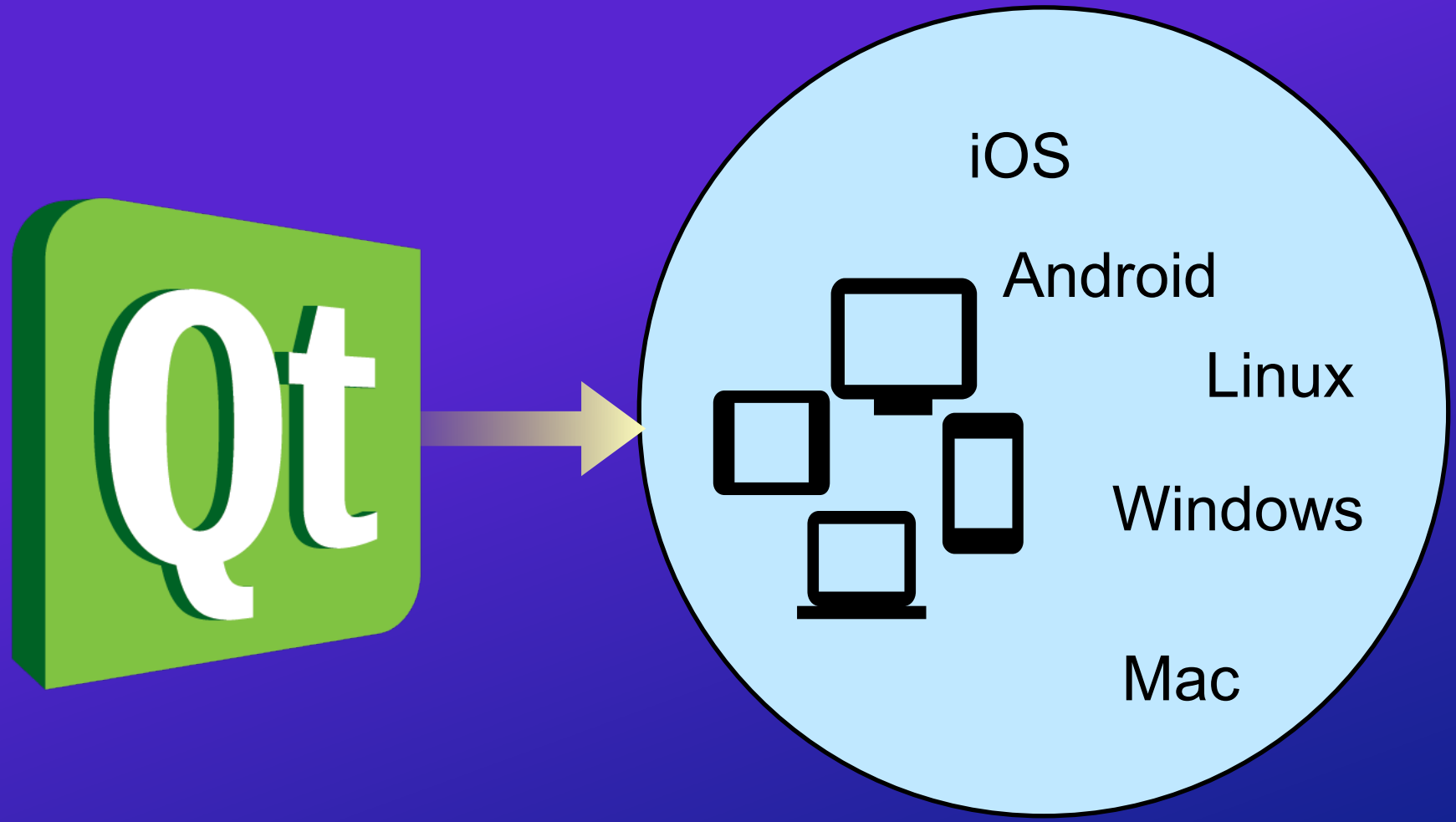


Challenges of Native App Development

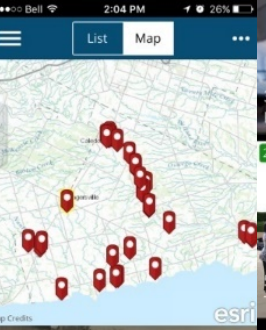
- Time and Cost
- App Distribution
- App Security
- App Maintenance and Updates




1
App
iOS
Android
Linux
Windows
Mac

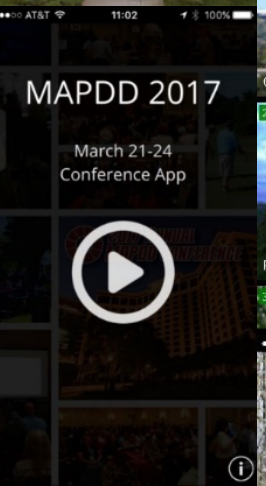

Qt
iOS
Android
Linux
Windows
Mac

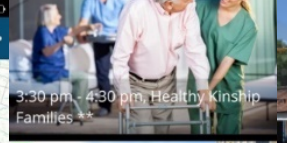
Apps Built using AppStudio


List
Map

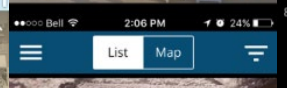
Hagersville Farmers Market

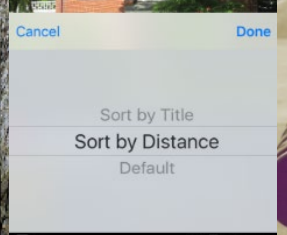
GRIFFITH ON THE GO
Phone Numbers
Events Calendar
Facebook
Report Problems
Code Violation Descriptions


MAPDD 2017
March 21-24
Conference App


3:30 pm - 4:30 pm, Healthy Kinship Families **

5:00 pm - 6:00 pm, Cocktails on the Terrace sponsored by VALIC


Registry Office

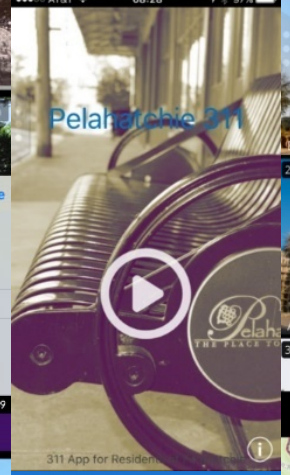

Cancel
Done
Sort by Title
Sort by Distance
Default
List
Map

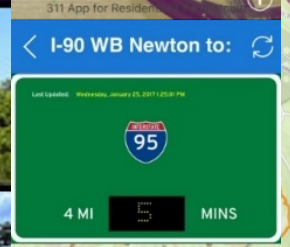
Cerro La Santa

Peña La Francia

Griffith Phone Directory

Don Davis Sales & Service
807 Highway 80 East 601-854-8242


Pelahatchie 311
311 App for Residents


I-90 WB Newton to:
95
4 MI
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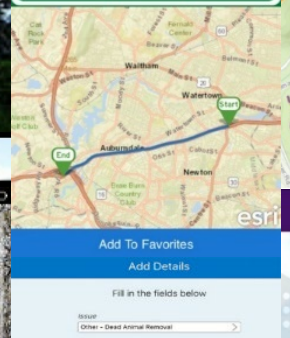
MINS


Add To Favorites
Add Details
Fill in the fields below

Lock & Dam # 5 Oneida (Caledonia)

Edinburgh Square Heritage and Cultural Centre

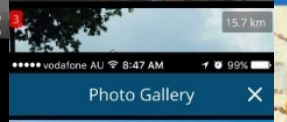
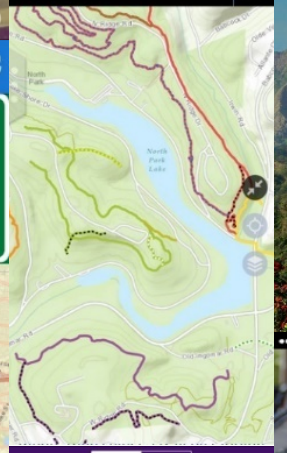


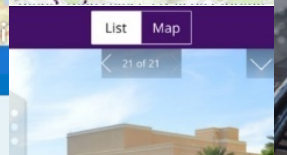
Photo Gallery

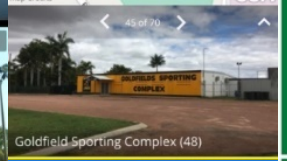
Bagan Temples

Ananda Temple

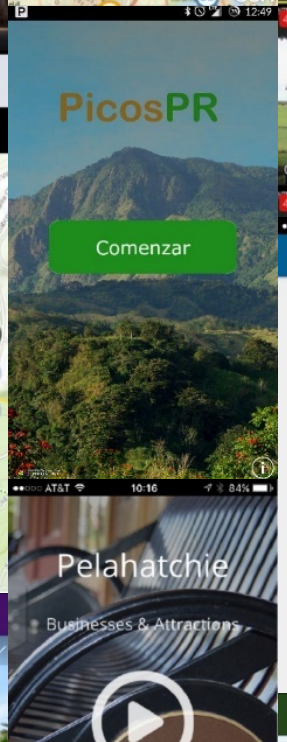
North Park




List
Map

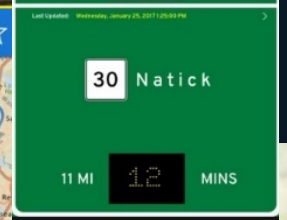

Goldfield Sporting Complex (48)

GoTime


PicosPR
Comenzar

Pelahatchie
Businesses & Attractions

95
4 MI
5
MINS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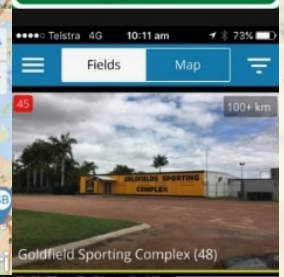
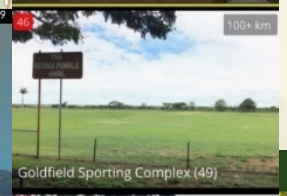
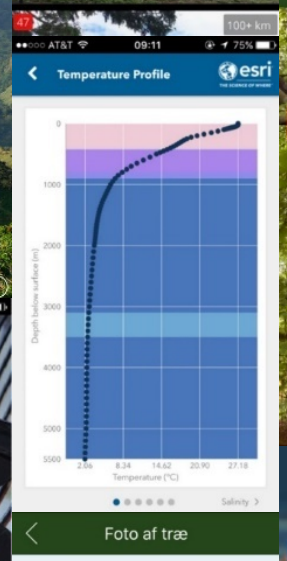
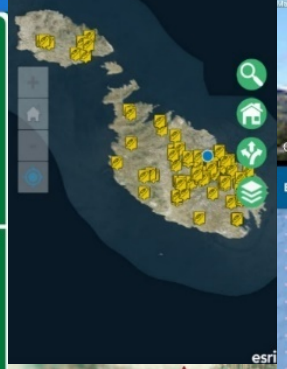
Natick
11 MI
12
MINS


Fields
Map
Goldfield Sporting Complex (48)


Goldfield Sporting Complex (49)

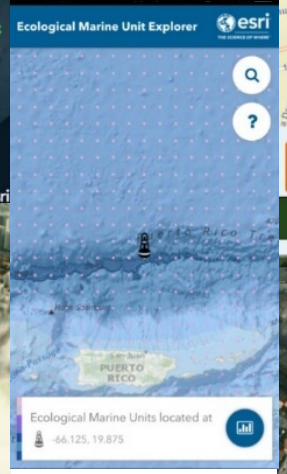

Temperature Profile
Foto af træ

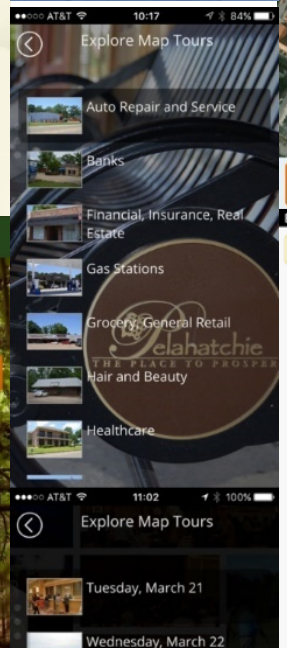


onwani
MY ADDRESS
Easy to find
Registrering af livstræer

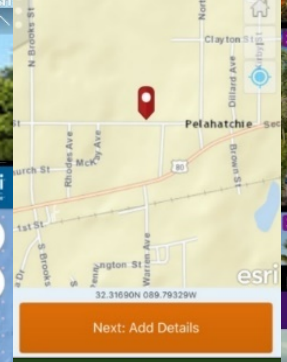
Nyt livstræ
BlueBays

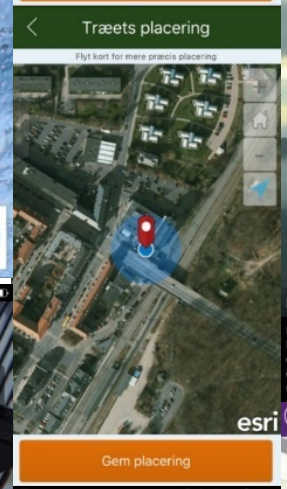
Cerro La Santa

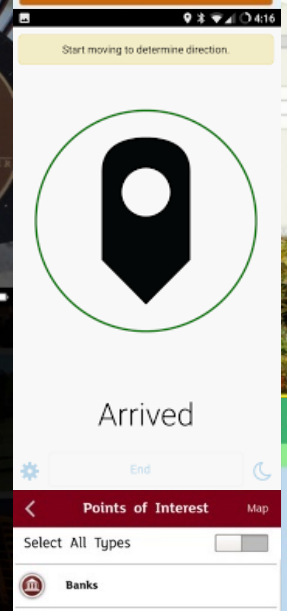

Ecological Marine Unit Explorer
Ecological Marine Units located at


Explore Map Tours
Auto Repair and Service
Banks
Financial, Insurance, Real Estate
Gas Stations
Grocery, General Retail
Hair and Beauty
Healthcare

Explore Map Tours
Tuesday, March 21
Wednesday, March 22
Thursday, March 23
Friday, March 24
Sponsors

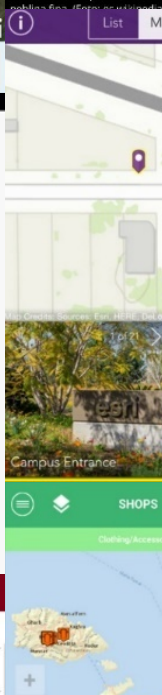

Pelahatchie
Next: Add Details


Træets placering
Gem placering

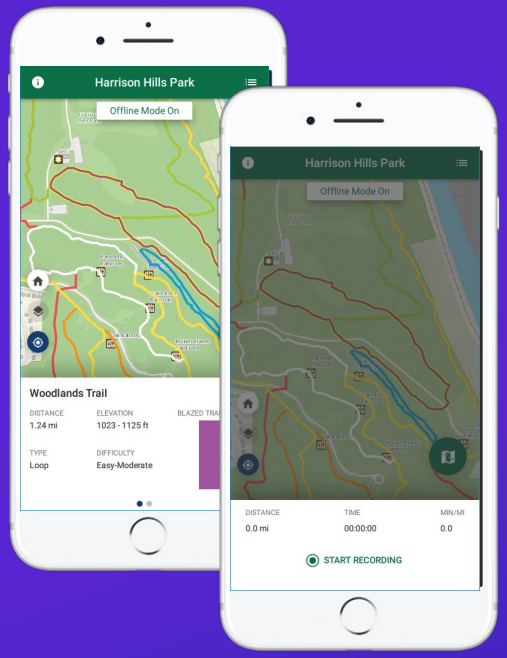

Start moving to determine direction.
Arrived
Points of Interest
Map
Select All Types
Banks

Campus Entrance

List
Pico El Yunque

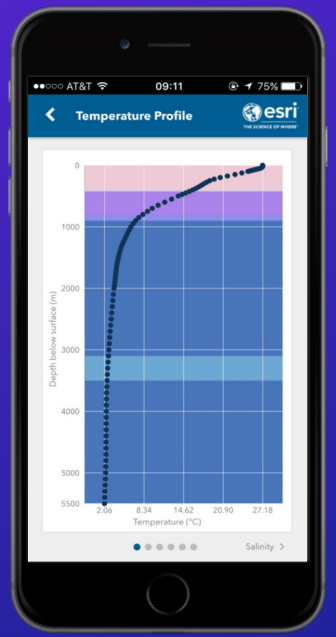

Campus Entrance
SHOPS

Public Information Apps

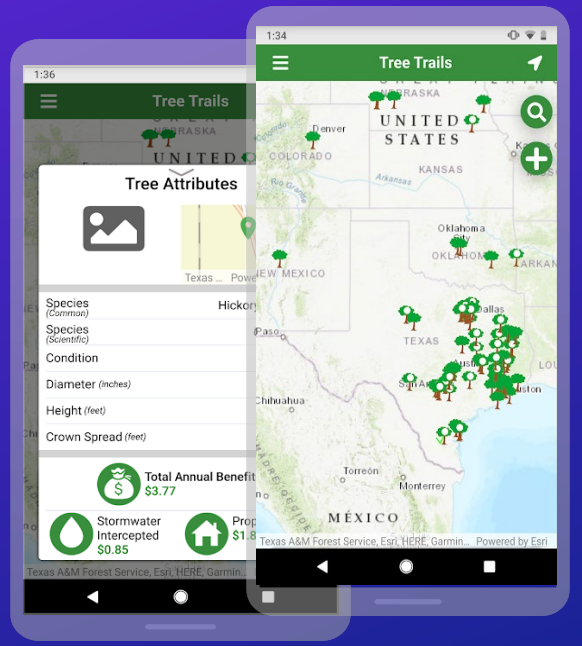


Allegheny County Parks Trails

Fieldays

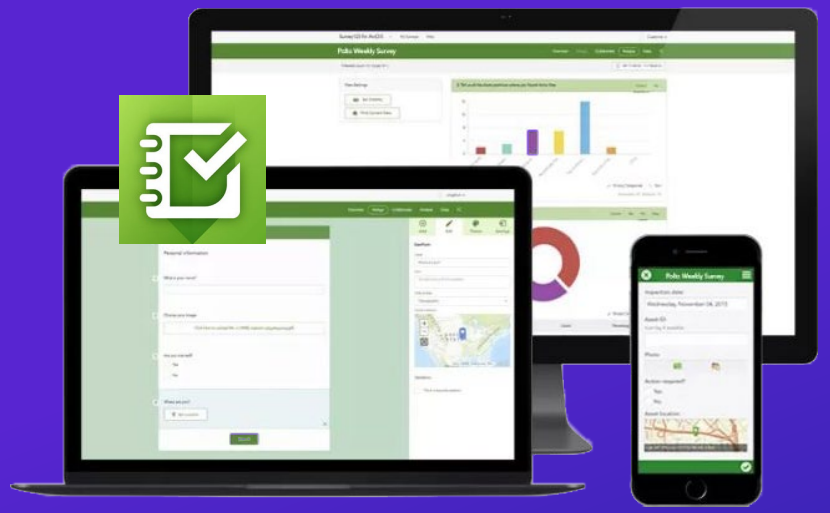


Ecological Marine Unit



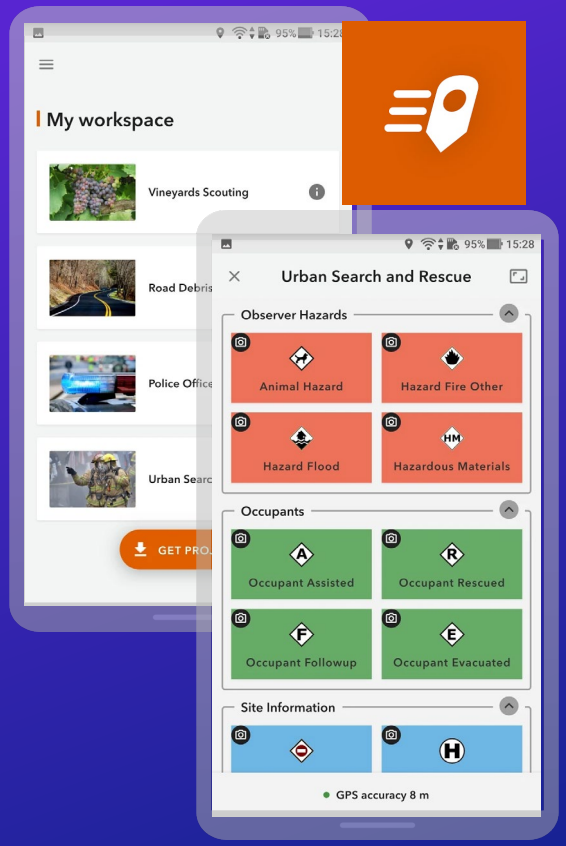
Tree Trails

Data Collection Apps

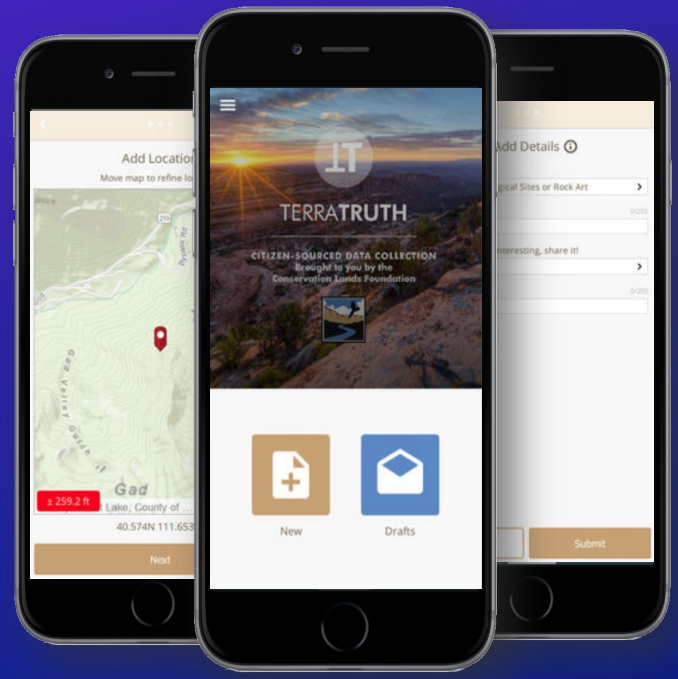


Survey123

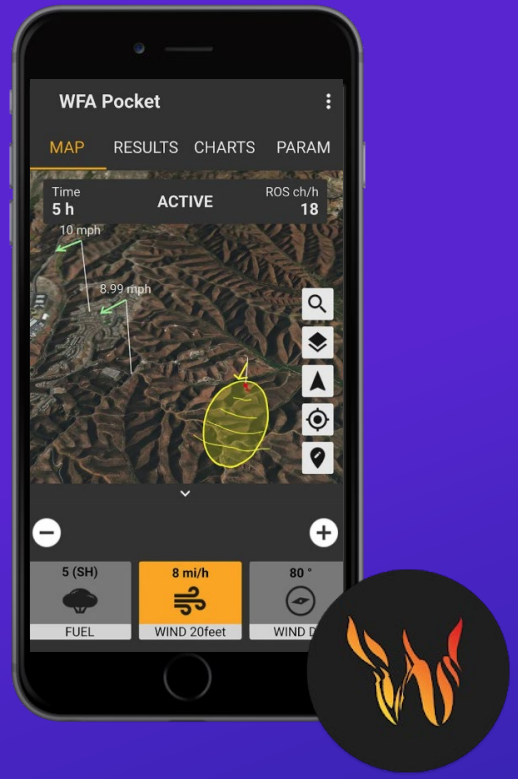
QuickCapture



TERRA**TRUTH**

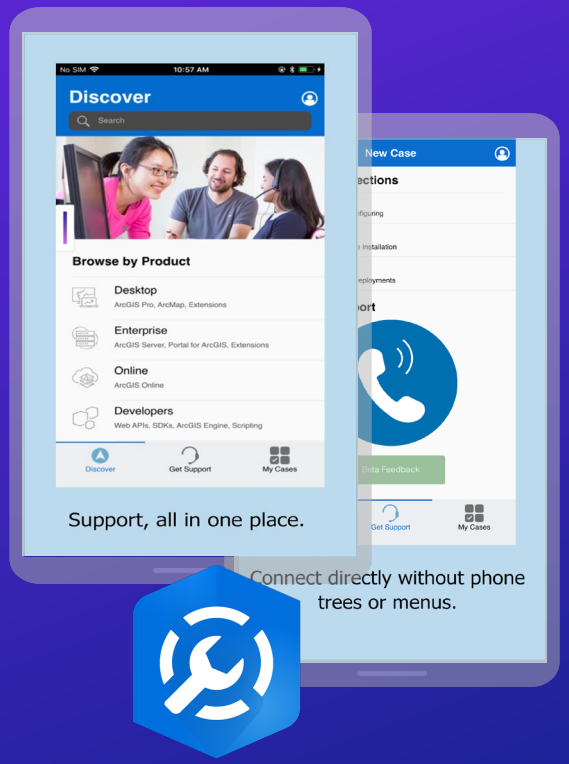


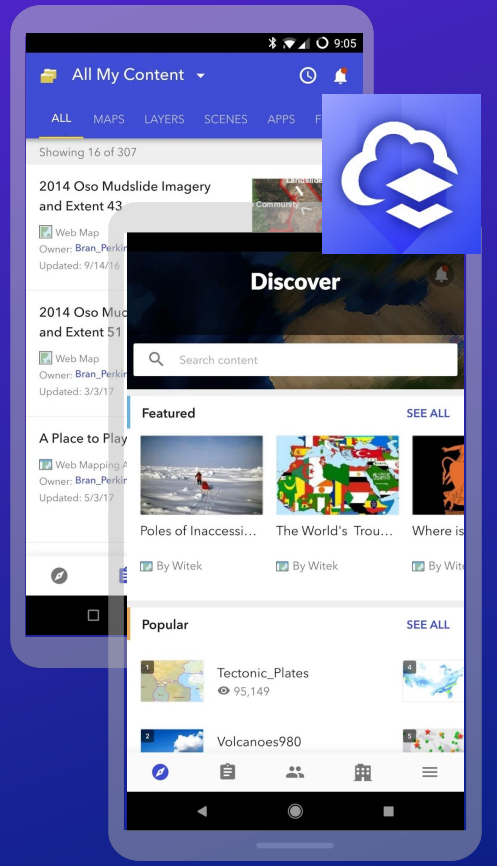
Business Apps



Wildfire Analyst Pocket

Esri Support

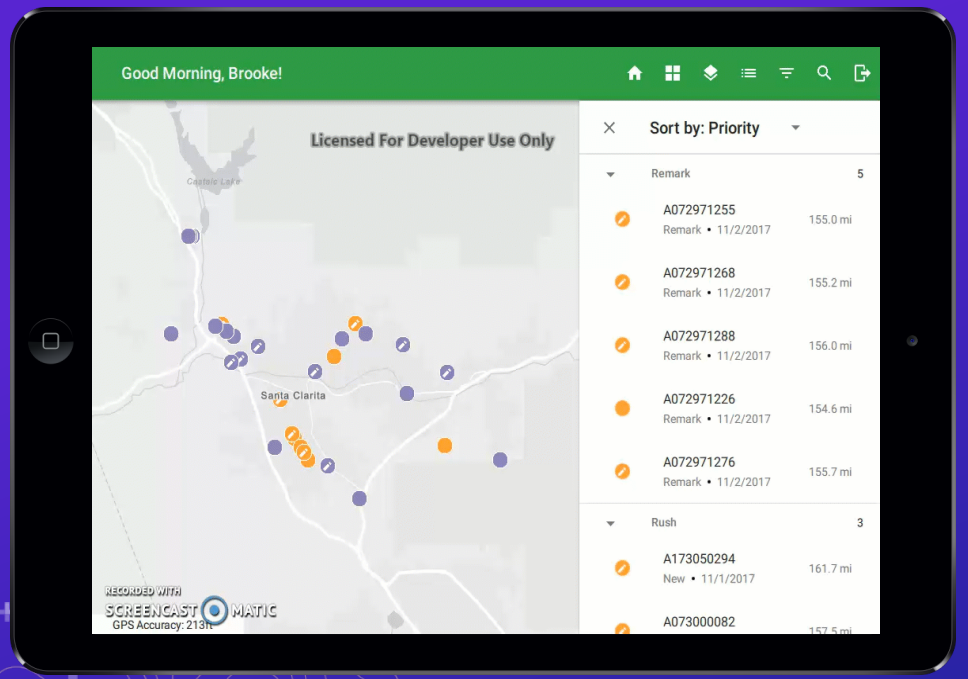




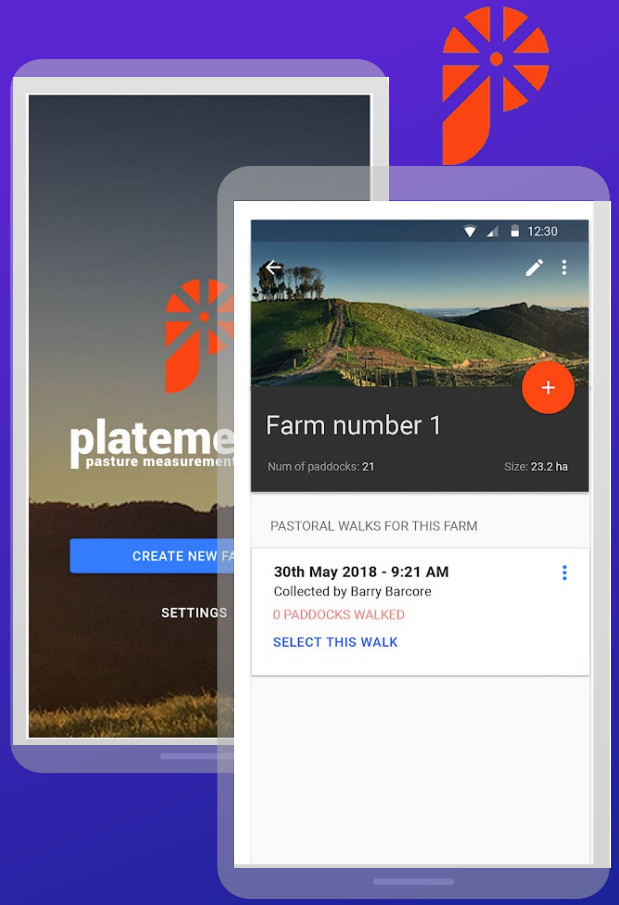
ArcGIS Companion

Enterprise Apps

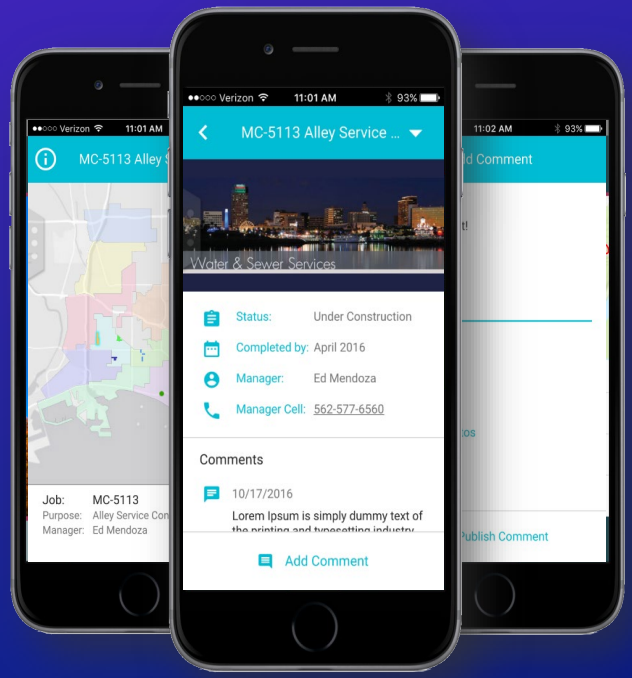
Dig Alert



Platemeters

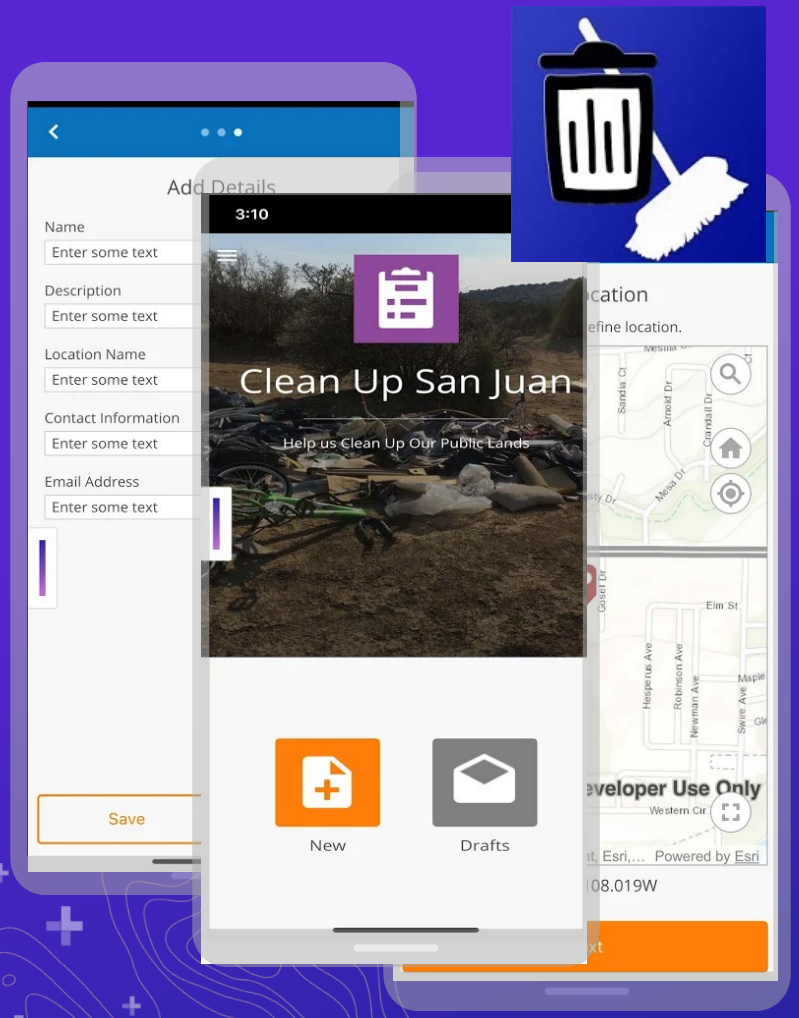


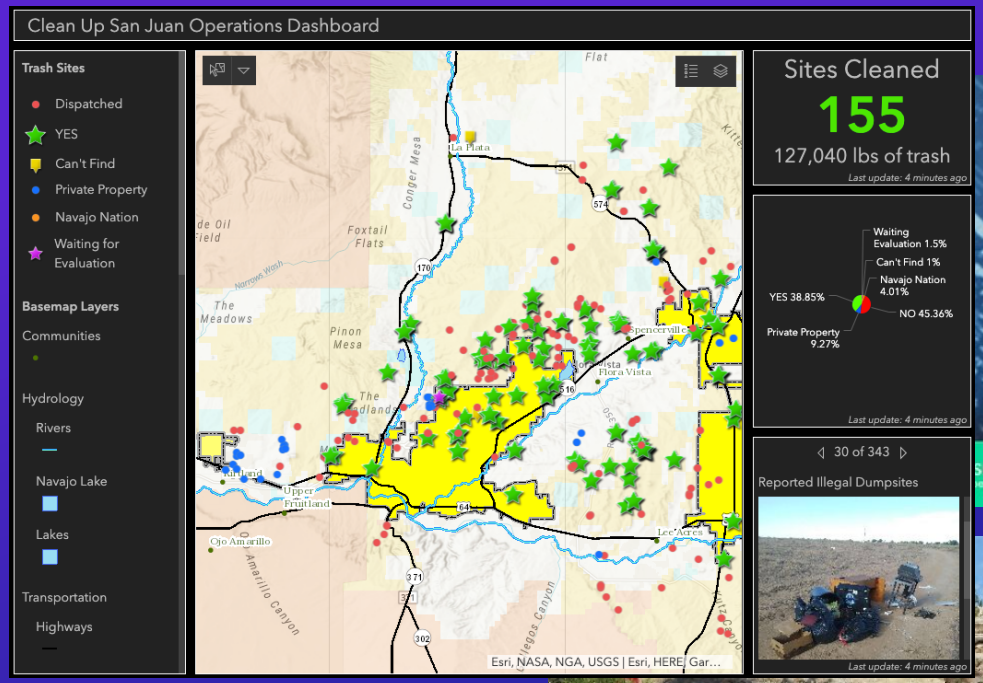
LBW Construction



Success Story

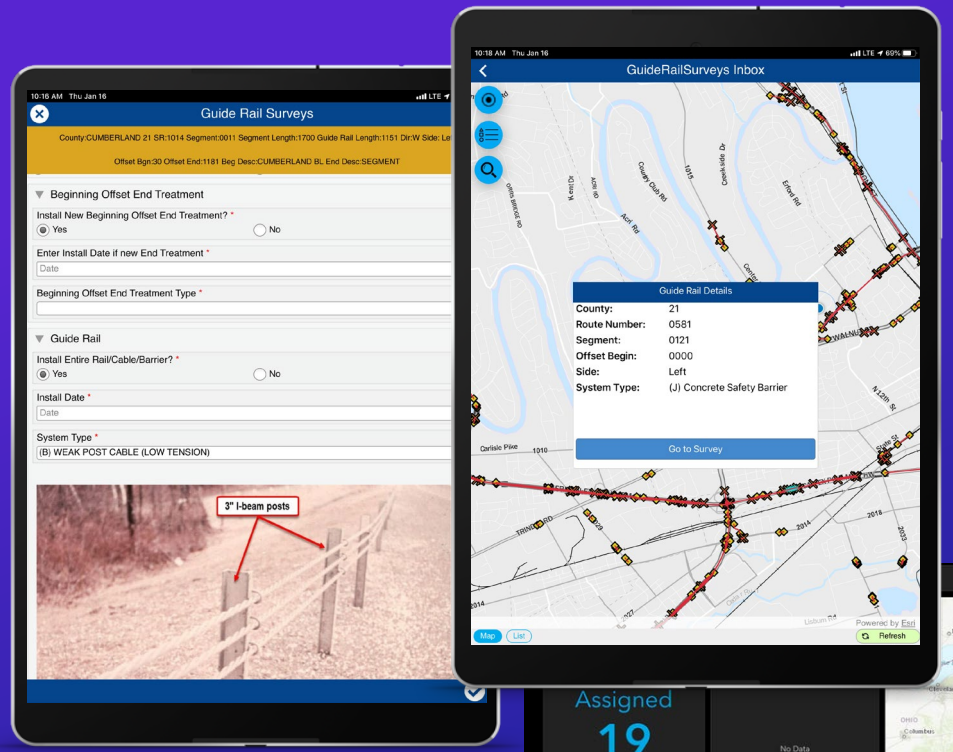
San Juan County, NM

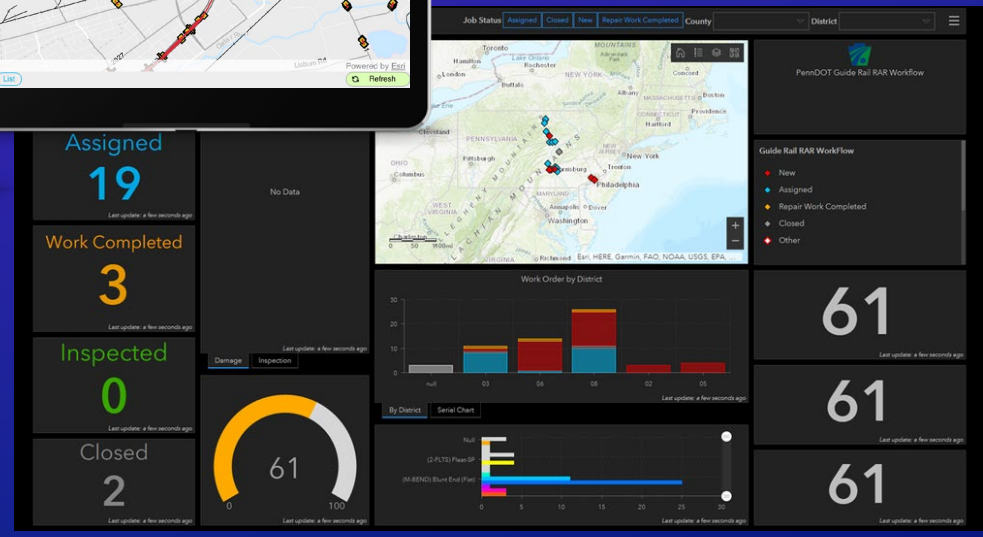




Success Story

PennDOT Guide Rail Management





- Built by GeoDecisions (Esri Partner)
- Custom version of Survey123
- Data is pushed to Roadway Management System

Developing Story

Earth Challenge 2020 App

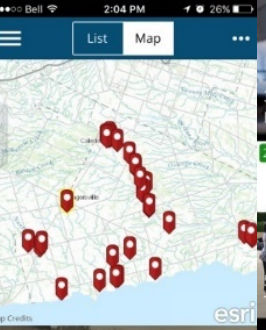
- Campaign from Earth Day Network
- Flexible Citizen Science App
- Developed by GeoMarvel (Esri Partner)
- Custom version of AppStudio Player

GEOMARVEL

DEPARTMENT OF STATE UNITED STATES OF AMERICA

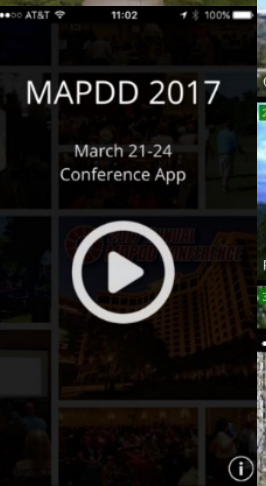
EARTH DAY NETWORK

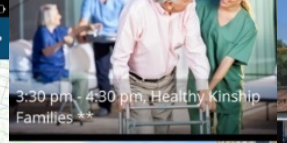
Wilson Center


List
Map

Hagersville Farmers Market

GRIFFITH ON THE GO
Phone Numbers
Events Calendar
Facebook
Report Problems
Code Violation Descriptions


MAPDD 2017
March 21-24
Conference App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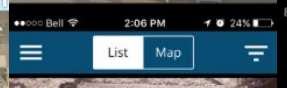
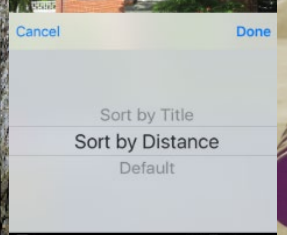

Registry Office

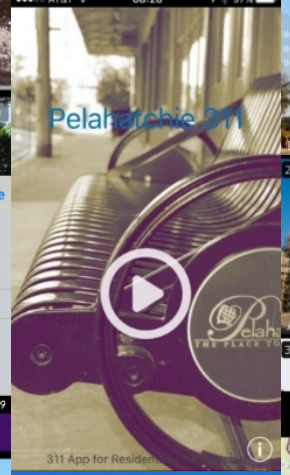

Cancel
Done
Sort by Title
Sort by Distance
Default
List
Map

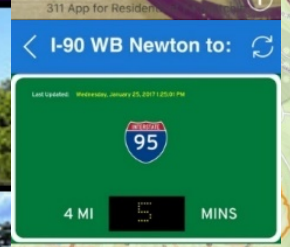
Cerro La Santa

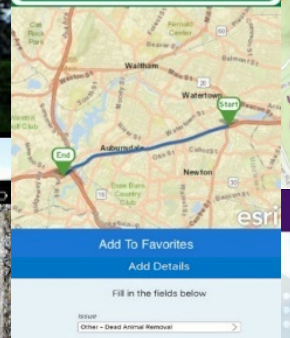
Peña La Francia

Griffith Phone Directory

Don Davis Sales & Service
807 Highway 80 East 601-854-8242


Pelahatchie 311
311 App for Residents


I-90 WB Newton to:
95
4 MI
5
MINS


Add To Favorites
Add Details
Fill in the fields below

Lock & Dam # 5 Oneida (Caledonia)

Edinburgh Square Heritage and Cultural Centre

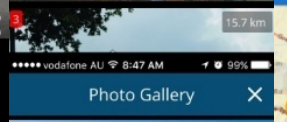
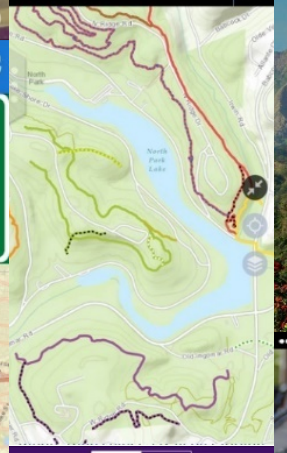


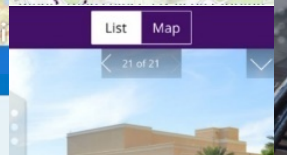
Photo Gallery

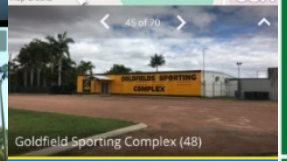
Bagan Temples

Ananda Temple

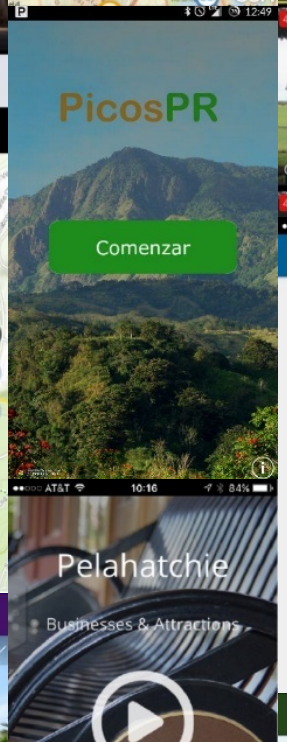
North Park




List
Map

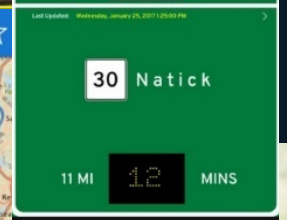

Goldfield Sporting Complex (48)

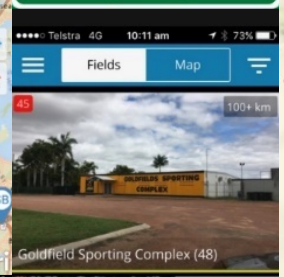
GoTime

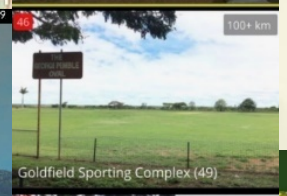

PicosPR
Comenzar

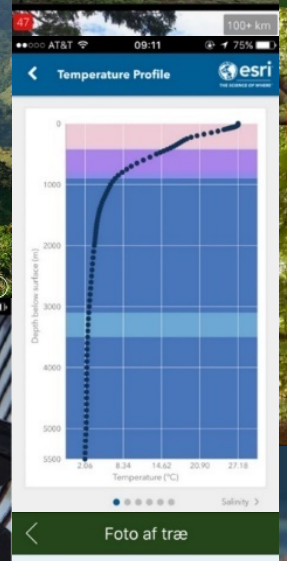
Pelahatchie
Businesses & Attractions

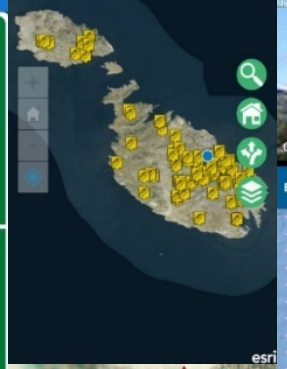
95
4 MI
5
MINS


30
Natick
11 MI
12
MINS


Fields
Map
Goldfield Sporting Complex (48)


Goldfield Sporting Complex (49)

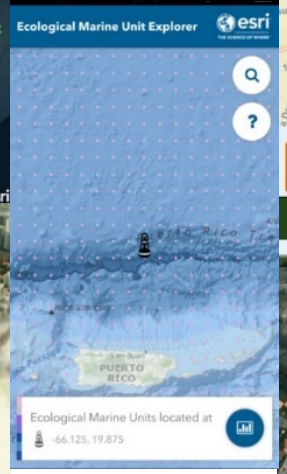

Temperature Profile
Foto af træ

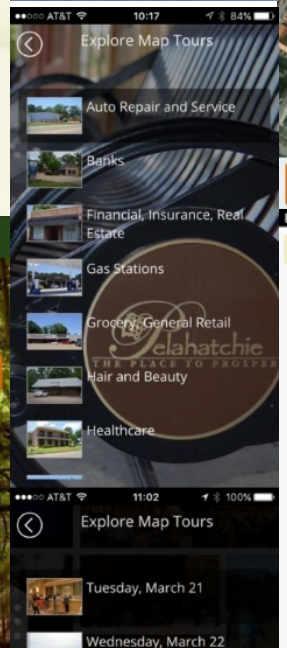


onwani
MY ADDRESS
Easy to find
Registrering af livstræer

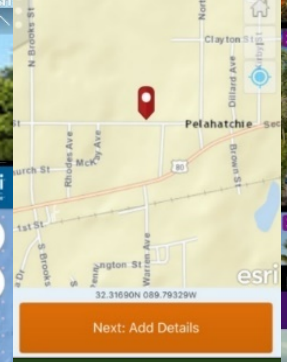
Nyt livstræ
BlueBays

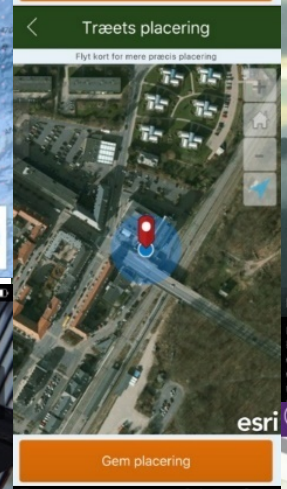
Cerro La Santa

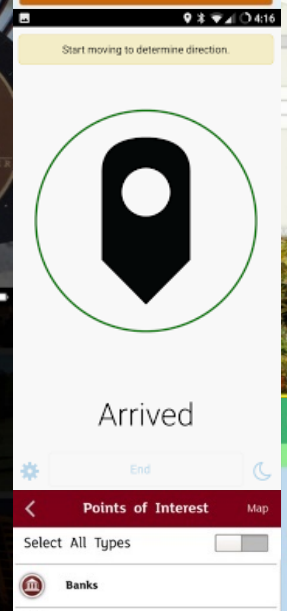

Ecological Marine Unit Explorer
Ecological Marine Units located at


Explore Map Tours
Auto Repair and Service
Banks
Financial, Insurance, Real Estate
Gas Stations
Grocery, General Retail
Hair and Beauty
Healthcare

Explore Map Tours
Tuesday, March 21
Wednesday, March 22
Thursday, March 23
Friday, March 24
Sponsors

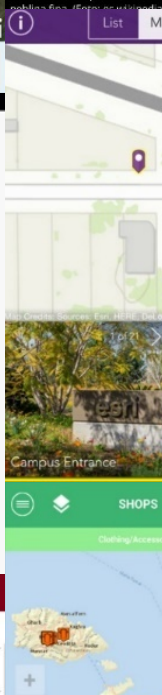

Pelahatchie
Next: Add Details


Træets placering
Gem placering


Start moving to determine direction.
Arrived
Points of Interest
Map
Select All Types
Banks

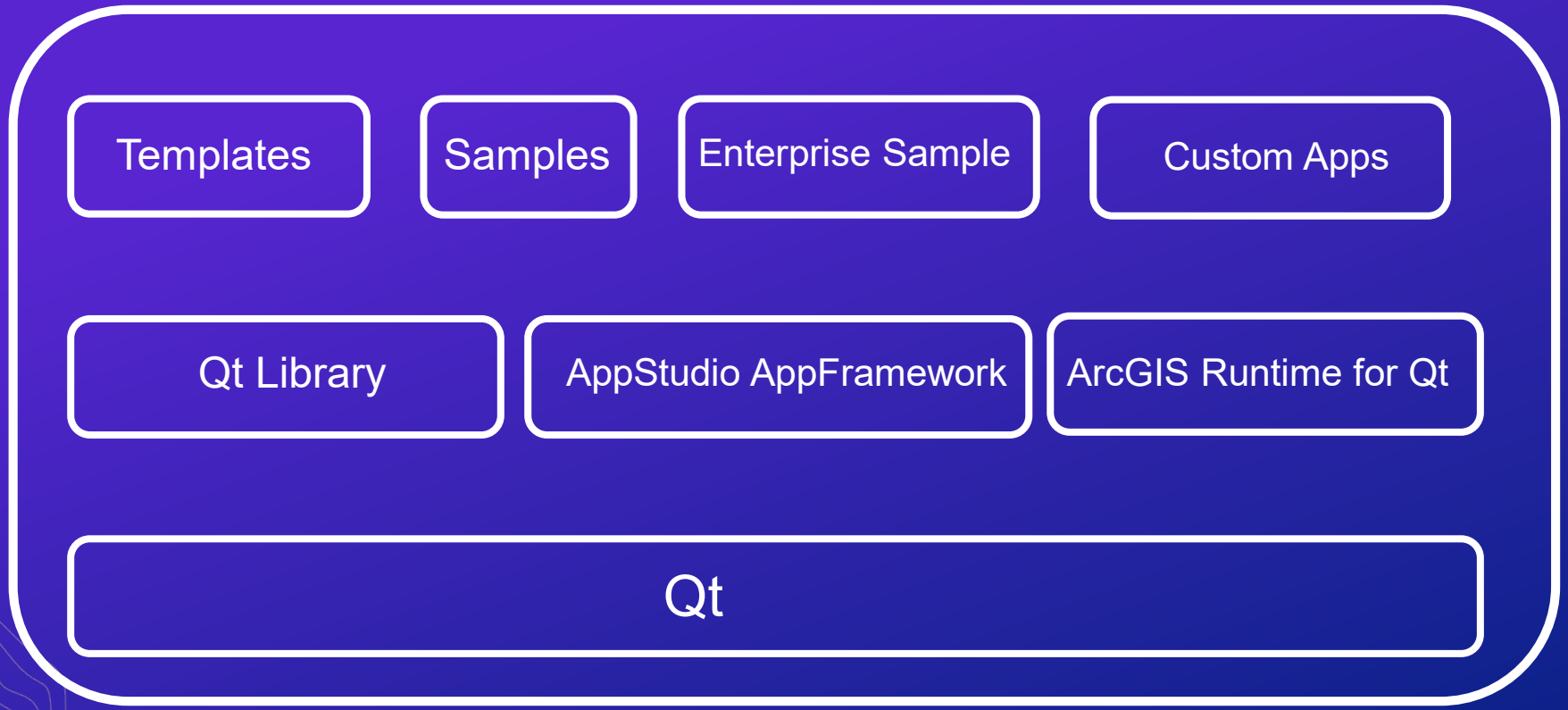
Campus Entrance

List
Pico El Yunque


Campus Entrance
SHOPS

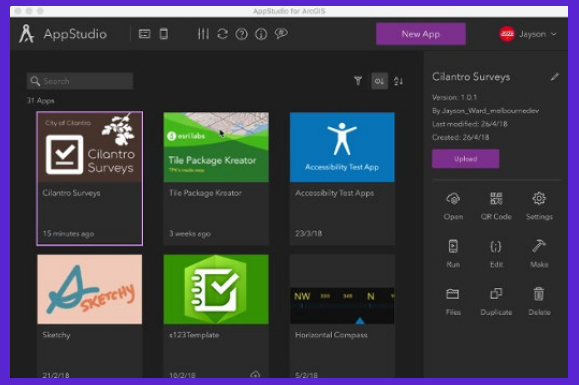
A Tour of AppStudio

AppStudio Architecture



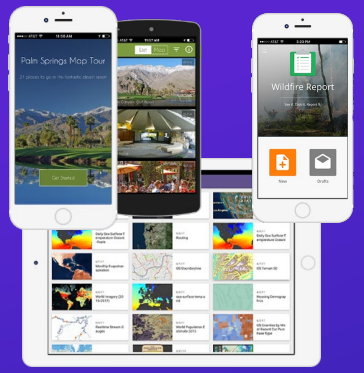
AppStudio Architecture

The AppStudio suite of productivity tools



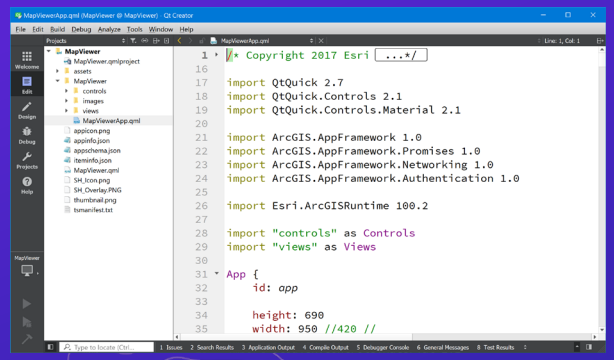
AppStudio Desktop

Interactive Samples

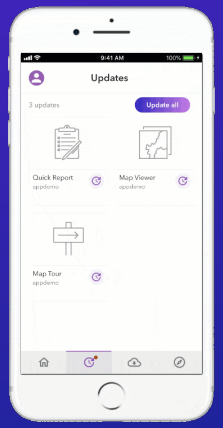


Configurable Templates

Advanced Templates

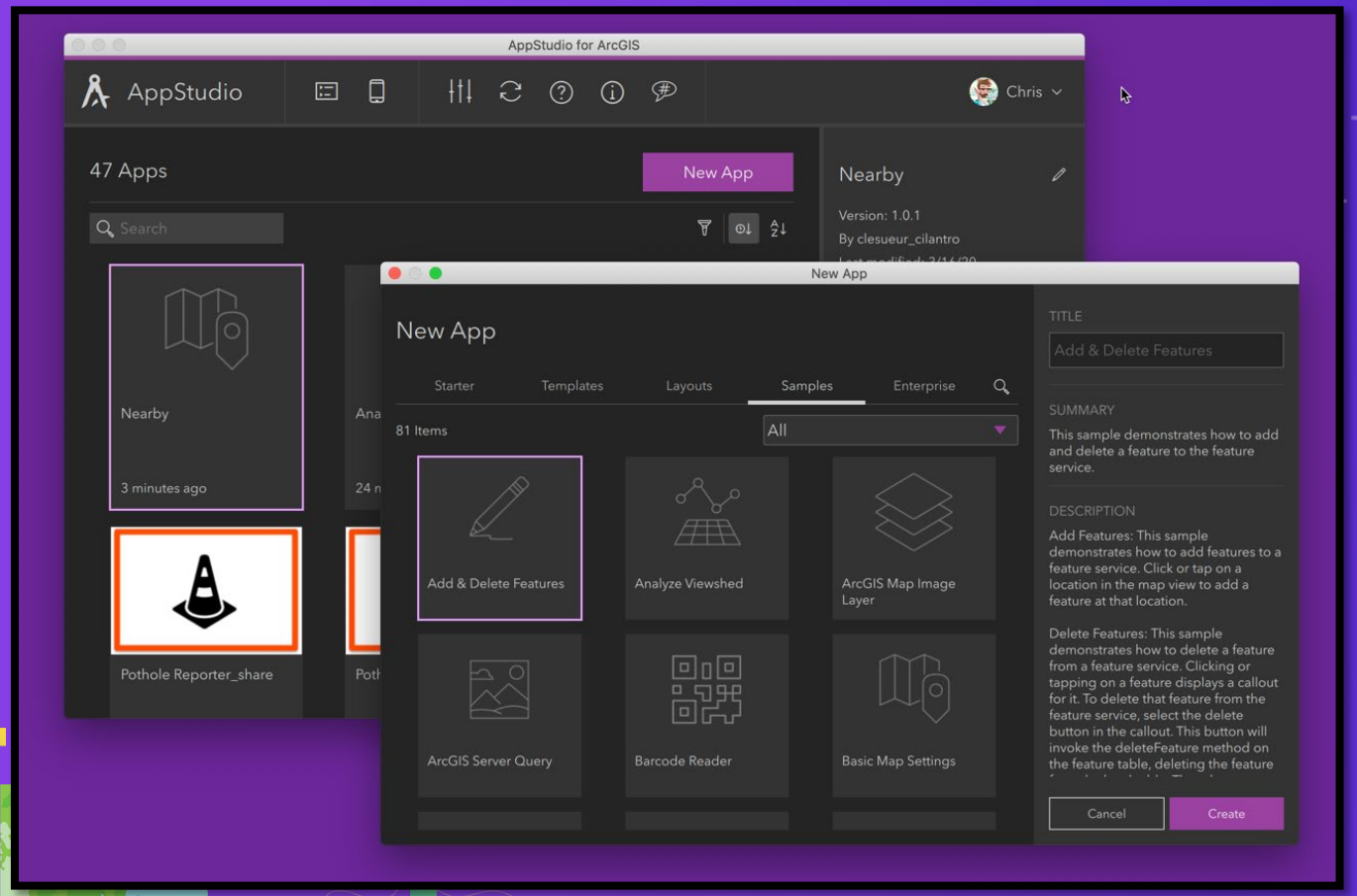


Developer Environment



AppStudio Player

Cloud Make



Tour of AppStudio

Erwin Soekianto

Who is using AppStudio

Web GIS User

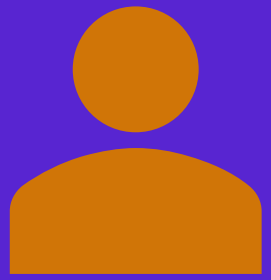
GIS Professional

Python Developers

Web Developers

Application Developers

Who are you?

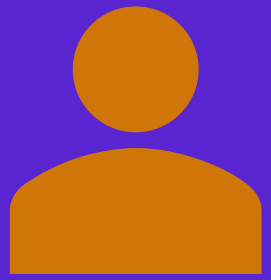


Configurator

Geo Hacker

Code Ninja

Who are you?



Configurator

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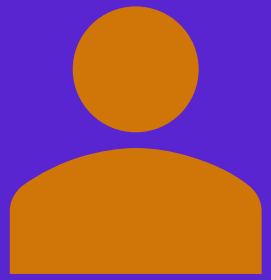
- Have technical skills
- Builds Web Maps
- Creates Web Apps
  - Web AppBuilder
  - Configurable Apps

Geo Hacker

Code Ninja

Who are you?



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- Read/Write HTML
- Dabble in JavaScript
- Copy/Paste Code
- Figure out how to get the job done

Code Ninja

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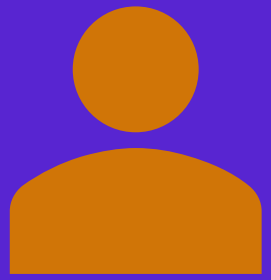

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- Write/Run Python
- Read/Write HTML
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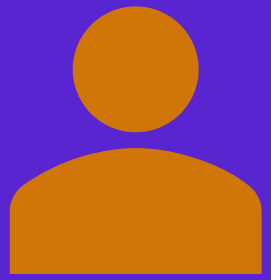
- Figure out how to get the job done

Code Ninja

- Fluent in at least one programming language
- You would rather start from scratch
- Web Developer
- Love reading API documentation

What can you do with AppStudio?



Configurator

Geo Hacker

Code Ninja

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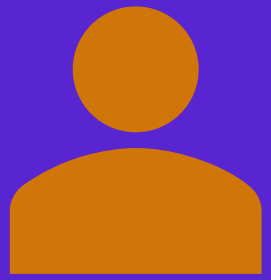


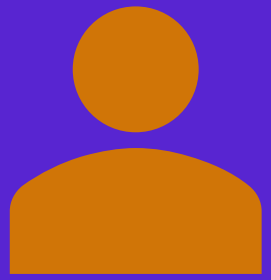
Configurator

- Configure App Templates
  - Add Maps / Data
  - Change Colors
  - Icons/Images
  - Fonts
  - Add Settings
- Test on devices
- Share with coworkers
- Publish to App Stores

Geo Hacker

Code Ninja

What can you do with AppStudio?



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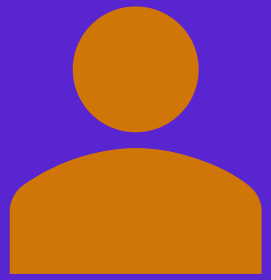
Geo Hacker

- Extend App Templates
- Use Sample Code
- Add New Functionality
- Use App Layouts

Code Ninja

What can you do with AppStudio?



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  - Add Settings
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Geo Hacker

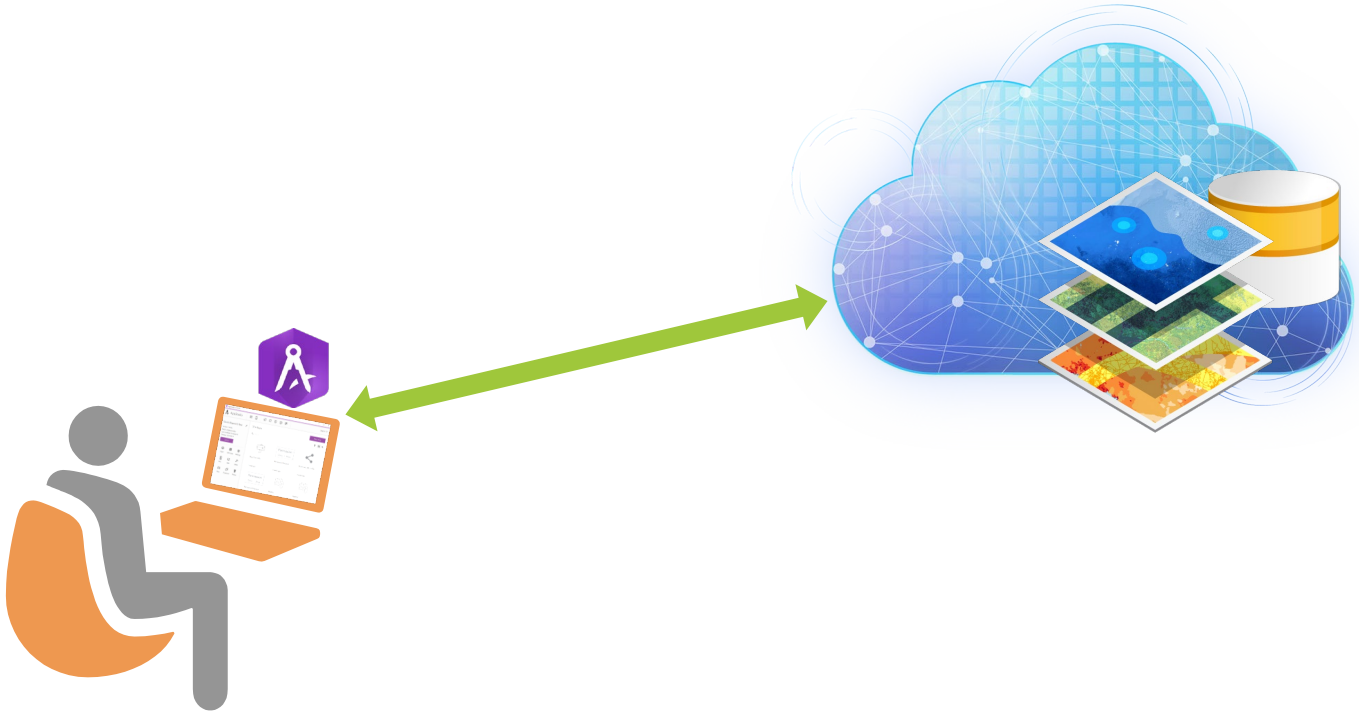
- Extend App Templates
- Use Sample Code
- Add New Functionality
- Use App Layouts

Code Ninja

- Create Apps from scratch
- Integrate with hardware
- Custom Components
- Extend Enterprise Templates

Deploying AppStudio Apps

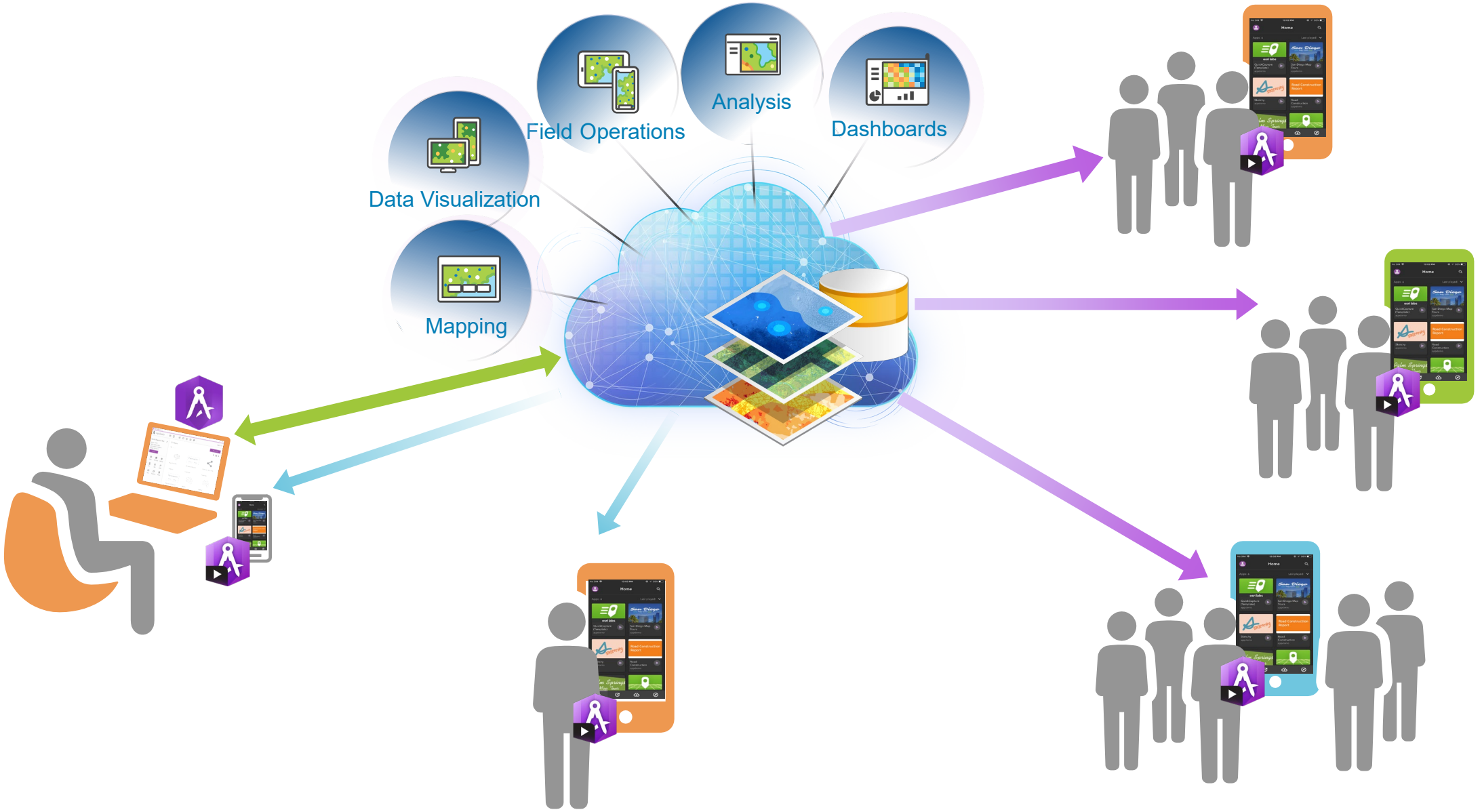
Publishing Apps to App Stores

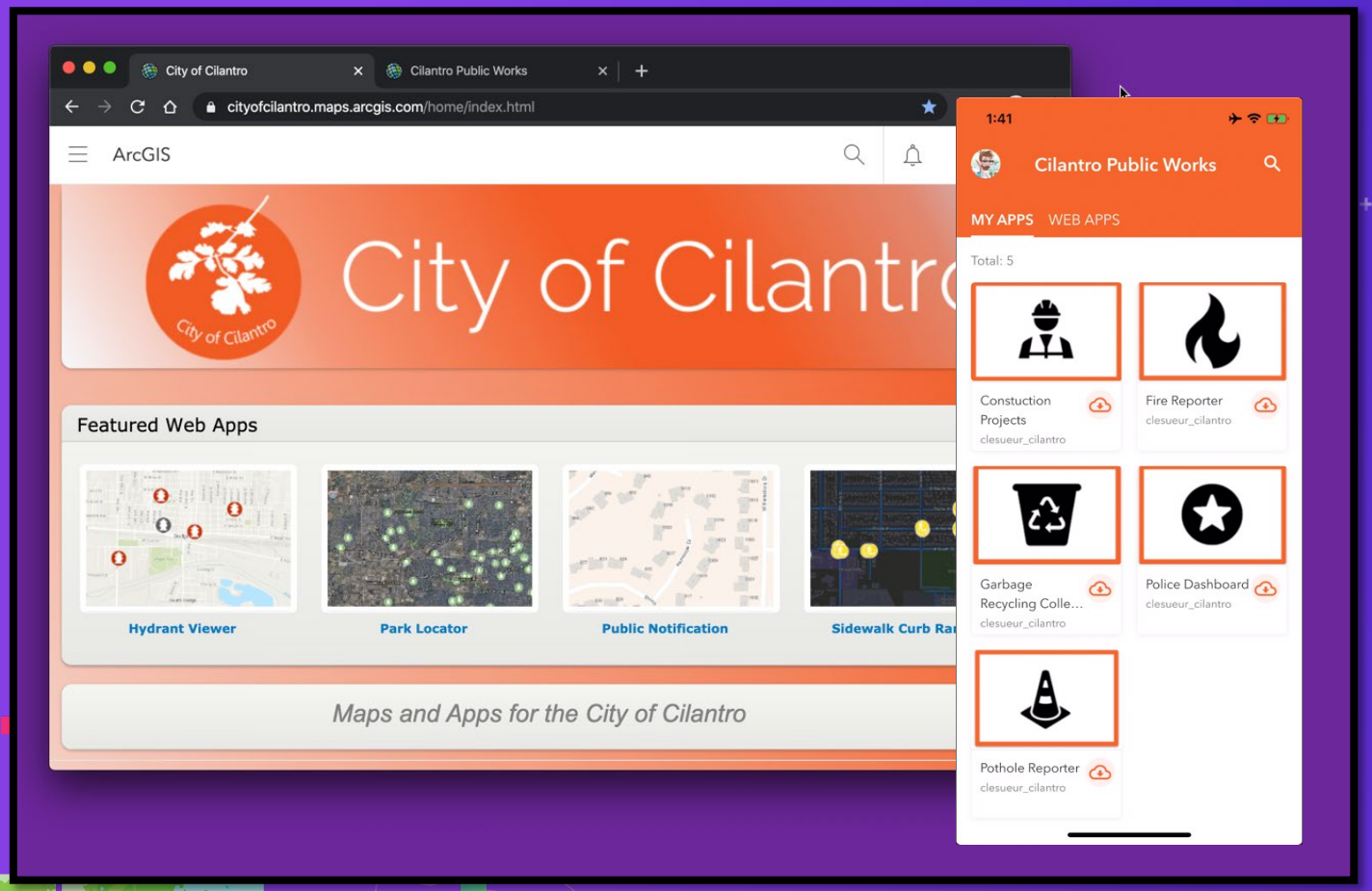


Publishing Apps to App Stores

Publishing Apps to App Stores

Deploying Apps to the Enterprise w/ AppStudio Player



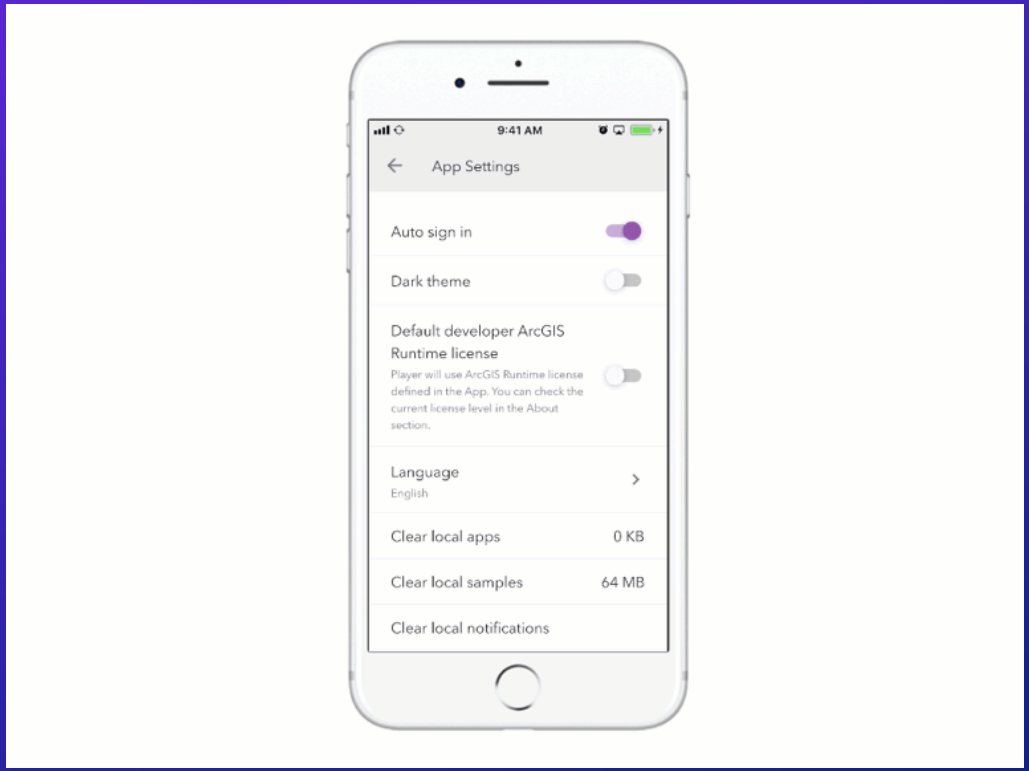


Deploying Apps with AppStudio Player

Erwin Soekianto
Chris LeSueur

AppStudio Player Enhancements

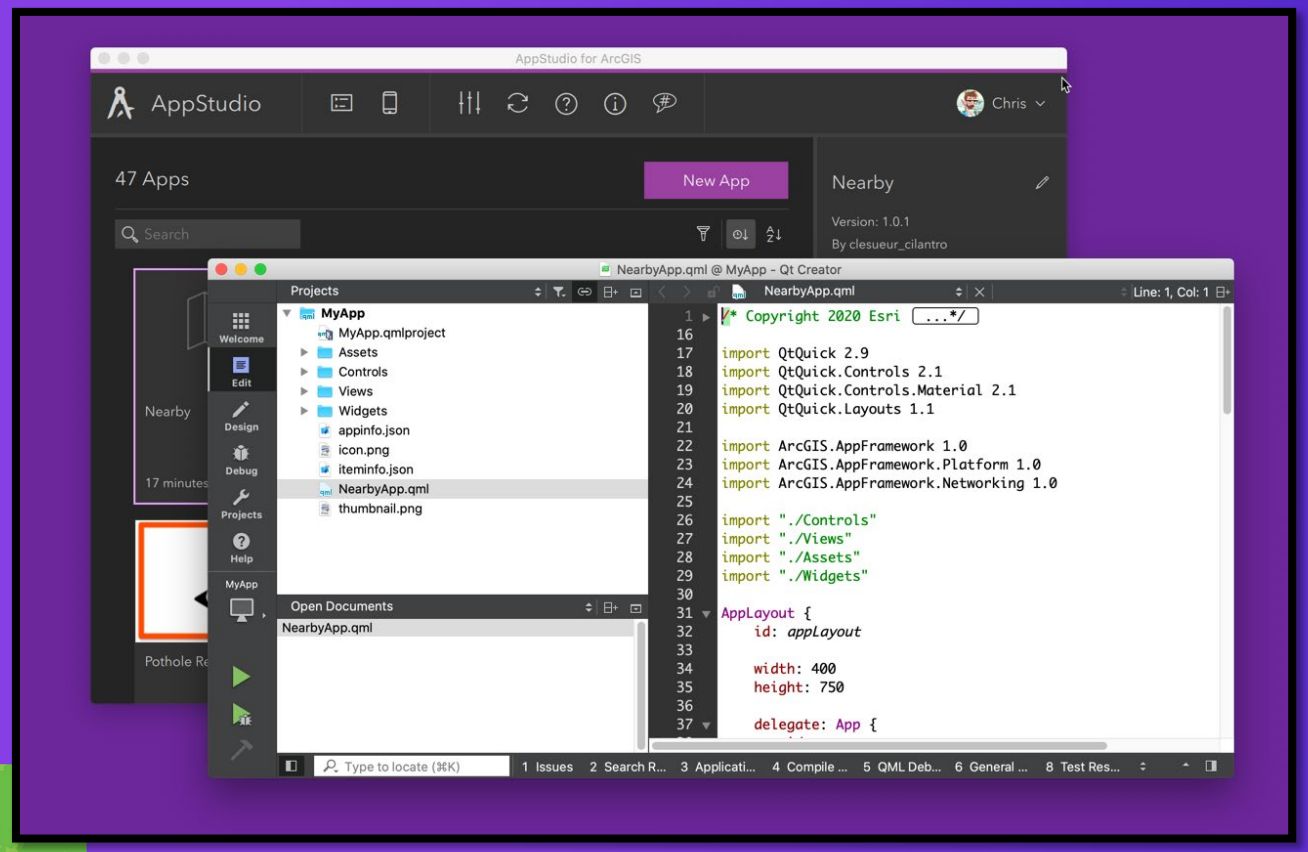
- Configure Custom Experience
- New app user profiles
- Run Web Apps in Player



Customizing Apps with Code

What is QML?

- Declarative Language Designed to Build Apps
- QML is used Define the User Interface (Similar to CSS)
- JavaScript is used to business logic (events, functions)



Customizing with QML and JavaScript

Erwin Soekianto

How do you get AppStudio?

How to get AppStudio

	User Types				
	Viewer	Editor	Field Worker	Creator	GIS Professional

How to get AppStudio

	User Types				
	Viewer	Editor	Field Worker	Creator	GIS Professional
AppStudio Player • Download Apps • Run Apps	✓	✓	✓	✓	✓

How to get AppStudio

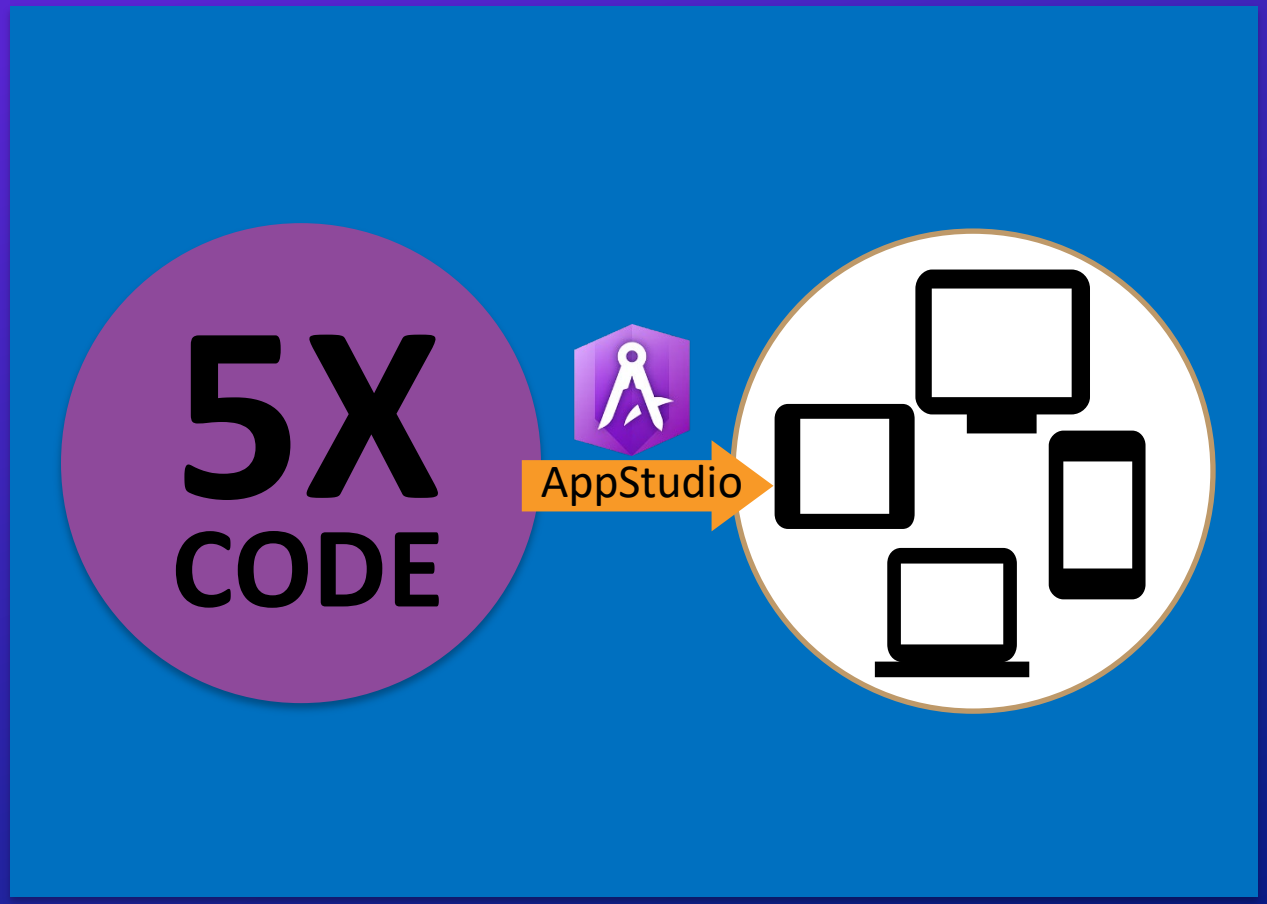
	User Types				
	Viewer	Editor	Field Worker	Creator	GIS Professional
AppStudio Player • Download Apps • Run Apps	✓	✓	✓	✓	✓
AppStudio for ArcGIS • Desktop Tools • Configure Apps • Develop/Code Apps • Share Using Player				✓	✓

How to get AppStudio

	User Types					
	Viewer	Editor	Field Worker	Creator	GIS Professional	Paid Developer Subscription
AppStudio Player • Download Apps • Run Apps	✓	✓	✓	✓	✓	✓
AppStudio for ArcGIS • Desktop Tools • Configure Apps • Develop/Code Apps • Share Using Player				✓	✓	✓
AppStudio Developer Edition • CloudMake • Publish to App Stores • Advanced Templates						✓

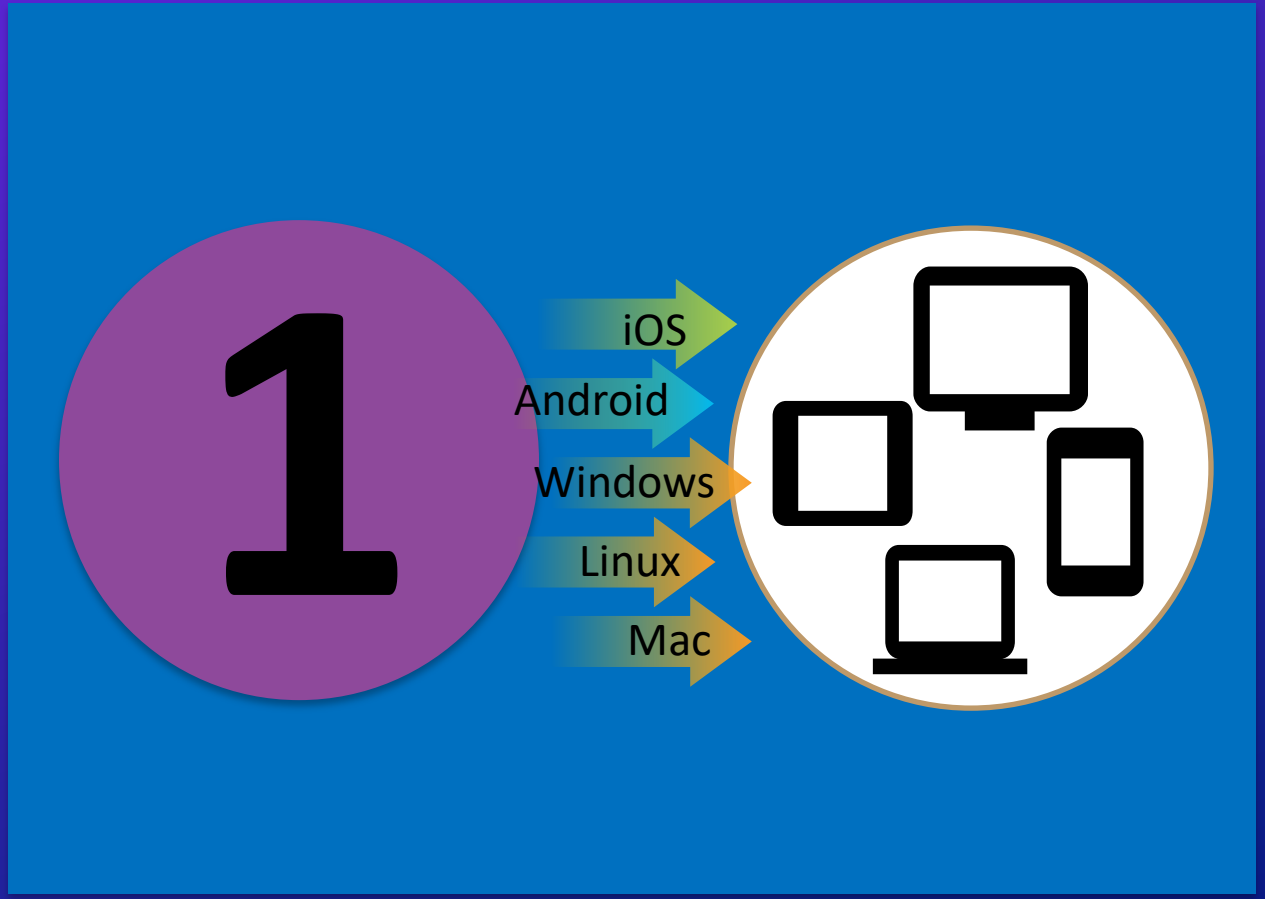
Challenges of Native App Development

- Time and Cost
- App Distribution
- App Security
- App Maintenance and Updates



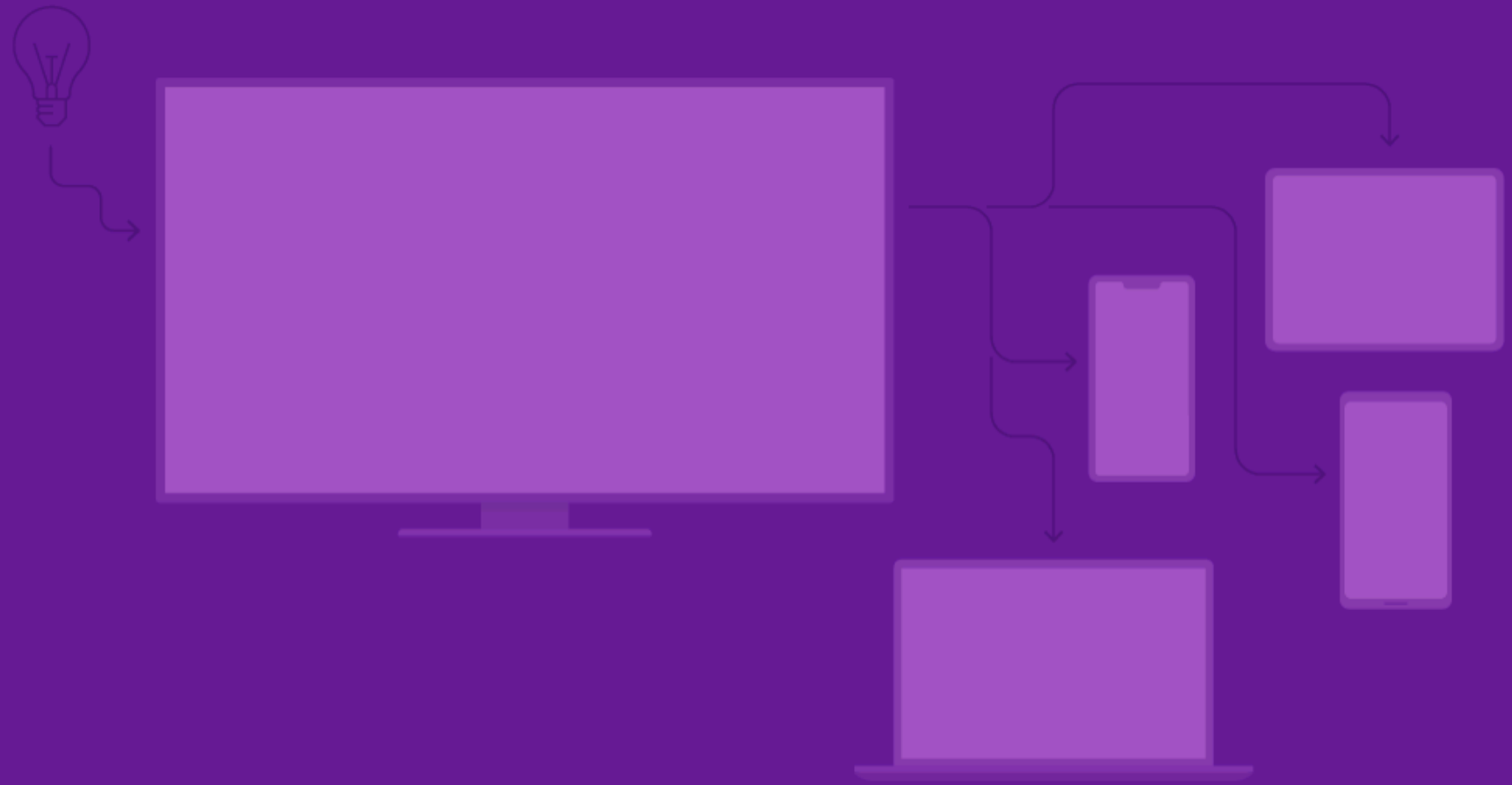
Advantages of AppStudio Development

- Reduced Time and Cost
- Flexible App Distribution
- ArcGIS Users and App Security
- Cross-Platform App Updates



AppStudio

for ArcGIS



Thank You!