



# MOBILE APPS WITH THE IONIC FRAMEWORK

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@robertlair

# SESSION GOALS

- ✓ What is the Ionic Framework?
- ✓ How do I setup an Ionic development environment?
- ✓ How are Ionic applications built?
- ✓ How is native functionality added to Ionic apps?
- ✓ How do I prepare and deploy Ionic apps?

# WHAT IS IONIC?

- ✓ Build Mobile Apps with Web Technologies
- ✓ A Single Codebase for all platforms
- ✓ Open Source Technology, Completely Free to Use
- ✓ Outputs Hybrid Mobile Apps that closely resemble native apps
- ✓ Access to Native Capabilities of Devices

# WHAT MAKES UP IONIC?

- ✓ Ionic CLI
- ✓ Library of Web Components that look and feel native
- ✓ Capacitor for Access to Native Functionality

# HISTORY OF IONIC

- ✔ Original version released in 2013
- ✔ Version 1 - 3 based on Angular & Apache Cordova
- ✔ Version 4 rewritten to be based on Web Components
- ✔ Capacitor being released with Version 4 to replace Cordova
- ✔ Version 4 Expected Early 2019 (Currently RC0)

# **NEW IN VERSION 4 - OPTIONS!**

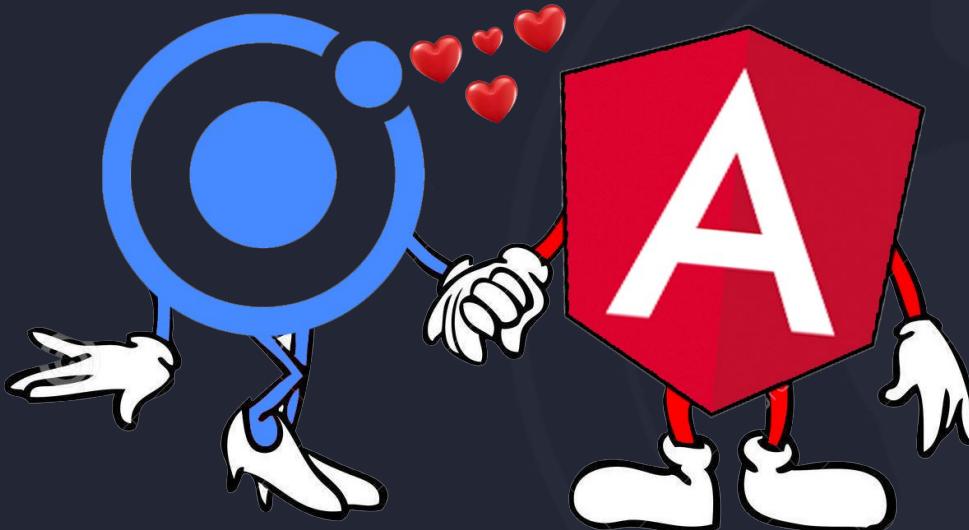
**YOU MUST CHOOSE**

**...BUT CHOOSE WISELY**



# IONIC ANGULAR

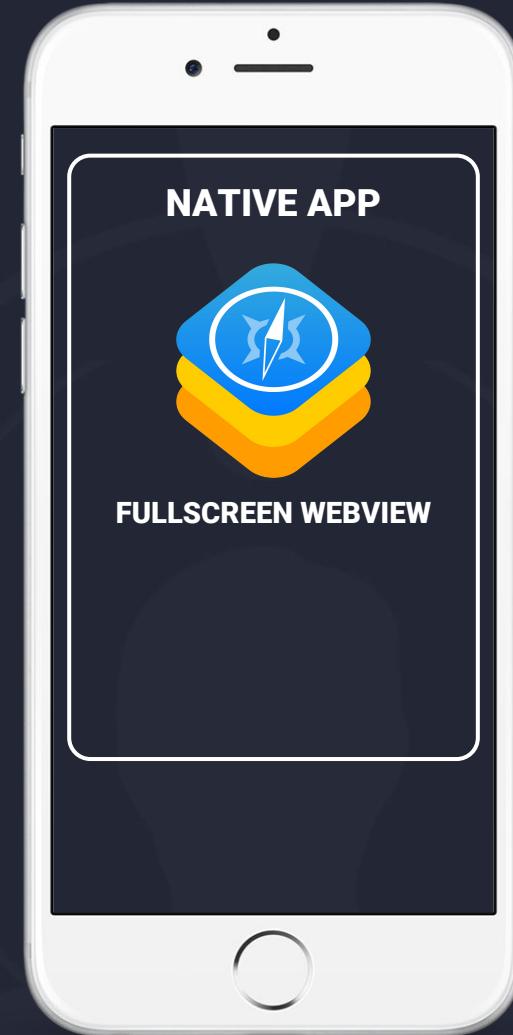
Other frameworks now possible, but Angular still better supported



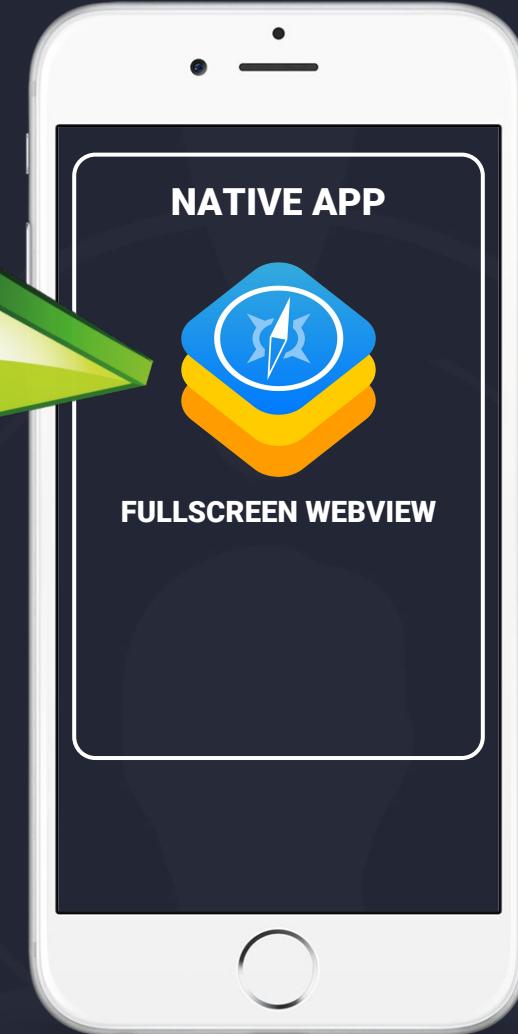
# HYBRID MOBILE APPS



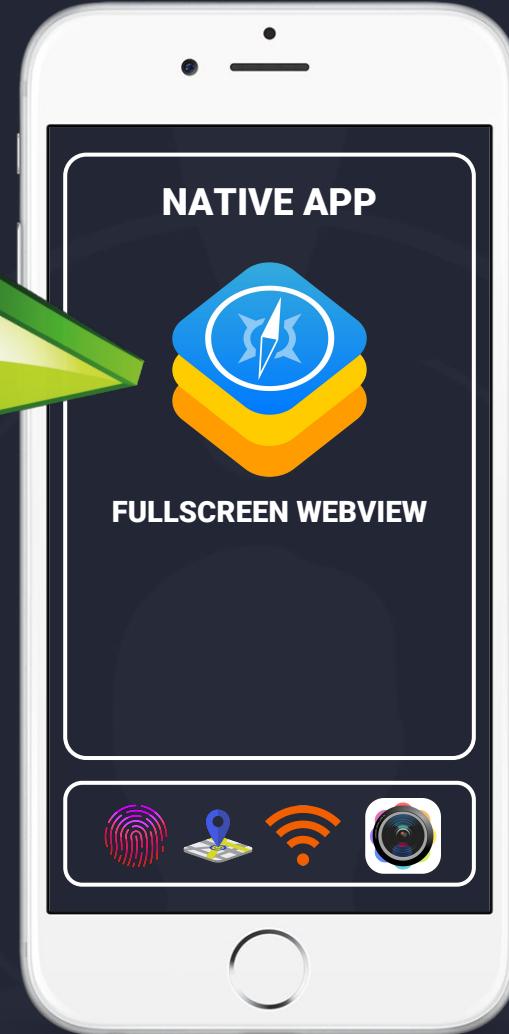
# HYBRID MOBILE APPS



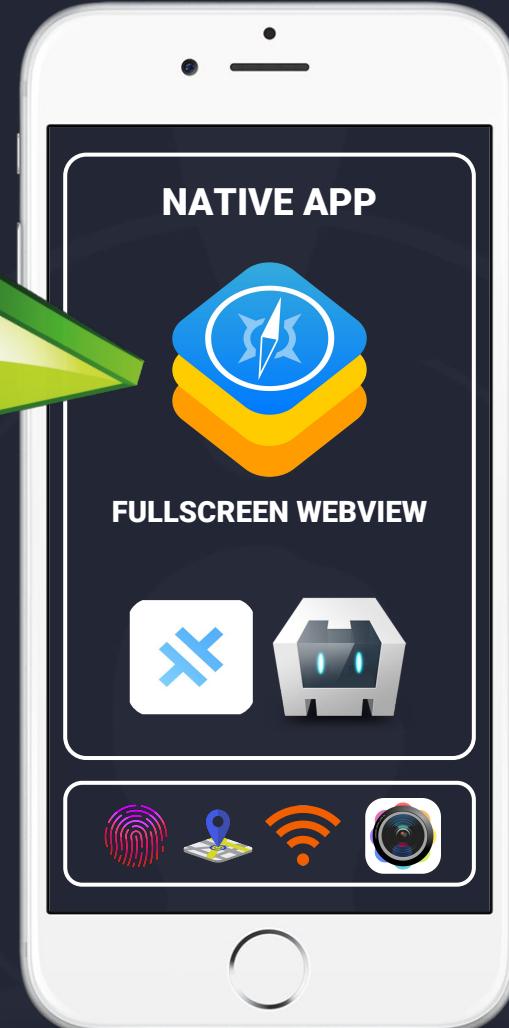
# HYBRID MOBILE APPS



# HYBRID MOBILE APPS



# HYBRID MOBILE APPS



# BEST TYPE OF APPS FOR IONIC

- ✓ CRUD Apps
- ✓ Business Apps
- ✗ Graphically Intense Apps
- ✗ Games

# IONIC DEV ENVIRONMENT

# PRE-REQS



Latest LTS



For iOS  
Deployment



For Android  
Deployment

# INSTALLING IONIC CLI

```
$ npm install -g ionic
```

# VISUAL STUDIO CODE



**Cordova Tools** vsmobile.cordova-tools

Visual Studio Mobile Tools | ⚡ 795,040 | ★★★★★ | Repository | License

Code-hinting, debugging and integrated commands for Apache Cordova (PhoneGap). With added support for the Ionic Framework.

[Disable](#) [Uninstall](#)

**Angular v7 Snippets** johnpapa.angular2

John Papa | ⚡ 4,610,509 | ★★★★★ | Repository | License

Angular v7 snippets by John Papa

[Disable](#) [Uninstall](#)

*This extension is recommended because you have Angular CLI installed.* [Ignore Recommendation](#)

**Angular Language Service** angular.ng-template

Angular | ⚡ 1,315,720 | ★★★★★ | Repository

Editor services for Angular templates

[Disable](#) [Uninstall](#)

**TSLint** eg2 tslint

egamma | ⚡ 10,863,955 | ★★★★★ | Repository | License

TSLint for Visual Studio Code

[Reload to Update](#) [Disable](#) [Uninstall](#)

# IONIC CLI

# IONIC CLI

ionic --help

**ionic <command> --help**

```
CLI 4.6.0

Usage:
$ ionic <command> [<args>] [--help] [--verbose] [--quiet] [--no-interactive] [--no-color] [--confirm] [options]

Global Commands:

config <subcommand> ..... Manage CLI and project config values (subcommands: get, set, unset)
docs ..... Open the Ionic documentation website
info ..... Print project, system, and environment information
init ..... (beta) Initialize existing projects with Ionic
login ..... Login to Ionic Appflow
logout ..... Logout of Ionic Appflow
signup ..... Create an account for Ionic Appflow
ssh <subcommand> ..... Commands for configuring SSH keys (subcommands: add, delete, generate, list, setup, use)
start ..... Create a new project

Project Commands:

build ..... (beta) Build web assets and prepare your app for any platform targets
capacitor <subcommand> ..... (beta) Capacitor functionality (subcommands: add, copy, open, run, sync, update)
(alias: cap)
cordova <subcommand> ..... Cordova functionality (subcommands: build, compile, emulate, platform, plugin, prepare, requirements, resources, run)
doctor <subcommand> ..... Commands for checking the health of your Ionic project (subcommands: check, list, treat)
generate ..... (beta) Automatically create framework features (alias: g)
git <subcommand> ..... Commands relating to git (subcommands: remote)
integrations <subcommands> ..... Manage various integrations in your app (subcommands: disable, enable, list)
link ..... Connect local apps to Ionic Appflow
repair ..... Remove and recreate dependencies and generated files
serve ..... (beta) Start a local dev server for app dev/testing (alias: s)
ssl <subcommand> ..... (experimental) Commands for managing SSL keys & certificates (subcommands: generate)

roberts-mbp:codeMash2 robertlair$ 
```

# IONIC CLI: START

Creates a new Ionic App

```
$ ionic start <name> <template> [options]
```

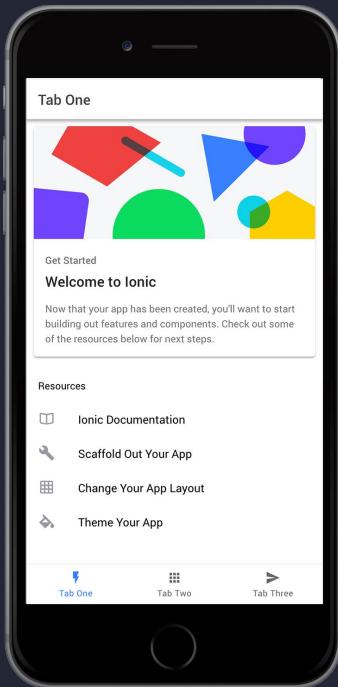
Example:

```
ionic start myApp blank --type=angular  
ionic start myApp sidemenu --type=angular  
ionic start "My App" blank --type=angular
```

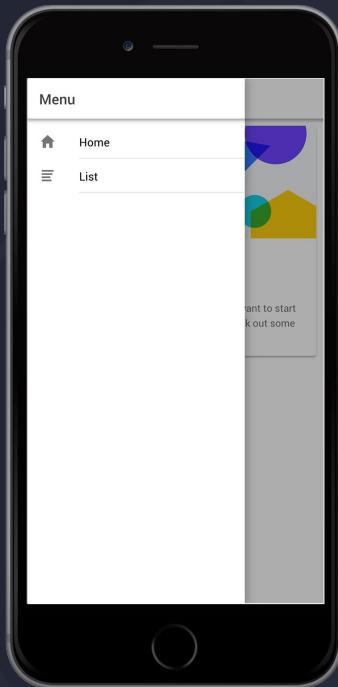
# STARTER TEMPLATES



blank



tabs



sidemenu

# IONIC CLI: GENERATE

Uses the Angular CLI to generate features such as pages, components, directives, services, etc.

```
$ ionic generate <type> <name>
```

Example:

```
ionic generate page pages/sessionDetail  
ionic g service services/sessionData
```

# IONIC CLI: BUILD

Builds web assets and prepares app for any platform targets

```
$ ionic build [options]
```

Example:  
ionic build --prod  
ionic build

# IONIC CLI: SERVE

Starts a local dev server for app testing

```
$ ionic serve [options]
```

Examples:

ionic serve

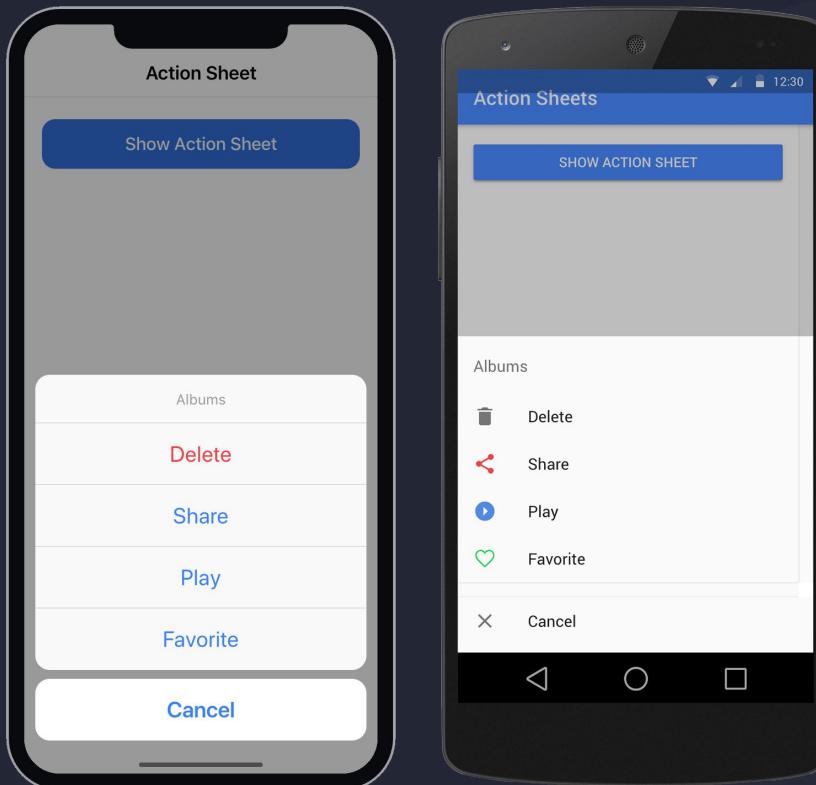
ionic serve --lab

# IONIC COMPONENTS

# IONIC COMPONENTS

- |                |                   |                  |
|----------------|-------------------|------------------|
| ✓ Action Sheet | ✓ Infinite Scroll | ✓ Refresher      |
| ✓ Alert        | ✓ Input           | ✓ Searchbar      |
| ✓ Badge        | ✓ List            | ✓ Select         |
| ✓ Button       | ✓ Loading         | ✓ Slides         |
| ✓ Card         | ✓ Menu            | ✓ Spinner        |
| ✓ Checkbox     | ✓ Modal           | ✓ Tabs           |
| ✓ Datetime     | ✓ Navigation      | ✓ Toast          |
| ✓ Fab          | ✓ Popover         | ✓ Virtual Scroll |
| ✓ Grid         | ✓ Range           |                  |

# STYLED FOR PLATFORM

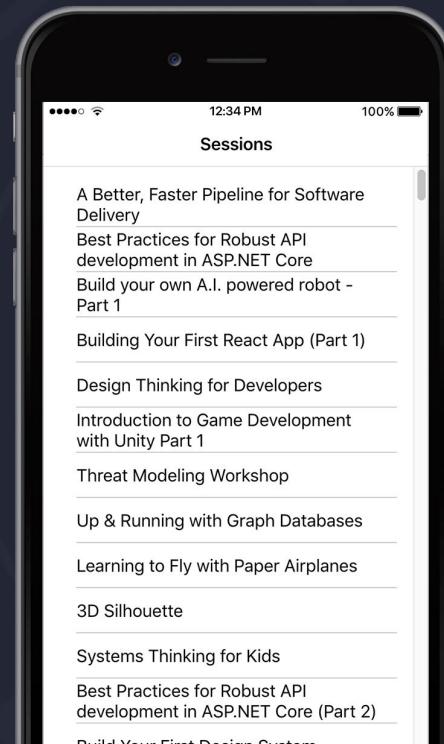
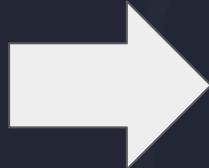
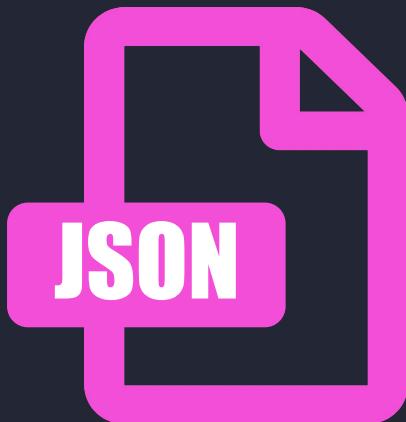


# COMPONENTS: MORE INFORMATION

<https://beta.ionicframework.com/docs/components>

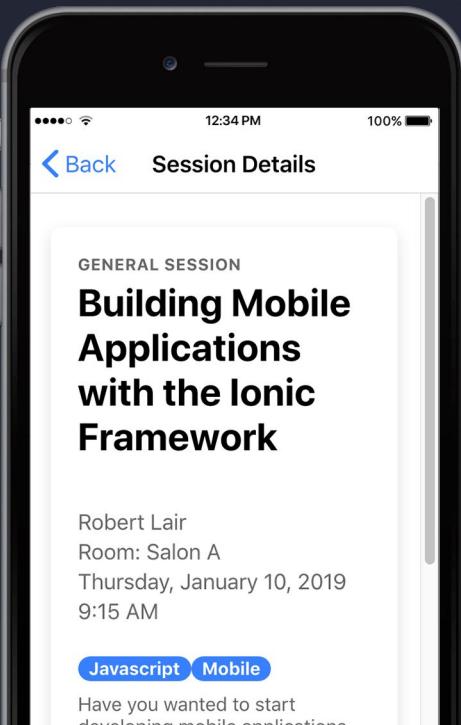
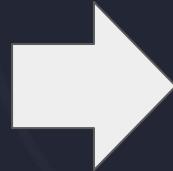
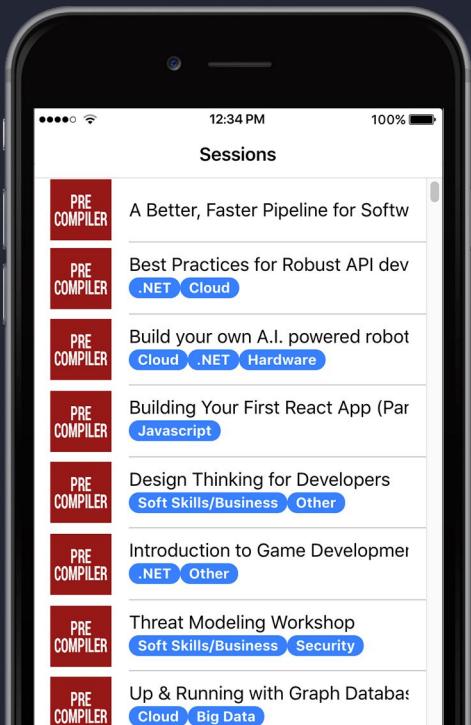
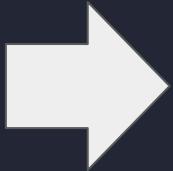
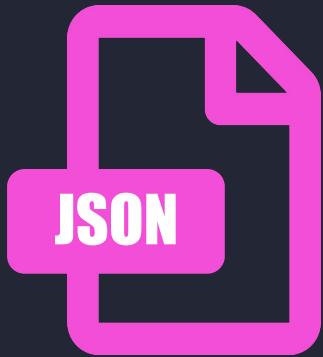
# DEMO: CodeMash App

Goal: Create a simple listing of CodeMash Sessions



# DEMO: CodeMash App

Goal: Expand simple listing of CodeMash Sessions



# DEMO

# NATIVE FUNCTIONALITY

# NATIVE FUNCTIONALITY



# IONIC CLI: CAPACITOR

Capacitor commands for a capacitor integrated project

```
$ ionic capacitor <command>
```

Examples:

```
ionic capacitor add ios  
ionic capacitor sync  
ionic cap open ios
```

# Adding Capacitor to Project

1

Enable Capacitor in the Project

**ionic integrations enable capacitor**

# Adding Capacitor to Project

1

Enable Capacitor in the Project

**ionic integrations enable capacitor**

2

Update the application configuration

**capacitor.config.json**

# Adding Capacitor to Project

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Enable Capacitor in the Project

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Update the application configuration

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Add Platform(s)

**ionic cap add ios**

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Enable Capacitor in the Project

**ionic integrations enable capacitor**

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Update the application configuration

**capacitor.config.json**

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Add Platform(s)

**ionic cap add ios**

4

Build the application

**ionic build [--prod]**

# Adding Capacitor to Project

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Enable Capacitor in the Project

**ionic integrations enable capacitor**

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Update the application configuration

**capacitor.config.json**

3

Add Platform(s)

**ionic cap add ios**

4

Build the application

**ionic build [--prod]**

5

Sync changes to the output directory (i.e. ios, android)

**ionic cap sync**

# Importing Capacitor Plugins

1

Import the Plugins from Capacitor Core

```
import { Plugins } from '@capacitor/core';
```

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Import the Plugins from Capacitor Core

```
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```

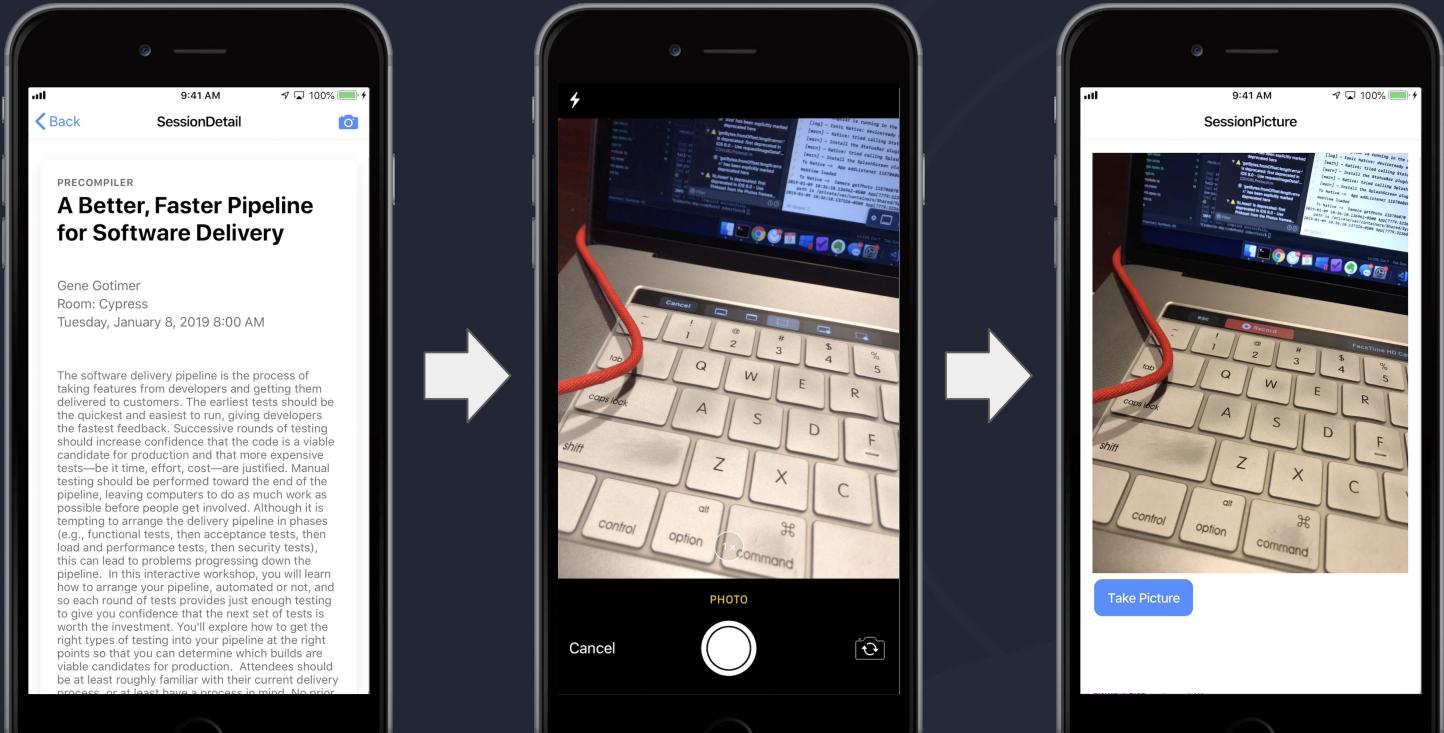
2

Destructure Camera from Plugins

```
const { Camera } from Plugins;
```

# DEMO: CodeMash App + Native

Goal: Add Camera Functionality to App



# DEMO

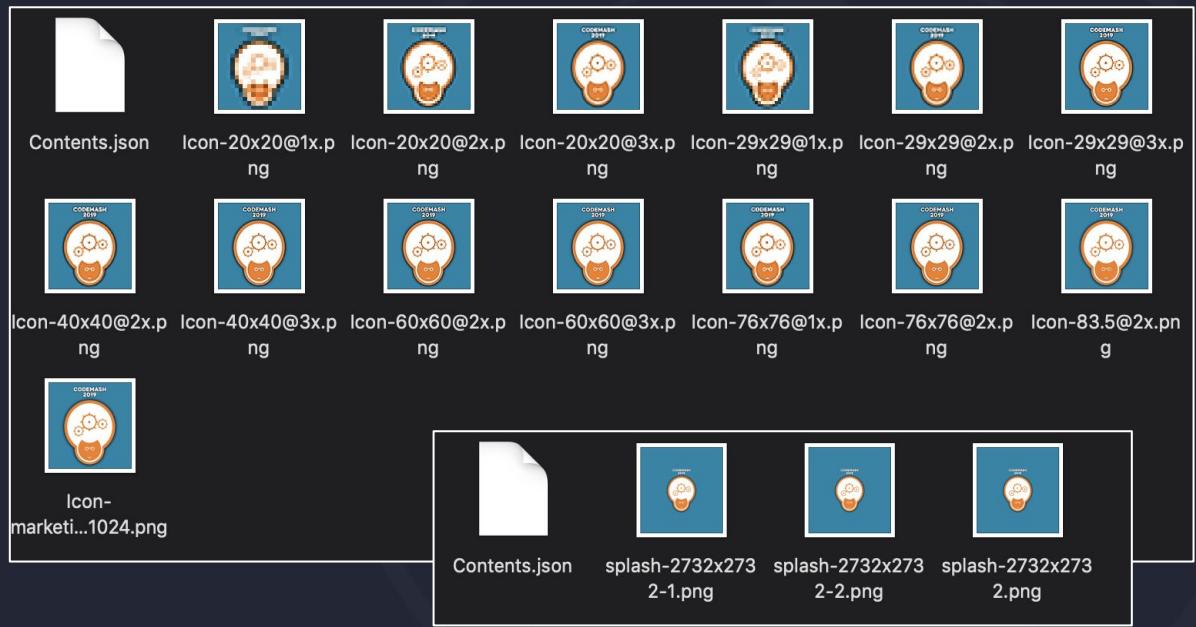
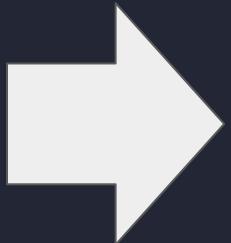
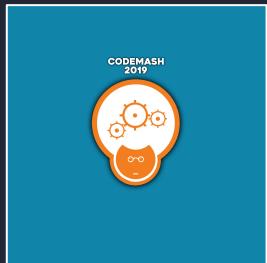
# PREPARING APP FOR DEPLOYMENT

# SPLASH SCREEN & ICONS

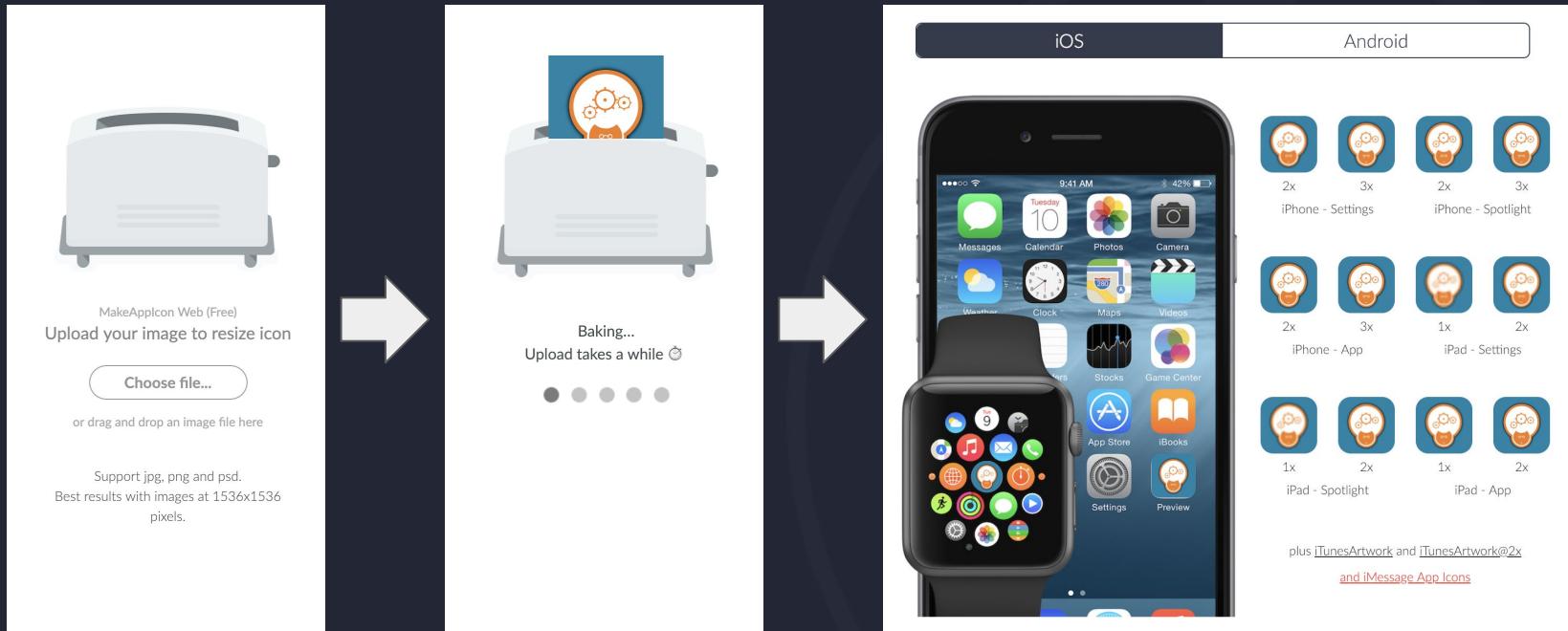
- ✓ There are many devices our app could be running on
- ✓ Each device may have a different resolution/pixel density
- ✓ Result is many graphics must be created
- ✓ Ionic Resources, XCode, Android Studio, Several Websites

# DEMO: CodeMash App - Icons/Splash

Goal: Expand simple listing of CodeMash Sessions



# <https://makeappicon.com>

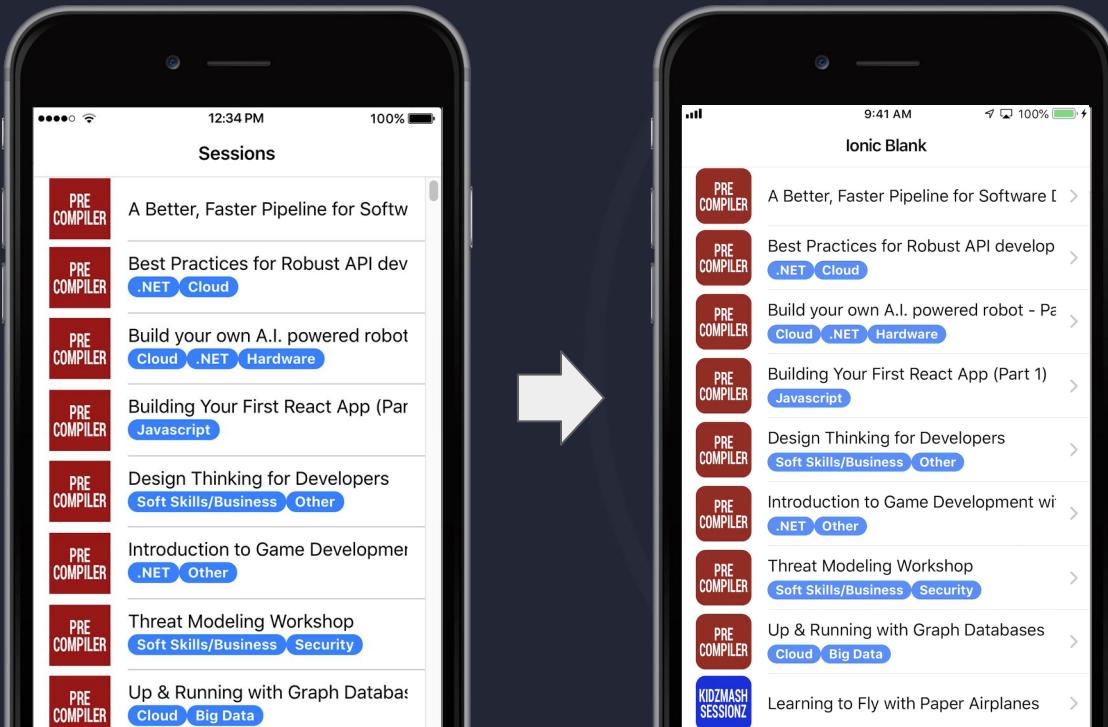


# DEMO

# BONUS! STYLING IONIC APPS

# DEMO: Styling Ionic Apps

Goal: Round Corners of Avatar in Session Listing



# ADDITIONAL RESOURCES

- ✓ Ionic: <https://ionicframework.com>
- ✓ Capacitor: <https://capacitor.ionicframework.com>
- ✓ Cordova: <https://cordova.apache.org>

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*Please use the CodeMash app to fill out a survey about this talk*