

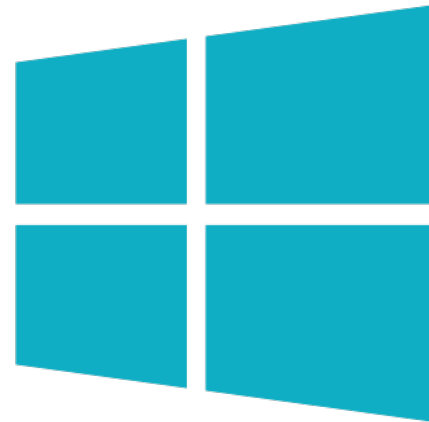


A Lap Around NativeScript

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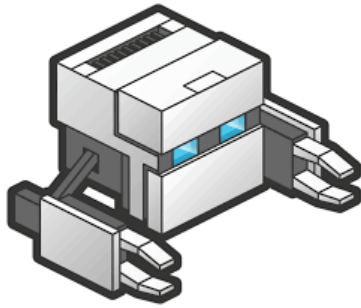
What is NativeScript?

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





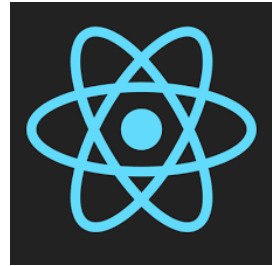
!=



- No DOM



!=



- Direct access to native APIs in JS

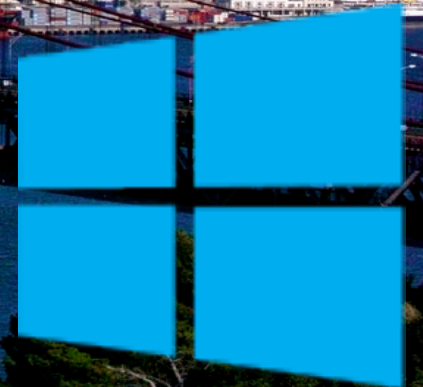


!=



- No cross compilation





NativeScript Android example

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

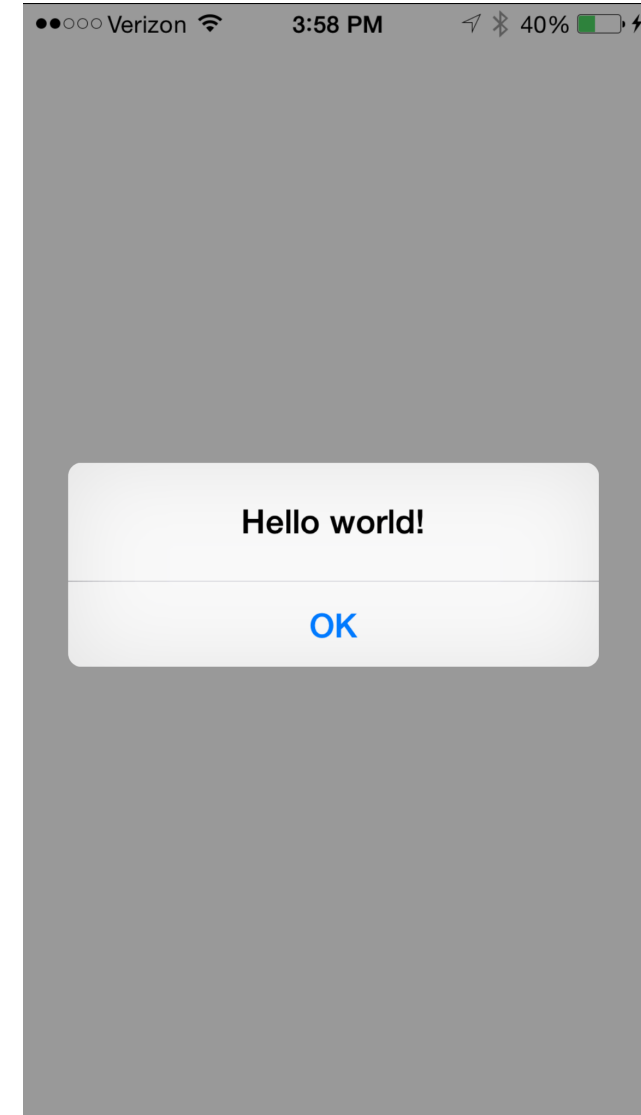
Output: "01/01/15"





NativeScript iOS example

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



UIAlertView 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*

[visible](#) *Property*

Configuring Buttons

[- addButtonWithTitle:](#)

[numberOfButtons](#) *Property*

[- buttonTitleAtIndex:](#)

[- textFieldAtIndex:](#)

[cancelButtonIndex](#) *Property*

[firstOtherButtonIndex](#) *Property*

Displaying

[- show](#)

Tasks

- Creating Alert Views
- Setting Properties
- Configuring Buttons
- Displaying
- Dismissing

Constants

- UIAlertViewStyle

Related Documentation

- Alert Views in UIKit User Interface Catalog

Related Sample Code

- AdvancedURLConnections
- GKTapper
- MVCNetworking
- SquareCam
- URLCache

Feedback

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



How does this work?



NativeScript and JS VMs

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



```
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



Gathering Native APIs

- NativeScript uses reflection to build a list of available APIs for each platform.
- For optimal performance, this metadata is pre-generated, and injected into the app package at build time.



Injecting native APIs

- V8/JavaScript Core have APIs to inject global variables

v8 Namespace Reference

Debugger support for the V8 JavaScript engine. [More...](#)

Namespaces

namespace	internal
-----------	----------

Data Structures

class	AccessorInfo The information passed to an accessor callback about the context of the property access. More...
class	ActivityControl An interface for reporting progress and controlling long-running activities. More...
class	Arguments The argument information given to function call callbacks. More...
class	Array An instance of the built-in array constructor (ECMA-262, 15.4.2). More...
class	Boolean A primitive boolean value (ECMA-262, 4.3.14). More...
class	BooleanObject A Boolean object (ECMA-262, 4.3.15). More...
class	Context A sandboxed execution context with its own set of built-in objects and functions. More...
class	CpuProfile CpuProfile contains a CPU profile in a form of two call trees: <ul style="list-style-type: none">• top-down (from main() down to functions that do all the work);• bottom-up call graph (in backward direction).



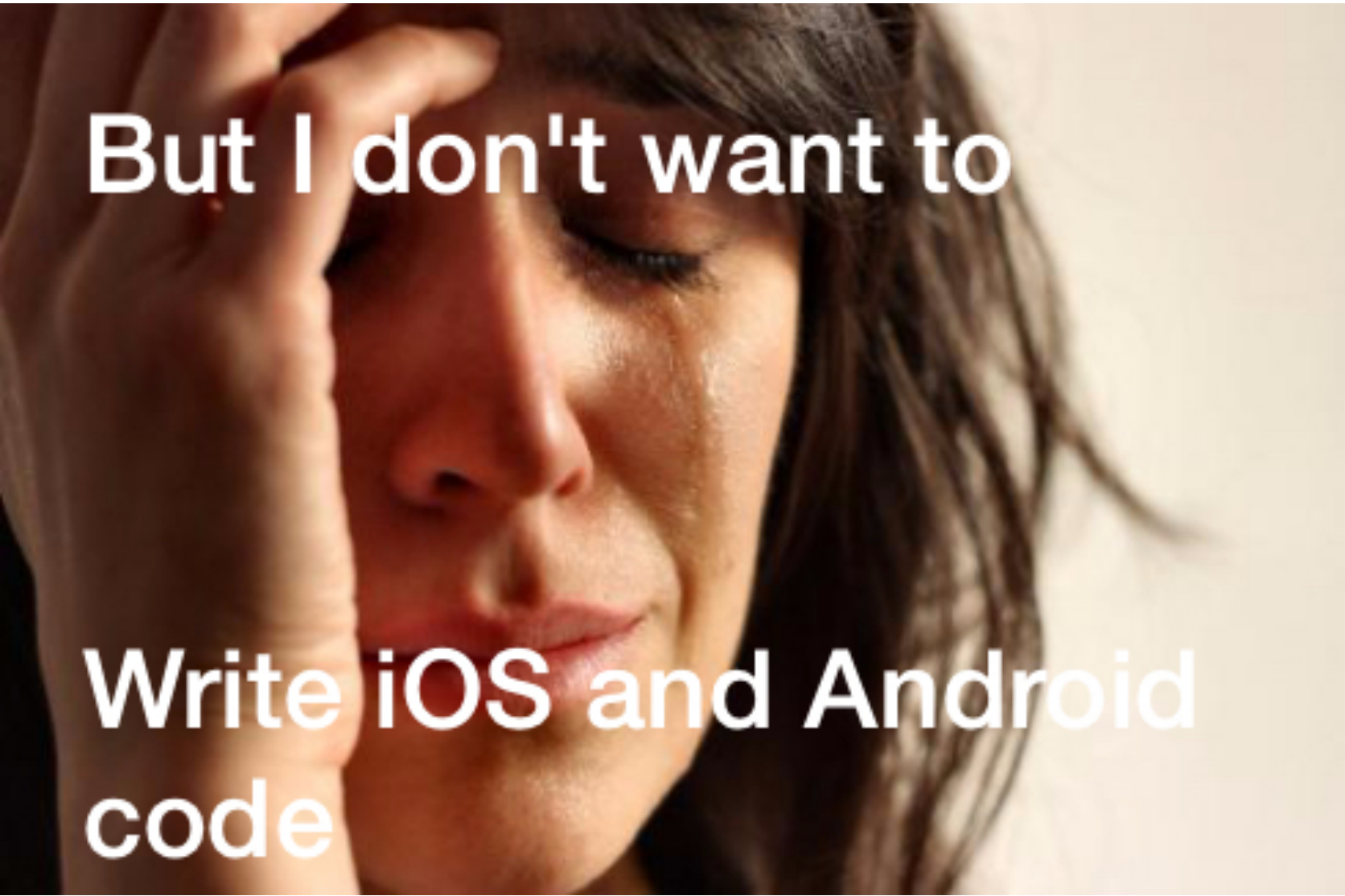
Invoking native APIs

```
var time = new android.text.format.Time();
```

- V8/JavaScriptCore have C++ callbacks for JS function calls and property accesses.
- The NativeScript runtime uses those callbacks to translate JS calls into native calls.
- On iOS, you can directly call Objective-C APIs from C++ code.
- On Android, NativeScript uses Android's JNI (Java Native Interface) to make the bridge from C++ to Java.





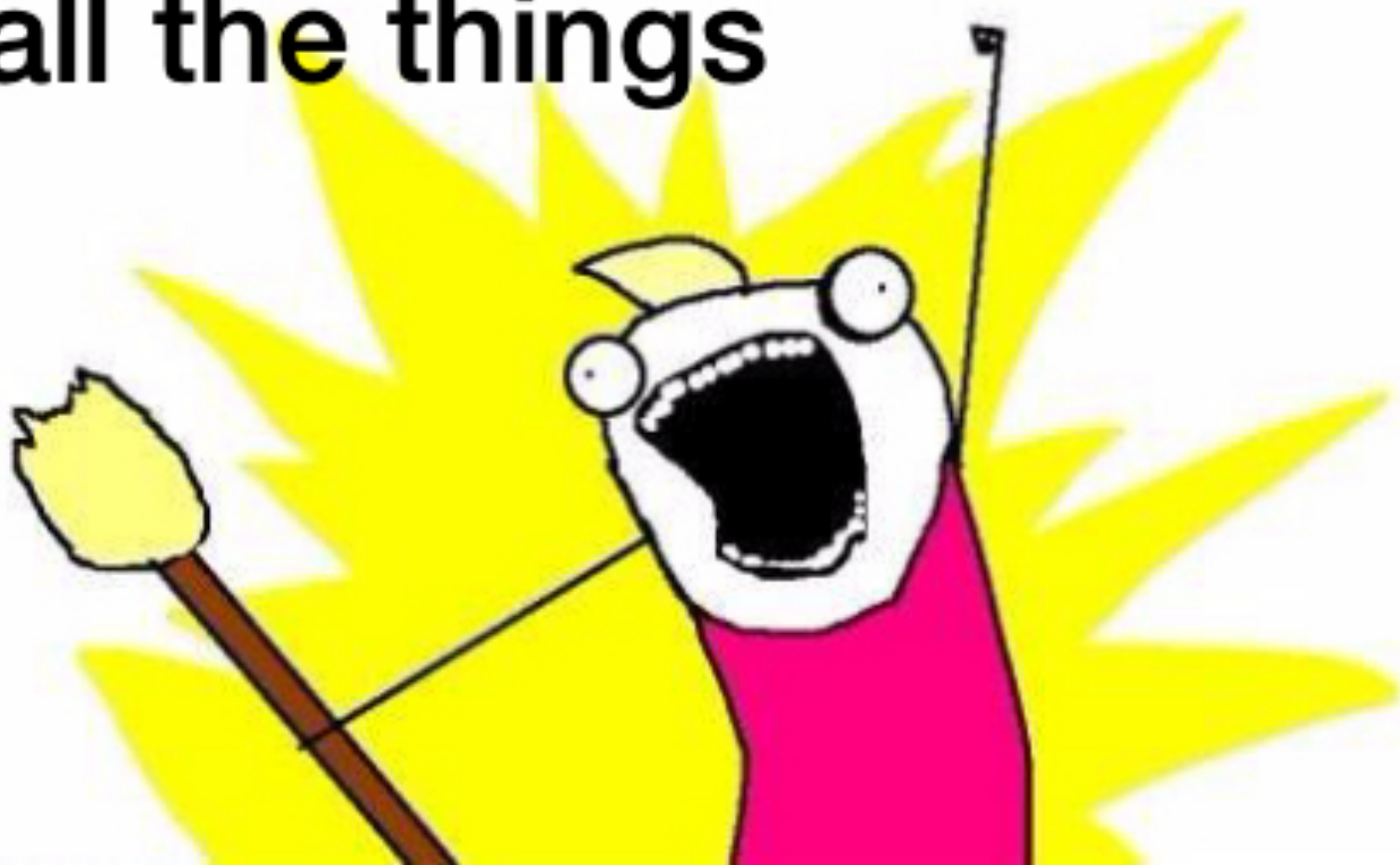


But I don't want to

Write iOS and Android
code



NativeScript modules for all the things



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



But how do I turn this into an app?



Two ways to use NativeScript

1)  **Telerik**PlatformSM

2) `npm install -g nativescript`





Telerik PlatformSM

<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!





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

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+ 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





Follow NativeScript



- @nativescript
- <https://nativescript.org/blog>



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](#)



Thanks!

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