Native Script – Web Apps to Mobile Apps Developer

Agenda

- Overview of Native Script
- Pre-Requisites for Native Script
- Native Script App Folders
- Basic Commands of Native Script
- Native Script Controls
- Demo using Native Script –Play Ground
- Demo using Visual Studio Code

My Intro

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Native Script - Overview

- Native Script is free open source framework for building native IOS and Android Apps.
- Build Cross Platform mobile apps using single code base.
- Develop Mobile Apps using JavaScript , Angular , Typescript and Vue

Why Native Script

- Web Developers with knowledge of HTML, CSS and JavaScript can use the same to develop rich native mobile applications.

- Easily develop apps using existing plugins from npm [Node], Gradle [Android] and IOS Plugins.

- Easy to learn and develop apps using pre-defined templates.

Pre-Requisites of Native Script

- Prior Knowledge of HTML, CSS and any one of scripting language JavaScript , Angular, Typescript or Vue
- Node.js Server, Command Line Terminal and Preferred Text IDE Editor
- Android Studio, Android SDK and Android Emulator, Java SDK

node JS

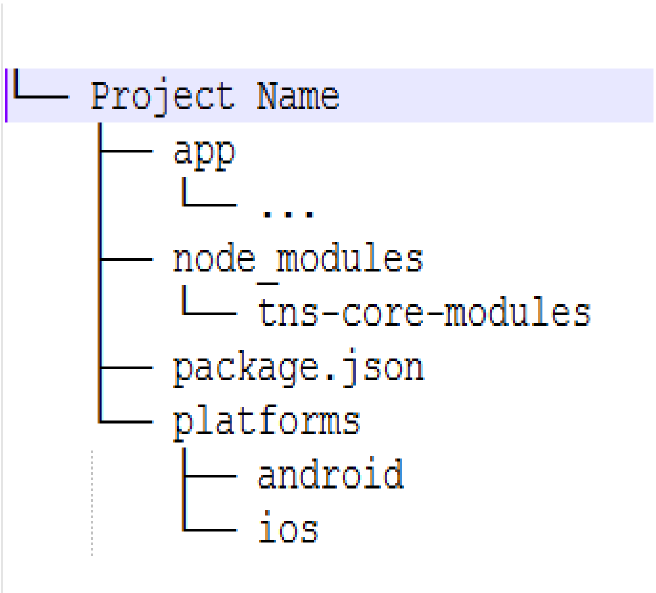
Visual Studio Code

Android Studio

Native Script – App Structure

Native Script App Structure

- Any Native Script app contains the below folders
- Root – Project Name
- App Folder
- Node_Modules
- Package.Json
- Platforms



```
└── Project Name
    ├── app
    │   └── ...
    ├── node_modules
    │   └── tns-core-modules
    ├── package.json
    └── platforms
        ├── android
        └── ios
```

App Structure

- App Folder

This folder contains all the development resources like forms, js files

- Node_Modules

This folder contains application npm module dependencies. The tns-core modules folder contains Native Script related javascript modules which can be used to develop features in the application like http calls, access files etc.

- Package.Json

Details of application and the version of native script used and other npm modules used in the application.

- Platforms

This folder contains platform-specific code which Native Script needs to build IOS or Android Apps.

This is mostly generated code by Native Script CLI.

App Structure - Contd

- App_Resources

  This folder contains platform specific resources.

- Shared

  This folder contains files that needs to be shared across views

  In app.

- Views

  This folder contains the code to build apps views. Each view is made

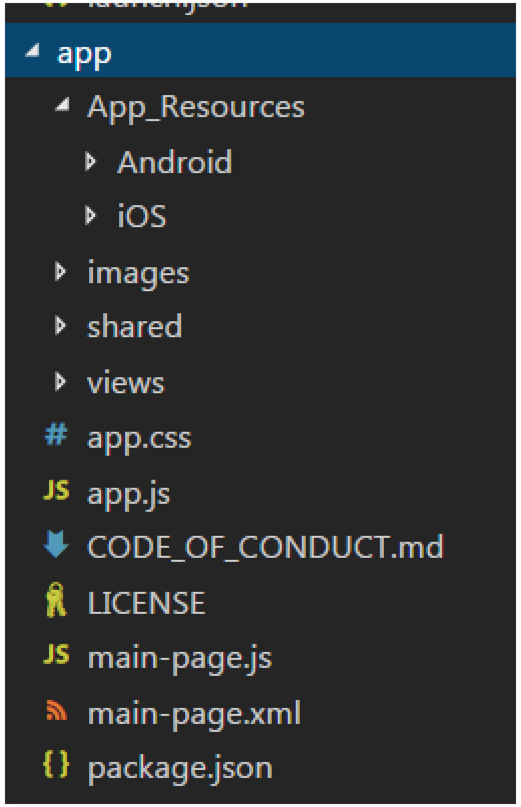
Up of XML File, a Javascript file and optional css file.

- App.css

  File contains global styles used in the app.

- App.Js

  This file sets up applications starting module and initializes the app.



```
◢ app
   ◢ App_Resources
      ▷ Android
      ▷ iOS
   ▷ images
   ▷ shared
   ▷ views
   # app.css
   JS app.js
   CODE_OF_CONDUCT.md
   LICENSE
   JS main-page.js
   main-page.xml
   {} package.json
```

Native Script CLI Basic Commands

- tns create appname --template template name
  - This creates an app based on the provided template name.
  - Hello world template is used when no template flag is provided
- tns platform add android
  - This creates the android specific platform folder.
- tns platform add ios
  - This creates the IOS specific platform folder.

Native Script CLI Basic Commands

- tns build android
  - This command converts code from app folder to android platform.
- tns build ios
  - This command converts code from app folder to ios platform
- tns run android --emulator
  - This command builds and runs the app in android emulator
- tns run ios
  - This command builds and runs the app in IOS device or emulator

IOS specific commands cannot be executed in Windows OS.

Native Script CLI Basic Commands

- tns plugin add “pluginname or path to pluginname”
  - This command is used to add nativescript plugin to application.
- tns prepare android
  - This command is used to update android platform folder with changes from app folder.
- tns prepare ios
  - This command is used to update IOS platform folder with changes from app folder
- tns doctor
  - This command is used to verify if all required components are setup in development machine.

Native Script Controls

What makes a Native Script View

- Native Script View is comprised of three files.

-- ViewName.xml

-- ViewName.css

-- ViewName.js

- Xml file is used to design the screen layout and screen controls.
- Css file is used to mention css class specific to the view.
- Js file acts as the code behind file similar to aspx.cs for an aspx page.

Native Script View Models

- Native Script View Models are used to enable two way data flow between model and view
- Native Script uses the observable module to facilitate the binding between view and model

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

- The properties defined in view model can be accessed in view using the "**{{ propertyname }}**" syntax

```
<TextField id="email" text="{{ email }}" keyboardType="email" autocorrect="false" autocapitalizationType="none" />
```

Native Script Basic Controls

HTML Control	Native Script Control
<div>	`LayOut – Stack Layout, Grid LayOut, Wrap LayOut, FlexBox Layout, Dock Layout`
<input type="button" value=“Sign In" onclick=“signIn()">	`<Button text=“Sign In" tap="signIn"/>`
<label>Click me </label>	`<Label text="{{ name }}" />`
<img src="mdn-logo-sm.png" alt="MDN">	`<Image src="res://logo" ></Image>`
<input id="email" type="email">	`<TextField id="email" text="{{ email }}" keyboardType="email" autocorrect="false“ autocapitalizationType="none" />`

Native Script Basic Controls

TextField

```
 <TextField id="email" text="{{ email }}" keyboardType="email" autocorrect="false“
autocapitalizationType="none" />
```

- Id – Used to define a unique identifier for the property
- Text – Used to define the text which is binded to the TextField. Use of {{ }} binds it property in viewModel.
- keyboardType – This is used to determine the keyboard layout. **Email** is used for email fields and **Secure** is used for password fields.

Label

```
<Label text="{{ name }}" horizontalAlignment="left" verticalAlignment="center"/>
```

- Text – Used to define the text which is binded to the Label. Use of {{ }} binds it property in viewModel.

Native Script Basic Controls

Image

```
<!-- Load image from app/App_Resources/<platform> folders-->

<Image src="res://logo_white_bg" stretch="none" class="img-rounded p-l-15 p-r-15 p-t-15"></Image>

<!-- Load image from app/images folder -->

<Image src="~/images/logo.png" stretch="none" class="img-rounded p-l-15 p-r-15 p-t-15"></Image>

<!-- Load image from url -->

<Image src="https://docs.nativescript.org/img/NativeScript_logo.png" stretch="none"
class="img-rounded p-l-15 p-r-15 p-t-15"></Image>
```

Native Script Basic Controls

Button

```
<Button text="Sign in" tap="signIn"/>
```

- Tap Property is used to mention the code behind which needs to be executed on click of the Button.

Stack Layout

```
<StackLayout class="layoutBackgroundImageFromFolder">

<Button text="About" tap="loadAbout" />

<Button text="Schedule" tap="loadSchedule"/>

</StackLayout>
```

Stack Layout can be used to stack the controls vertical or horizontal similar to <div>.

Dev Tools

- Visual Studio Code

  Install NativeScript PlugIn

  Create a native script app using tns create app command.

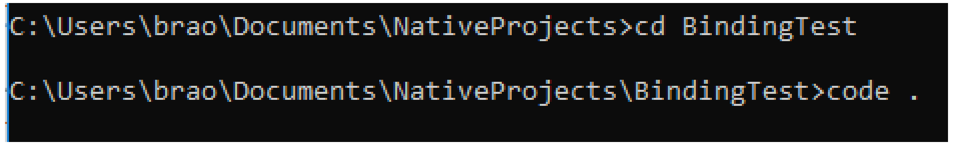
  Navigate to the app folder.

  Enter code . Command .

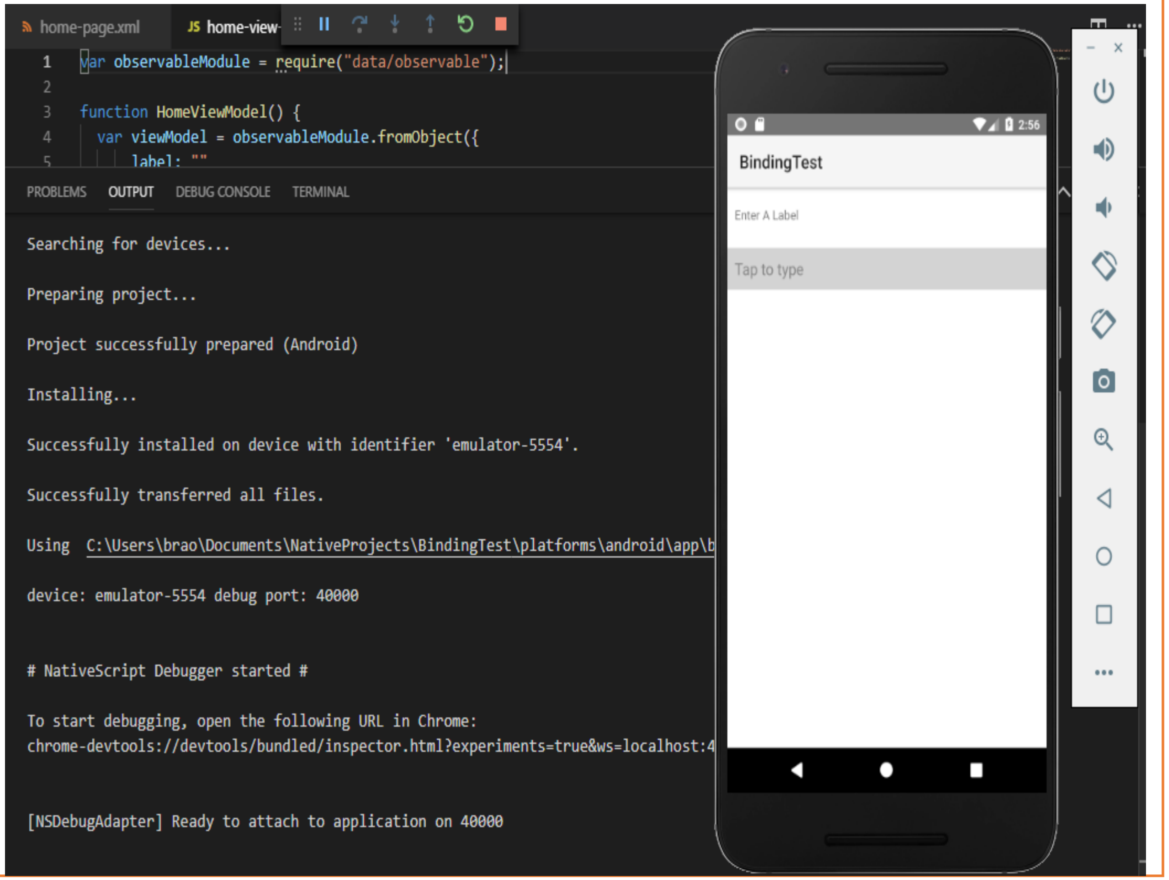
- Chrome Developer Tools

  Chrome Developer Tools can also be used to

  debug NativeScript Applications.



```
C:\Users\brao\Documents\NativeProjects>cd BindingTest

C:\Users\brao\Documents\NativeProjects\BindingTest>code .
```



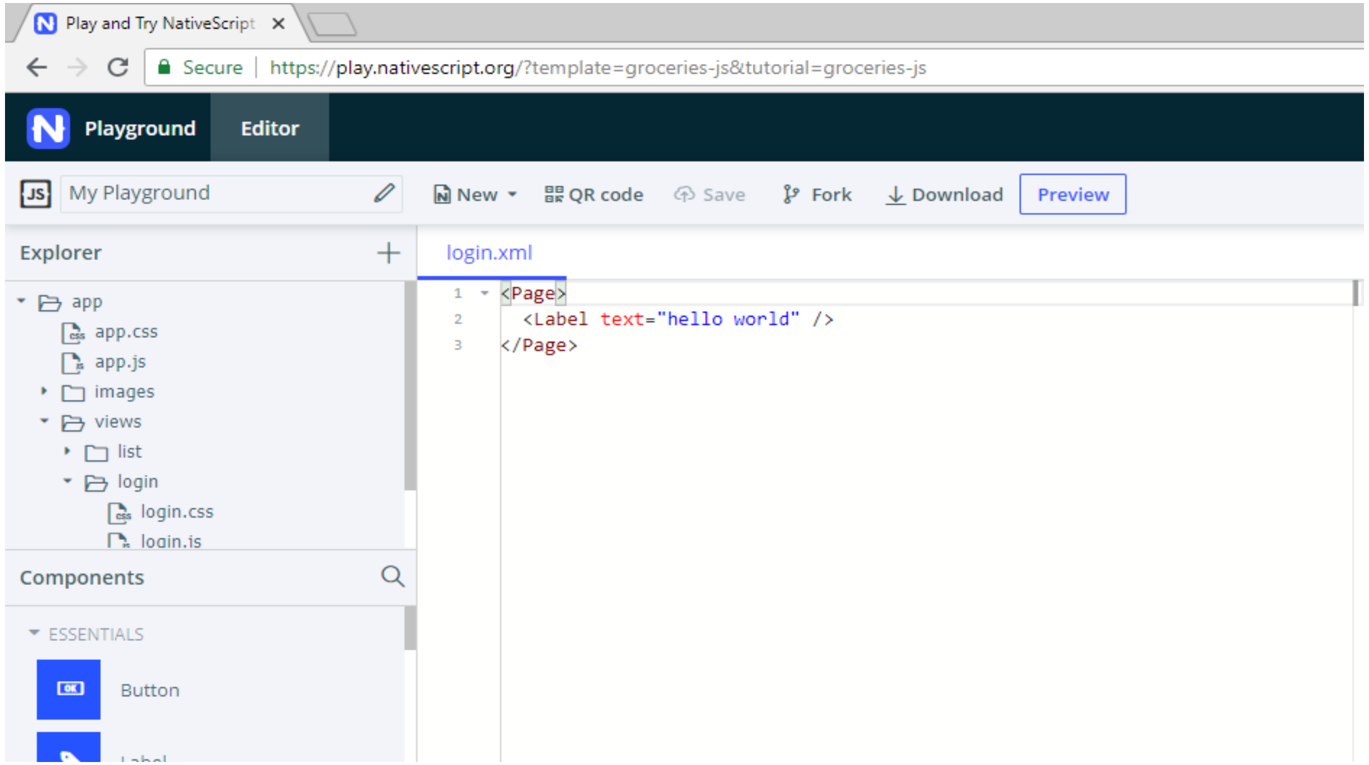
```
var observableModule = require("data/observable");

function HomeViewModel() {
  var viewModel = observableModule.fromObject({
      label: ""
```

```
Searching for devices...

Preparing project...

Project successfully prepared (Android)

Installing...

Successfully installed on device with identifier 'emulator-5554'.

Successfully transferred all files.

Using  C:\Users\brao\Documents\NativeProjects\BindingTest\platforms\android\app\b

device: emulator-5554 debug port: 40000


# NativeScript Debugger started #

To start debugging, open the following URL in Chrome:
chrome-devtools://devtools/bundled/inspector.html?experiments=true&ws=localhost:4


[NSDebugAdapter] Ready to attach to application on 40000
```

Dev Tools

- Native Script Play Ground

Native Script Play Ground is a browser based platform to develop and preview mobile applications



https://play.nativescript.org/?template=groceries-js&tutorial=groceries-js

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

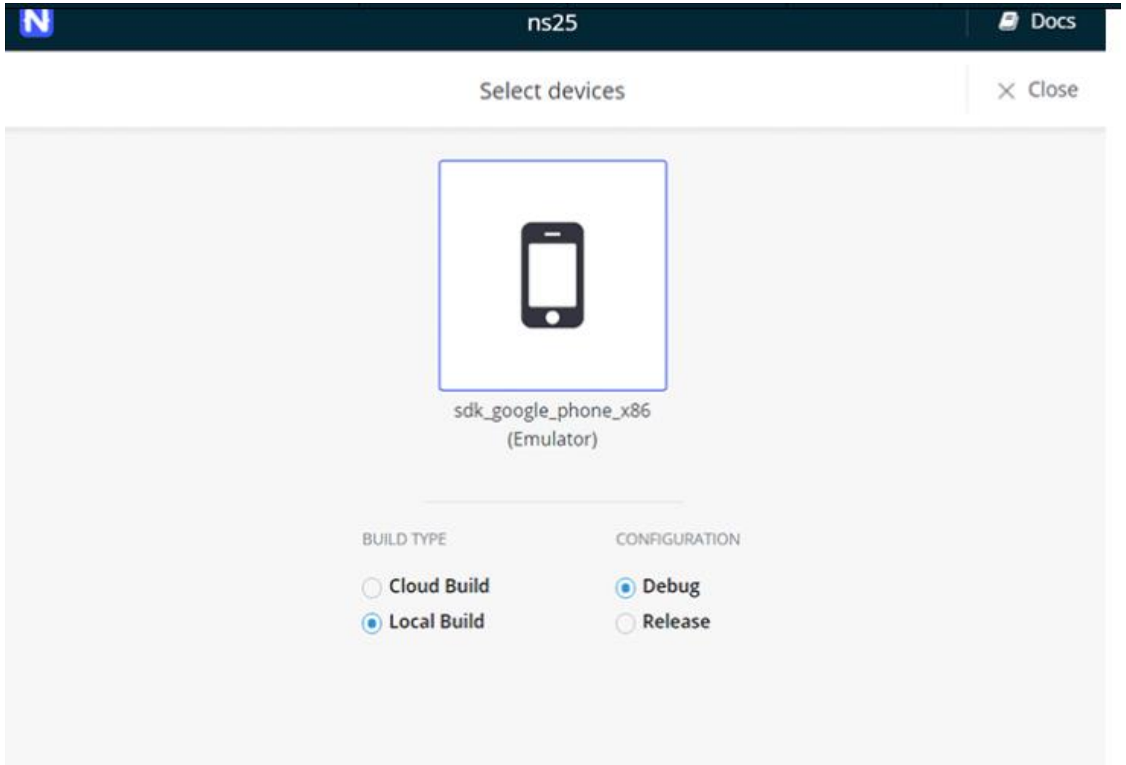
Dev Tools

- Native Script Side Kick

Can be used to develop applications with pre-defined starter templates

Perform cloud or local builds and deploy to test devices

Helps to develop IOS Applications on Windows O/S



sdk_google_phone_x86
(Emulator)

BUILD TYPE

○ Cloud Build
● Local Build

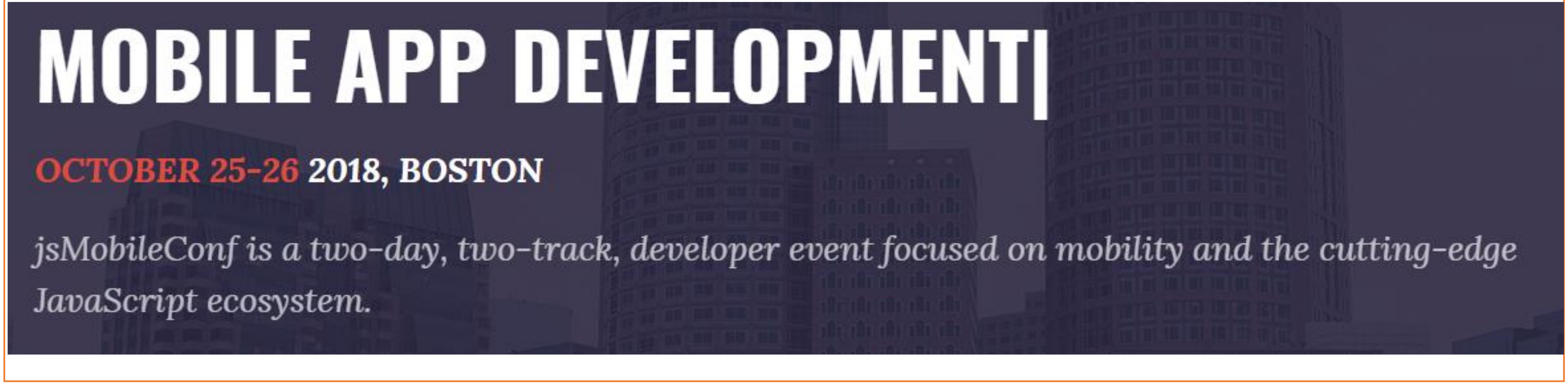
CONFIGURATION

● Debug
○ Release

Walkthrough

- Demo of an existing app using Play Ground
- Demo live sync feature

JS Mobile Conf

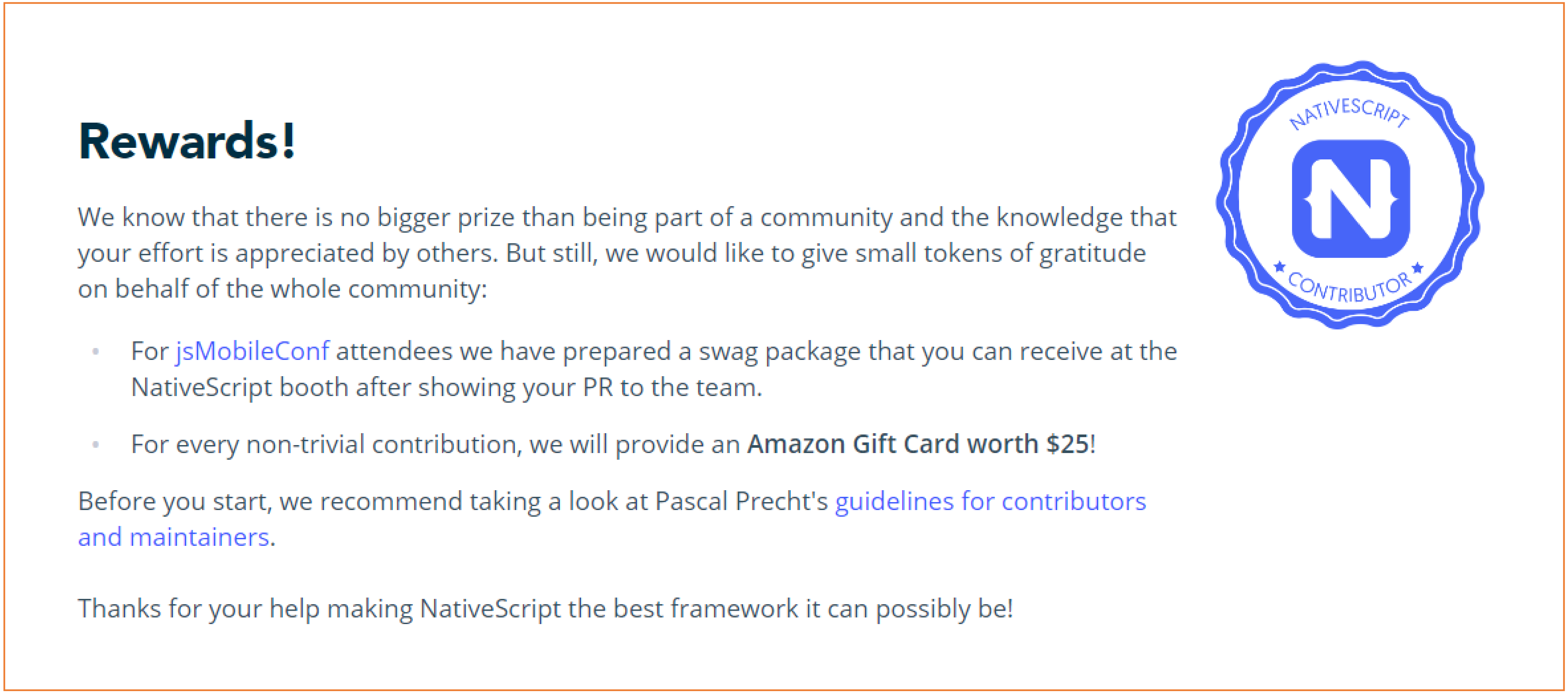


MOBILE APP DEVELOPMENT|

OCTOBER 25-26 2018, BOSTON

jsMobileConf is a two-day, two-track, developer event focused on mobility and the cutting-edge JavaScript ecosystem.

Native Script Contributions



Rewards!

We know that there is no bigger prize than being part of a community and the knowledge that your effort is appreciated by others. But still, we would like to give small tokens of gratitude on behalf of the whole community:

- For jsMobileConf attendees we have prepared a swag package that you can receive at the NativeScript booth after showing your PR to the team.
- For every non-trivial contribution, we will provide an **Amazon Gift Card worth $25**!

Before you start, we recommend taking a look at Pascal Precht's guidelines for contributors and maintainers.

Thanks for your help making NativeScript the best framework it can possibly be!

Further Resources

- Native Script - Documentation
- Native Script eBook   is free book by @brosteins available for download
- Native Script Blog
- Native Script Code Snippets
- Native Script Playground - Browser based development tool
- Native Script Sidekick – Useful for developing IOS apps on Windows Machine

Questions

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Thanks to Central Wisconsin IT Conference Team for opportunity. Please share your feedback at https://docs.google.com/forms/d/11fwzfz7nqFnBm1LFZpYlZmMq0dO6HXDl3yzhU0egIDU