



Summer of NativeScript

- July 2015

<http://nativescript.org>



NativeScript

Build truly native apps with JavaScript

Develop iOS, Android and Windows Phone apps from a single code base

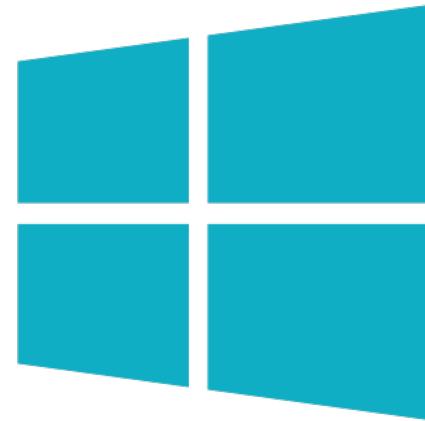
[GET STARTED](#)

 [VIEW IN GITHUB](#)



What is NativeScript?

- A runtime for building and running *native* iOS, Android, and (soon) Windows Phone apps with a single, JavaScript code base





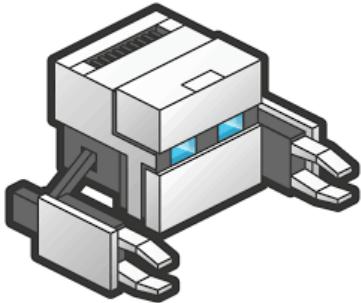
But wait

isn't that PhoneGap?





!=



- No DOM



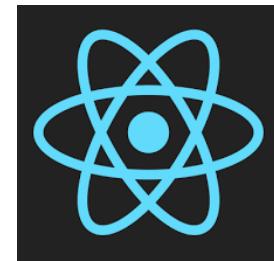
!=



- No cross compilation



!=



- Direct access to native APIs in JS



Why NativeScript?

- Skills reuse
 - Standards-based JavaScript, CSS, optionally TypeScript
- Code reuse
 - npm modules, 3rd-party iOS and Android libraries
- Easily use native APIs
 - No wrappers to access native APIs
 - Use native UI elements
- Open source!



Contribute!

(nativescript.org/contribute)

Contributing to NativeScript

Thank you for your interest in contributing to the NativeScript project!

Anyone wishing to contribute to the NativeScript project MUST read & sign the [NativeScript Contribution License Agreement](#). The NativeScript team cannot accept pull requests from users who have not signed the CLA first.

NativeScript is a complex framework, involving cross-platform modules, a Command-Line Interface and platform-specific runtimes. Each of these follows a specific technology, therefore the contribution instructions are different for each.

Please, visit these repositories for detailed contribution guidelines:

[Cross-Platform modules](#)

[Command-Line Interface](#)

[Android-Runtime](#)

[iOS-Runtime](#)





JS



NativeScript Android example

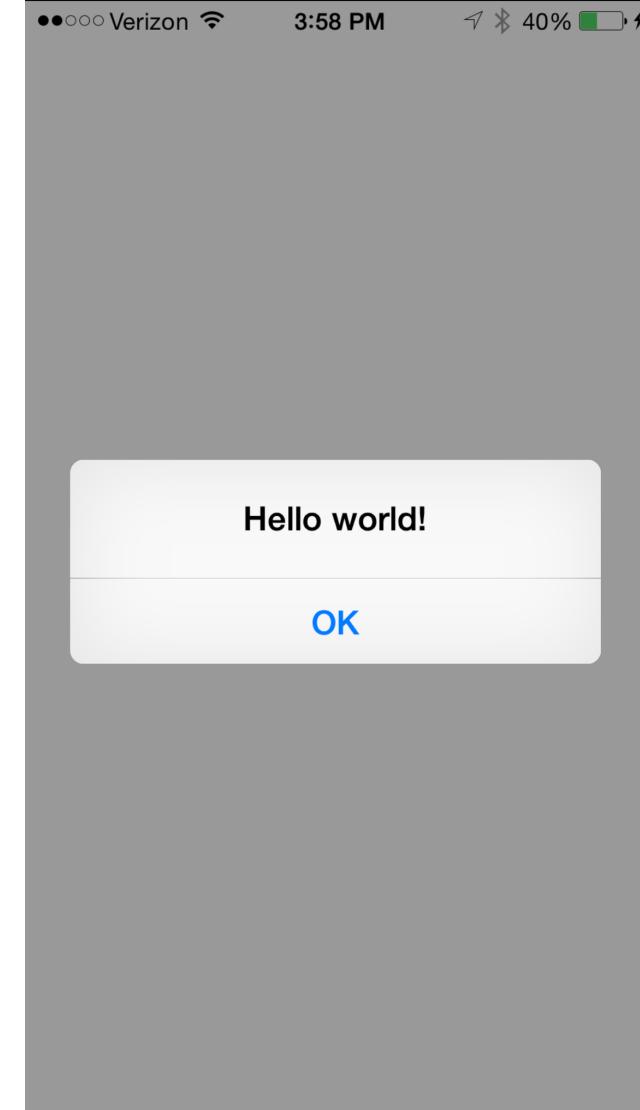
```
var time = new android.text.format.Time();
time.set( 1, 0, 2015 );
console.log( time.format( "%D" ) );
```

Output: "01/01/15"



NativeScript iOS example

```
var alert = new UIAlertView();
alert.message = "Hello world!";
alert.addButtonWithTitle( "OK" );
alert.show();
```



UIAlert View Class Reference

Apple Inc. [US] https://developer.apple.com/library/prerelease/ios/documentation/UIKit/Reference/UIAlertView_C... ☆

iOS Developer Library — Pre-Release

UIKit Framework Reference > UIAlertView Class Reference

Search iOS Developer Library

Language: Swift Objective-C Both On This Page Options

UIAlertView

Setting Properties

- delegate Property
- alertViewStyle Property
- title Property
- message Property** ← Red arrow points here
- visible Property

Configuring Buttons

- addButtonWithTitle:
- numberOfButtons Property
- buttonTitleAtIndex:
- textFieldAtIndex:
- cancelButtonIndex Property
- firstOtherButtonIndex Property

Displaying

- show

```
var alert = new UIAlertView();
alert.message = "Hello world!";
alert.addButtonWithTitle( "OK" );
alert.show();
```

Feedback

N

How does this work?



NativeScript and JS VMs

- NativeScript runs JavaScript on a JavaScript VM
 - JavaScriptCore on iOS
 - V8 on Android



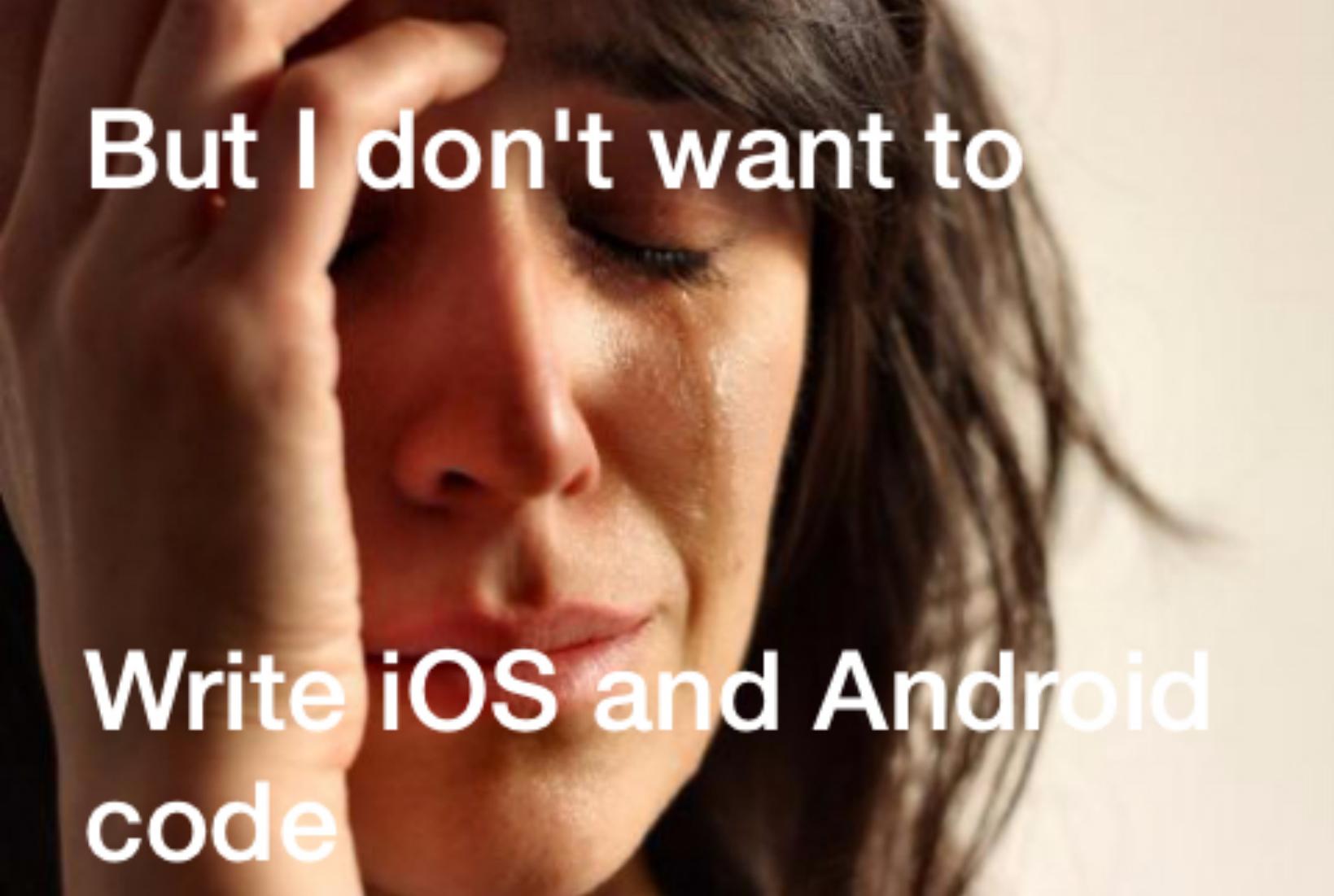
```
var time = new android.text.format.Time();
time.set( 1, 0, 2015 );
console.log( time.format( "%D" ) );
```

- Runs on V8

```
var alert = new UIAlertView();
alert.message = "Hello world!";
alert.addButtonWithTitle( "OK" );
alert.show();
```

- Runs on JavaScriptCore



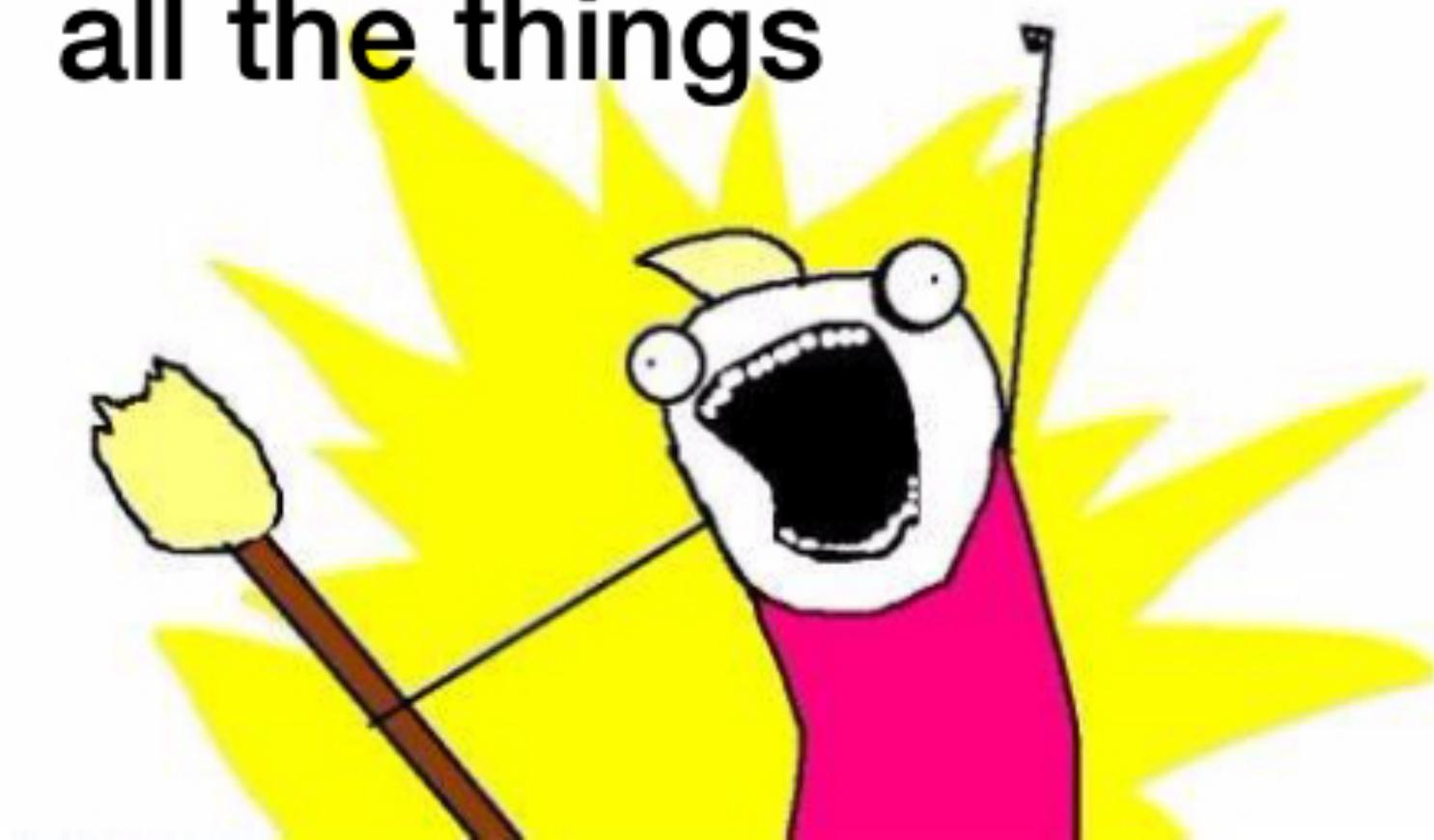


But I don't want to

Write iOS and Android
code



NativeScript modules for all the things



NativeScript modules

- NativeScript-provided modules that provide cross-platform functionality.
- There are dozens of them and they're easy to write yourself.
- NativeScript modules follow Node module's conventions (CommonJS).

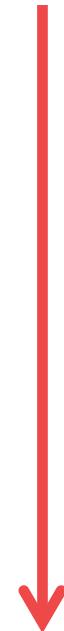


NativeScript file module

```
var fileSystemModule = require( "file-system" );
new fileSystemModule.File( path );
```



```
new java.io.File( path );
```



```
NSFileManager.defaultManager();
fileManager.createFileAtPathContentsAttributes(path);
```

HTTP module example

```
var http = require( "http" );
http.getJSON( "https://api.myservice.com" )
  .then(function( result ) {
    // result is JSON Object
});
```



Community modules

nativescript

Command-line interface for building NativeScript pr...
version 0.10.0
305 downloads in the last week

nativescript-sqlite

A sqlite NativeScript module for Android and (soon) iOS
version 0.0.2
21 downloads in the last week

nativescript-maps

A NativeScript module for using native map APIs
version 0.1.1
39 downloads in the last week

nativescript-texttospeech

A texttospeech NativeScript module for Android and ...
version 1.0.1
0 downloads in the last week

nativescript-flashlight

A flashlight NativeScript module for Android and iOS
version 0.1.1
180 downloads in the last week

nativescript-vibrate

A vibrate NativeScript module for Android and iOS
version 1.0.1
22 downloads in the last week

nativescript-phone

A phone NativeScript module for Android and iOS
version 0.1.2
5 downloads in the last week

nativescript-social-share

A NativeScript module to use the native social sharin...
version 0.1.0
0 downloads in the last week

nativescript-azure-mobile-basic

A NativeScript module to read Azure Mobile Services ...
version 0.1.2
15 downloads in the last week

tns-ios

Telerik NativeScript Runtime for iOS
version 0.10.0
156 downloads in the last week

tns-template-hello-world

Hello World project template for NativeScript
version 0.10.1
279 downloads in the last week

nativenumber

Is a creator to native numbers in Java
version 0.1.2
4 downloads in the last week

tns-android

NativeScript Runtime for Android
version 0.10.0
189 downloads in the last week

ios-sim-portable

ios-sim-portable ======
version 1.0.6
450 downloads in the last week

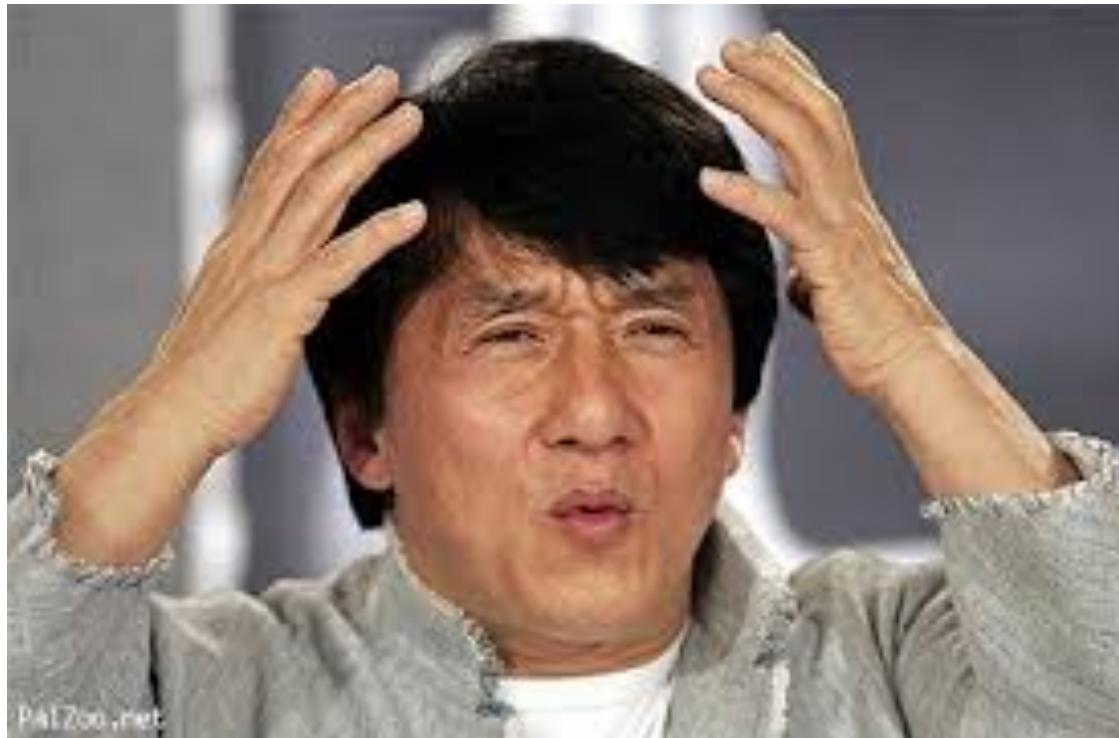
appbuilder

command line interface to Telerik AppBuilder
version 2.8.3-331
232 downloads in the last week



<https://www.npmjs.com/search?q=nativescript>

But how do I turn this into an app?



Two ways to use NativeScript

- 1)  Telerik PlatformSM
- 2) `npm install -g nativescript`





<http://telerik.com/platform>

- Backend-as-a-service
 - Push notifications, cloud data, file storage, and more
- Analytics
- AppBuilder
 - Cloud builds (build iOS apps on Windows, Windows Phone apps on a Mac)
 - NativeScript debugging and tooling
- Automated app testing
- And more!



Telerik AppBuilder IDE Options

- In-Browser Client
- Visual Studio Extension
- Sublime Text Package
- Command-Line Interface





<https://www.telerik.com/purchase/platform>

Telerik Platform
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FREE

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Web, Hybrid & Native UI

Unlimited trial support

Telerik Platform
Developer

\$39 /month/user

requires annual upfront payment

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Hybrid UI

Limited web support

Telerik Platform
Professional

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- + Direct App Store Deployment

Hybrid & Native UI

Limited web support

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Telerik Platform
Business

\$149 /month/user

requires annual upfront payment

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For developers and large teams building advanced apps connected to business data

Pro Platform

- + Active Directory Integration
- + Enterprise Data Connectors
- + Private App Distribution

Web, Hybrid & Native UI

Unlimited web support

NativeScript CLI

- Free and open source
- <https://github.com/nativescript/nativescript-cli>



NativeScript CLI requirements

- <https://github.com/nativescript/nativescript-cli#system-requirements>



- JDK, Apache Ant, Android SDK



- Xcode, Xcode CLI tools, iOS SDK



Starting a new project

```
$ npm install -g nativescript
```

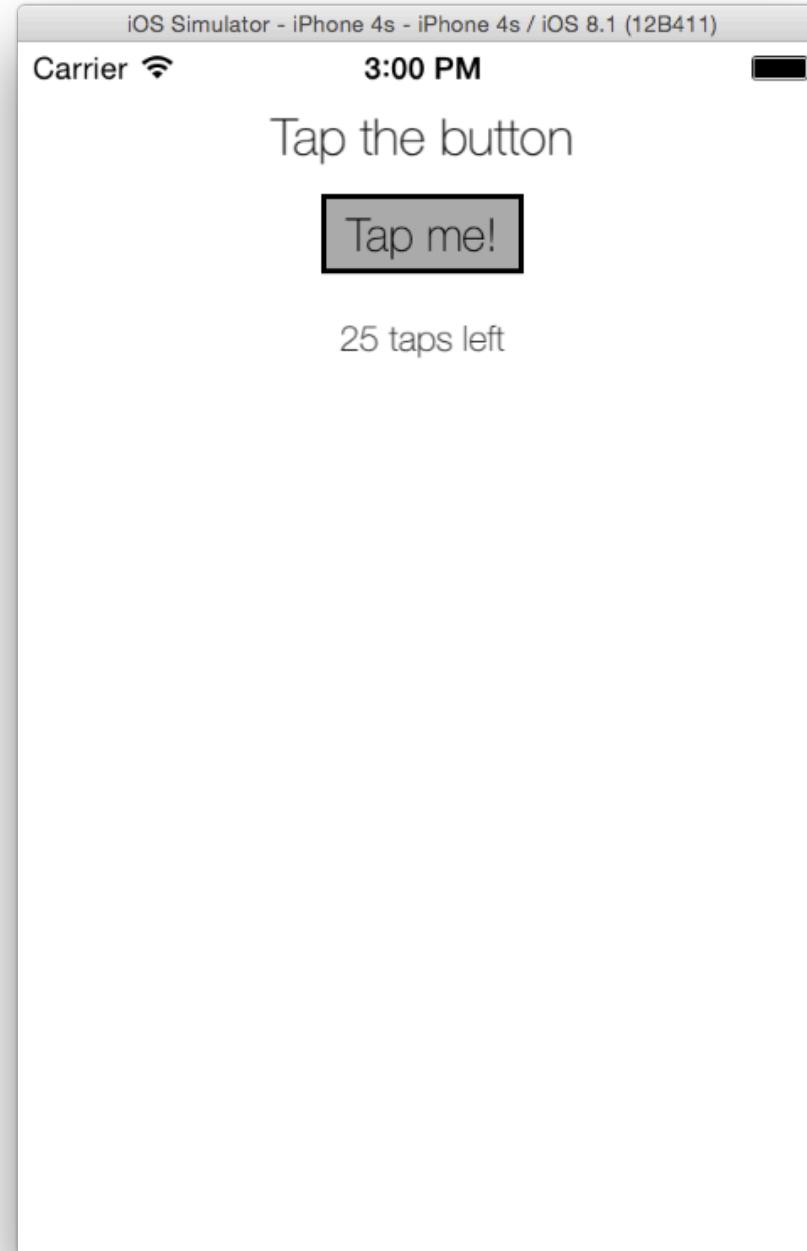
```
$ tns create hello-world
```

```
$ cd hello-world
```



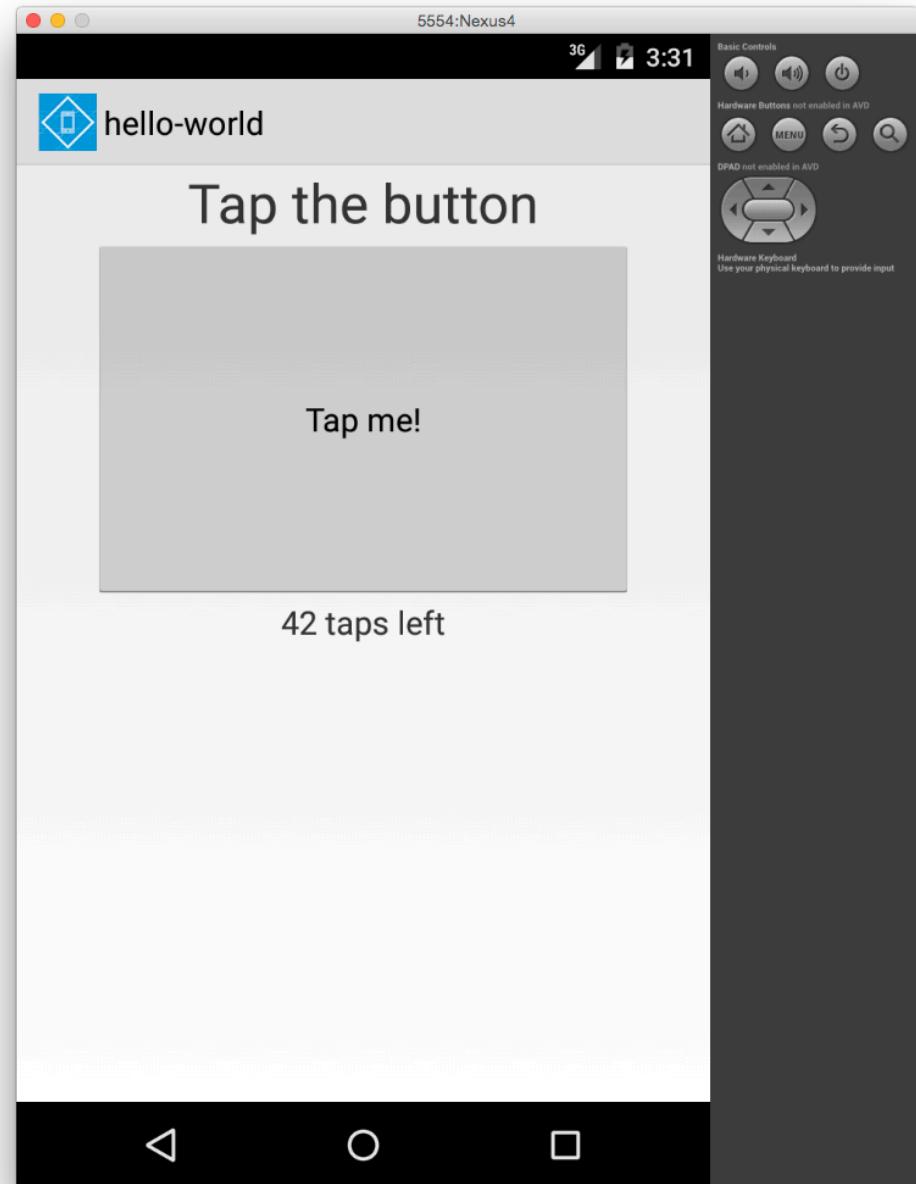
Running on iOS

```
$ tns platform add ios  
$ tns run ios --emulator
```



Running on Android

```
$ tns platform add android  
$ tns run android --emulator
```



```
.  
├── app  
│   ├── App_Resources <-- icons, splash screens, config files  
│   │   └── ...  
│   ├── app.css          <-- App styling  
│   ├── app.js           <-- App starting point  
│   ├── main-page.css  
│   ├── main-page.js  
│   ├── main-page.xml  
│   ├── node_modules    <-- npm modules  
│   │   └── ...  
│   ├── package.json  
│   └── tns_modules     <-- NativeScript modules  
│       └── ...  
└── platforms  
    ├── android  
    └── ios
```



app.js

```
var application = require( "application" );
application.mainModule = "main-page";
application.start();
```



Pages

- XML markup structure
- Elements (e.g. <Page>, <Label>) are NativeScript modules

```
<Page>
    <Label text="hello world" />
</Page>
```



Custom XML Components

Example: Code-Only Custom Component

This sample `main-page.xml` uses two custom components defined in separate declarations in the `xml-declaration` directory. The custom controls are wrapped horizontally.

XML

```
<Page
    xmlns:customControls="app/xml-declaration/mymodule"
    xmlns:customOtherControls="app/xml-declaration/mymodulewithxml">
    <WrapLayout>
        <customControls:MyControl />
        <customOtherControls:MyControl />
    </WrapLayout>
</Page>
```

<http://docs.nativescript.org/ui-with-xml#custom-components>



Data binding

```
<Page loaded="load">  
  <Label text="{{ message }}" />  
</Page>
```

```
exports.load = function( args ) {  
  args.object.bindingContext = { message: "hello world" };  
}
```



Data binding improved

```
var observableModule = require( "data/observable" );

exports.load = function( args ) {
    var data = new observableModule.Observable();
    data.set( "message" , "hello world" );
    args.object.bindingContext = data;
}
```



CSS

```
Label {  
    color: red;  
    font-size: 20;  
    width: 200;  
    margin: 20;  
}
```



<http://docs.nativescript.org/styling#supported-properties>

Supported Properties

This is the list of the properties that can be set in CSS or through the style property of each View:

CSS Property	JavaScript Property	Description
color	color	Sets a solid-color value to the matched view's foreground.
background-color	backgroundColor	Sets a solid-color value to the matched view's background.
font-size	fontSize	Sets the font size of the matched view (only supports



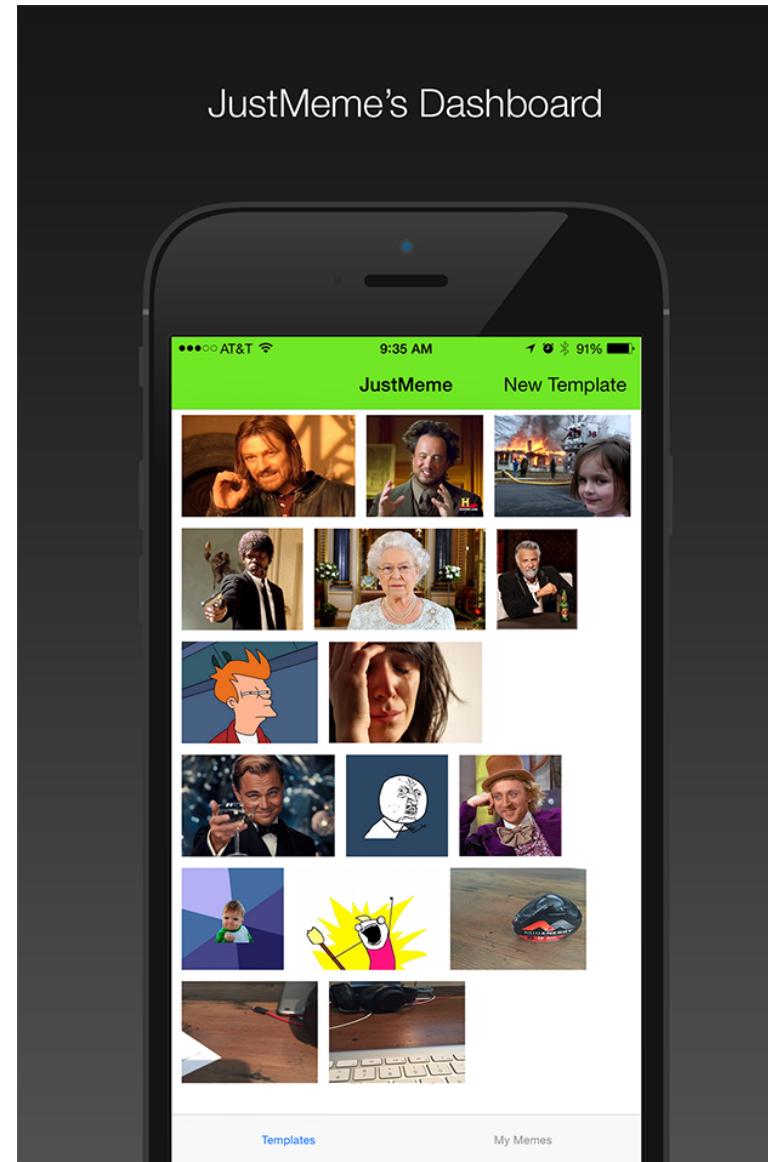


Hands-on Lab

- <https://github.com/tjvantoll/summer-of-nativescript/blob/master/july/lab.md>



JustMeme



<https://github.com/NativeScript/sample-JustMeme>



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