

Develop a Native App (iOS and Android) for a Drupal Website without Learning Objective-C or Java

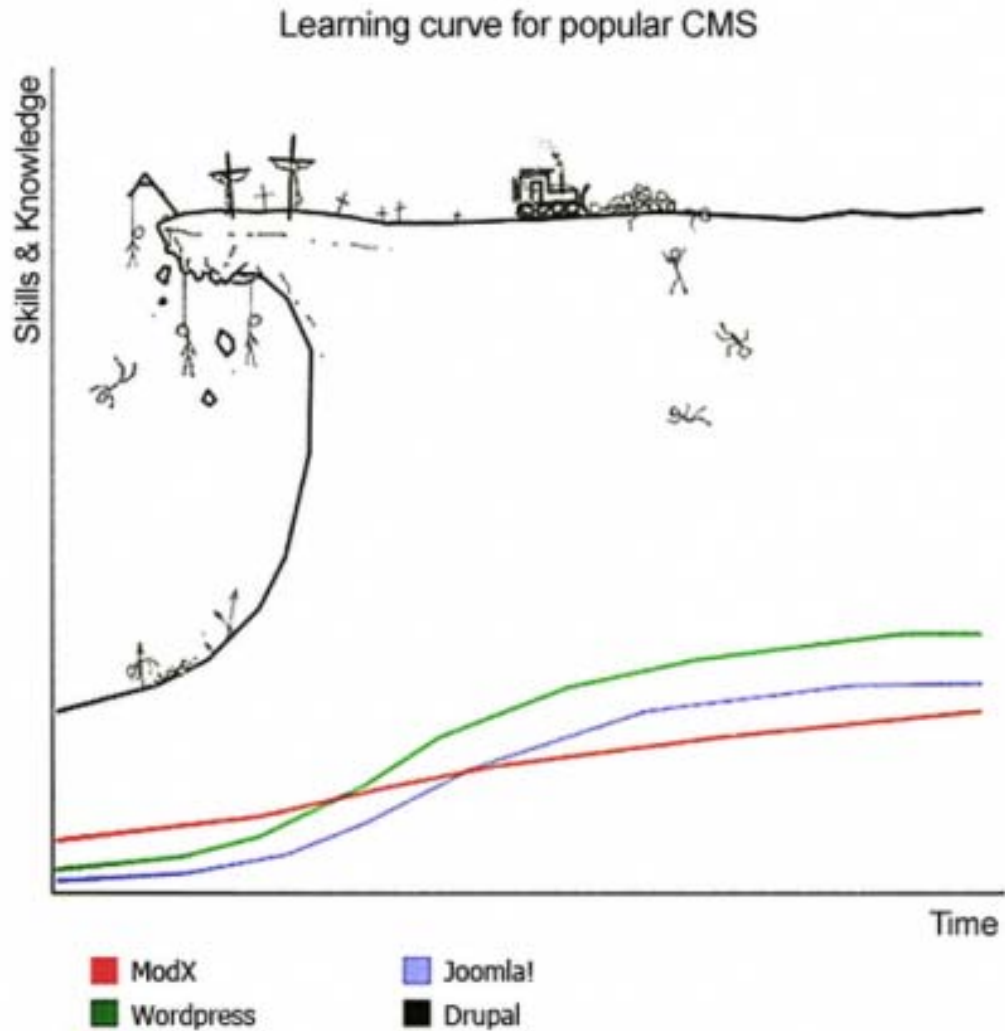
Drupaldelphia 2014
By Joe Roberts



Agenda

- What is DrupalGap and PhoneGap?
- How to setup your Drupal website to be ready to start building an app.
- How to build your first app using DrupalGap's Mobile Application Development Kit.
- How to test your app using Google Chrome Ripple Emulator.
- Tips and Tricks that I have learned while using Drupalgap, PhoneGap, Eclipse and Xcode.

Drupal Learning Curve



Good News! DrupalGap is nothing like this ;-)



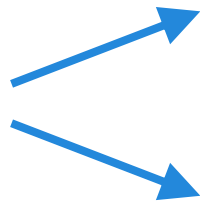
What is DrupalGap?

An Open Source Mobile Application Development Kit
for Drupal Websites



Build Custom Mobile Applications for Android and iOS
Devices to Communicate with Drupal Websites

DrupalGap has two parts...



Drupal Module

Mobile Application Development Kit

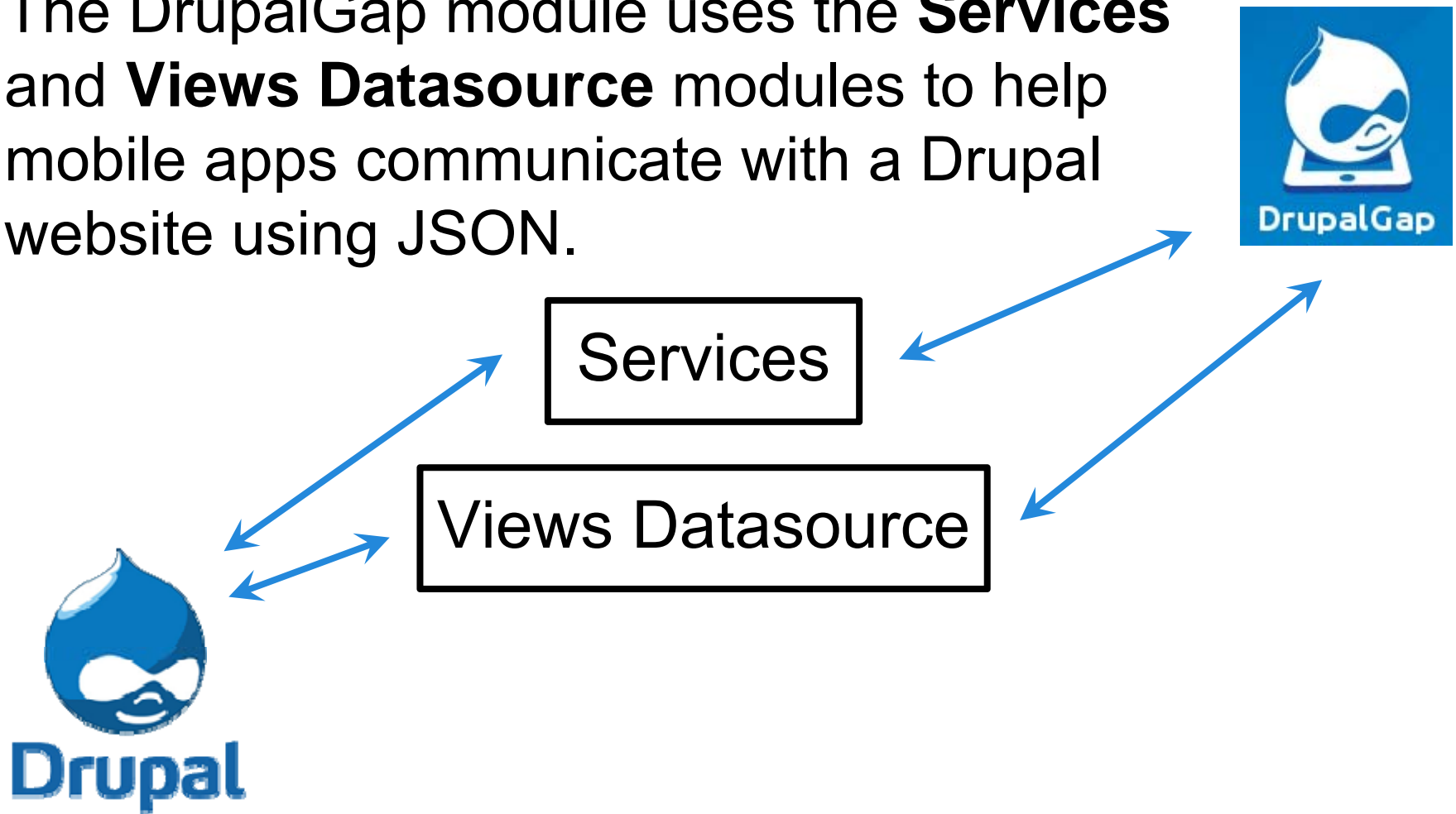
- <http://www.drupal.org/project/drupalgap>
- <https://www.github.com/signalpoint/DrupalGap>

The **Drupal Module** opens up communication possibilities between a mobile app and the website. The **Mobile Application Development Kit** is used by developers to create custom mobile applications.

Let's first look at the DrupalGap module...

How does the DrupalGap module work?

The DrupalGap module uses the **Services** and **Views Datasource** modules to help mobile apps communicate with a Drupal website using JSON.



What tools does the DrupalGap mobile application development kit use to build apps?



DrupalGap uses jQueryMobile to build the user interface and PhoneGap to compile the App for installation on Android and iOS mobile devices.



PhoneGap



iOS



Let's first look at how PhoneGap works...

How does PhoneGap work?

PhoneGap takes HTML, CSS and JavaScript and compiles it into a Mobile Application for iOS and Android mobile devices.

PhoneGap provides access via JavaScript to device features such as the Camera, GPS, File System, Contacts, Compass, accelerometer, etc.

If we can build a website, then we can build a mobile app for multiple platforms, with one set of code...

HTML + CSS + JavaScript

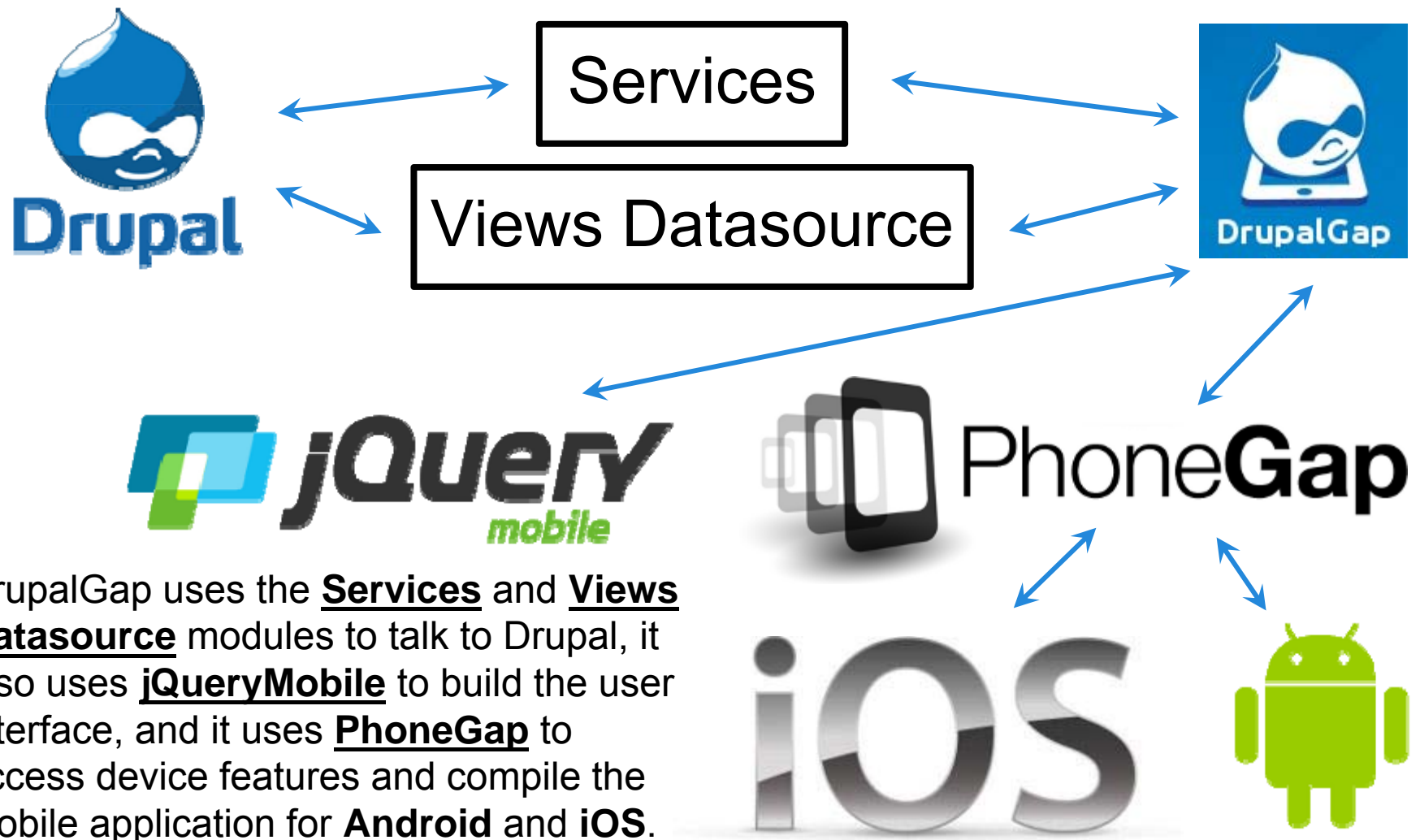


PhoneGap

iOS



Putting it all together...



DrupalGap uses the **Services** and **Views Datasource** modules to talk to Drupal, it also uses **jQueryMobile** to build the user interface, and it uses **PhoneGap** to access device features and compile the mobile application for **Android** and **iOS**.

To Get Started, Enable the DrupalGap Module on a Drupal Website

- **DrupalGap** module

- <http://www.drupal.org/project/drupalgap> *and any sub-modules that you need.*
- Check that DG module installed properly by visiting the config page `/admin/config/services/drupalgap`.

Dependencies:

- **REST Server** module
 - (available in the **Services module**)
 - <http://www.drupal.org/project/services>
- **Views JSON** module
 - (available in the **Views Datasource module**)
 - http://www.drupal.org/project/views_datasource
- **Libraries** module
 - <https://www.drupal.org/project/libraries>

Introducing the DrupalGap Mobile App Development Kit (MADK)

Place the DrupalGap mobile app development kit (<https://www.github.com/signalpoint/DrupalGap>) files into PhoneGap's www directory to utilize its features:

- `~/mynewapp/www/index.html`
- `~/mynewapp/www/bin/drupalgap.js`
- ... etc ...

DrupalGap Mobile App Development Kit (MADK) Cont.

- DG core comes packaged as a single Javascript file:
~/mynewapp/www/bin/drupalgap.js
- It also comes with a default theme:
~/mynewapp/www/themes/*
Note: You add your custom themes to ~/mynewapp/www/app/themes/*
- Default settings:
~/mynewapp/www/app/default.settings.js
- A place to house all of the custom code for our app:
~/mynewapp/www/app/*
NOTE: The "app" directory is similar to the "sites/all" directory in Drupal.
- DG also comes with all of its own source code (for Developers): ~/mynewapp/www/src/*

Save a copy of `default.settings.js` as `settings.js`, then set the `site_path`

`~/mynewapp/www/app/default.settings.js`



`~/mynewapp/www/app/settings.js`

Then open `settings.js` and set the `site_path` variable to your Drupal site:

`// Site Path`

`drupalgap.settings.site_path = 'http://www.example.com';`

or `http://localhost/example`

or `http://example` (Add this line to your host file for windows "127.0.0.1 example")

Set up a Mobile Application Development Testing Environment

Since DrupalGap utilizes the power of PhoneGap, we need to set up a PhoneGap mobile application development environment

(<http://www.drupalgap.org/node/132>) for DrupalGap, before building and testing our mobile application.

*We will be using Google Chrome and Ripple Emulator plugin setup is detailed here <http://www.drupalgap.org/node/103>.

Set up a Mobile Application Development Testing Environment - Part 1

1. Download and Install Google Chrome browser
<http://www.google.com/chrome>

2. Add the Ripple Plugin to Chrome
<http://emulate.phonegap.com/> - Click on the link to add the plugin to your browser.

*Note, do not use the URL text field provided on this website.

Set up a Mobile Application Development Testing Environment - Part 2

3. Create a Folder to Run the Mobile Application and copy the content from ~/mynewapp/www/ folder into this new folder called “mobile-application”.

Say for example, we had a Drupal 7 website available at <http://www.example.com>. We then recommend creating a folder called 'mobile-application' for the app to run in, for example:

<http://www.example.com/mobile-application> or
or <http://localhost/example/mobile-application>
or <http://example/mobile-application>

NOTE: Do NOT use 'drupalgap' or 'app' as the folder name. Also, do NOT set up a subdomain like <http://mobile-application.example.com> to run the app in. This will most likely cause "cross site" request forgery issues.

Set up a Mobile Application Development Testing Environment - Part 3

4. Replace index.html with ripple.index.html

Copy the contents of the ripple.index.html file and save it into the index.html file:

```
http://www.example.com/mobile-application/index.html <--- ripple.index.html
```

Set up a Mobile Application Development Testing Environment - Part 4

5. Navigate to Subdomain in Google Chrome. Open up the Google Chrome browser and navigate to the mobile application, for example: <http://www.example.com/mobile-application>

If a blank white page loads, click the Ripple icon in Google Chrome to enable Ripple on the page and then navigate back to your page.

Once Ripple loads, it may ask us which platform we would like to use, select: Apache Cordova (1.0.0)

Please Note: If you are having trouble getting the app to load you might need to change the "Cross Domain Proxy" under settings on the right hand side of Ripple to "Disable".

If you're still having troubles loading the app in Ripple, try a URL like this in Chrome:

<http://www.example.com/mobile-application/index.html?enableripple=cordova-3.5.0>

The DrupalGap mobile application development kit is installed, now what?

DrupalGap utilizes familiar Drupal concepts like...

- Themes
- Regions
- Blocks
- Menus
- Pages

... and techniques for customization such as...

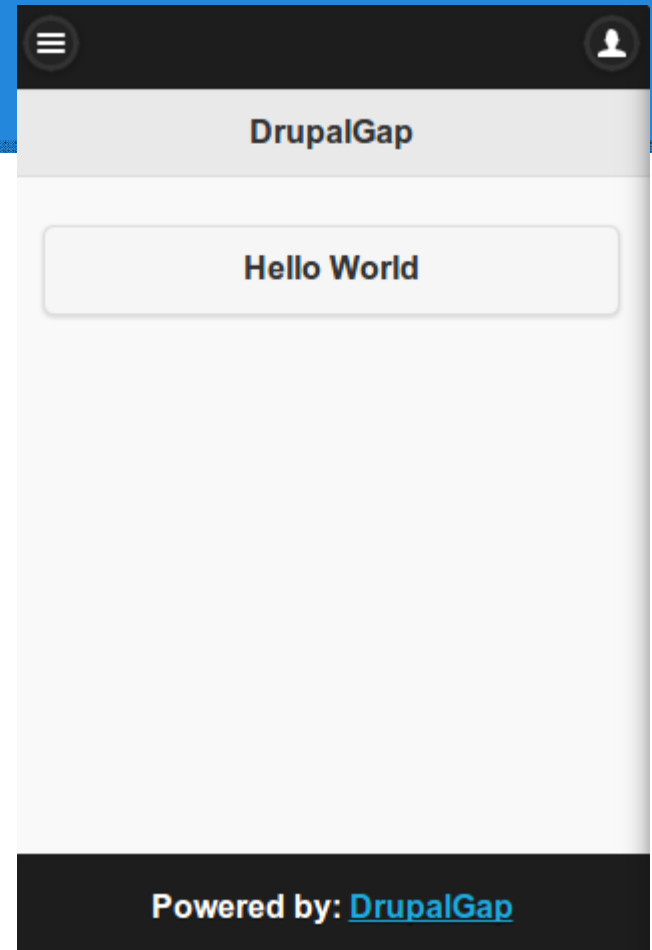
- Modules
- Hooks
- Themes
- Templates

Next, let's examine how to add a page in DrupalGap...

Let's Add a Custom Page using DrupalGap

To create the content of this app's page, we will take an approach very similar to creating a page in **Drupal**, by using **hook_menu()**.

<http://www.drupalgap.org/hello-world>



But instead of using **PHP in Drupal**, we'll be using **JavaScript in PhoneGap**. Let's start by creating a custom module in DrupalGap...

Build a custom module in DrupalGap

Add a directory and JavaScript file for the module in the DrupalGap **'app'** folder:

`www/app/modules/custom/my_module/my_module.js`

Now we tell DrupalGap about our custom module in the `www/app/settings.js` file:

```
/** Custom Modules - www/app/modules/custom */  
Drupal.modules.custom['my_module'] = {};
```

*For the next step, we'll implement **hook_menu()** and add a **callback** function to handle the page's content display using JavaScript...*

```
/**  
* Implements hook_menu().  
*/  
function my_module_menu() {  
  var items = {};  
  items['hello_world'] = {  
    title: 'DrupalGap',  
    page_callback: 'my_module_hello_world_page'  
  };  
  return items;  
}
```

```
/**  
* The callback for the "Hello World" page.  
*/  
function my_module_hello_world_page() {  
  var content = {};  
  content['my_button'] = {  
    theme: 'button',  
    text: 'Hello World',  
    attributes: {  
      onclick: "drupalgap_alert('Hi!')"  
    }  
  };  
  return content;  
}
```

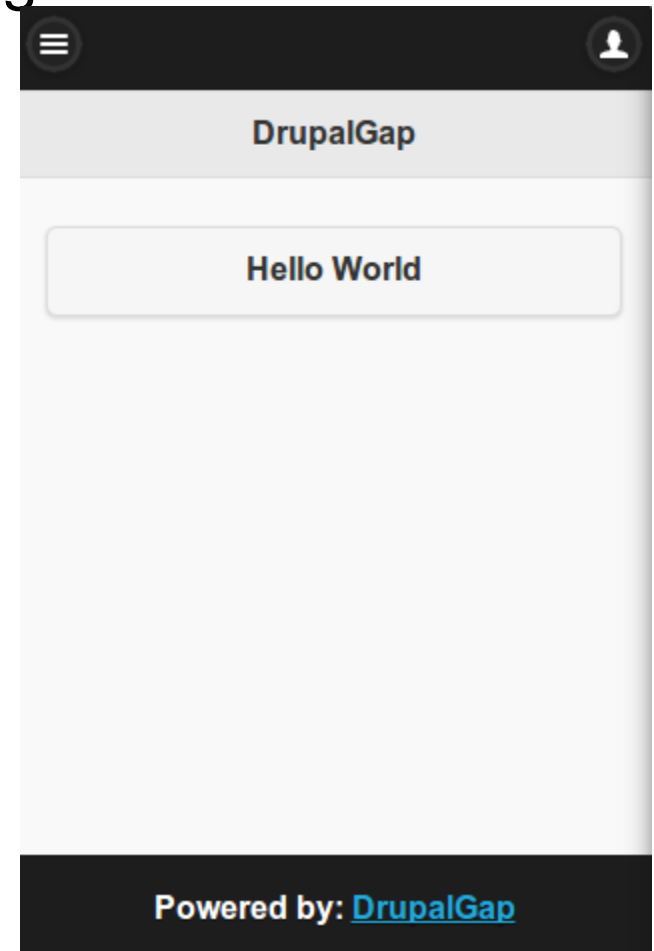
Set the App's front page in the settings.js file

Open **settings.js** and set the **front** variable equal to the path of the newly created DrupalGap page:

```
// App Front Page
```

```
drupalgap.settings.front = 'hello_world';
```

Now if we run this DrupalGap mobile app, we'll have a page very similar to this. The page has the **title** and **body** content we specified in our custom module.



Demonstration Time!



MAKE GIFS AT GIFSOU.P.COM

Where to go next with DrupalGap



<http://www.drupalgap.org>

- Hello World (which we did)
- Getting Started Guide
- Example Code
- Troubleshooting Topics
- Contributed Modules and Sandboxes
- Next, try placing a **JSON view** into your app (<http://www.drupalgap.org/views>)

<http://api.drupalgap.org>

Tips and Tricks Time!



Tips and Tricks - CLI Part 1

Start your App Using Command line interface (CLI)

- cordova create myapp com.example.myapp myapp (NO CAPS AT ALL. Can't have dashes or underscores in it - <http://coenraets.org/blog/cordova-phonegap-3-tutorial/>)
- cd myapp (Go into the myapp folder)
- cordova -d platform add android (Add Android Platform)
cordova platform add ios (Add iOS Platform)
- Add Plugins (cordova plugin add org.apache.cordova.device)
- cordova build android (Build Android Platform)
sudo cordova build ios (Build iOS Platform)
- Go to Eclipse or Xcode and open up file that was created.

Android - http://docs.phonegap.com/en/3.4.0/guide_platforms_android_index.md.html#Android%20Platform%20Guide *

iOS - http://docs.phonegap.com/en/3.4.0/guide_platforms_ios_index.md.html#iOS%20Platform%20Guide *

* You might have to update the URL to version of PhoneGap you are using this example is using phonegap 3.4

Tips and Tricks - CLI Part 2

More Command line interface (CLI) help

- Don't forget about plugins

List all Plugins currently installed: cordova plugin ls

remove a plugin: cordova plugin rm

org.apache.cordova.inappbrowser

- Emulator Troubles with Eclipse

adb devices (See what devices are available.)

phonegap install --emulator=emulator-5554 android

(Install app to emulator)

- cordova info (Displays the details about your project)
- cordova -version (Display version of cordova)

Tips and Tricks - iOS

- For Macs add sudo to the beginning of your CLI calls to have it run as a the super user.
Ex: sudo cordova build ios (Allows CLI to create folders)
- IOS Status Bar Fix/Hide:
<http://stackoverflow.com/questions/18886195/ios-7-status-bar-overlapping-ui>
 - View controller-based status bar appearance: NO
 - Status bar is initially hidden : YES
- Adding App To Apple App Store: Great walk through -
<http://www.youtube.com/watch?v=rRIOdp4uZoo>
- Allow plenty of time for your app to get through the Apple App Store. It could take a minimum of 2 weeks. It can take much longer so be ready. You can request your app to be expedited but they don't have to accept it.
- Open All links in Safari browser not using in app broswing in iOS devices Code is in description of video. Xcode will help you fix the code and it works great <https://www.youtube.com/watch?v=zqbjXSnAR-Q>.

Tips and Tricks - Android

- Wifi To work on android emulator -
(<http://stackoverflow.com/questions/2437366/android-emulator-internet-access>)
- Getting app ready for Android App Store (User Account takes time to register as a google developer)
<http://developer.android.com/tools/publishing/app-signing.html>
- When Coding anything in Javascript for DG put it inside a try catch and write the error to the console log. Helps with debugging and still allows the rest of the file to run.

```
try { /*Javascript Code Goes Here*/ }  
catch (error) { console.log('Error - ' + error); }
```

Tips and Tricks Cont.

- PhoneGap Directory Info: You work in the www folder and then when you build your app it automatically pushes the content to the build folder you specify iOS or android.
- DG - Minimum regions areas required header, content, footer.

Tips and Tricks Cont.

DrupalGap has **Pages**, **Forms** and an **API** built in to work with Drupal's Core **Entities** and **Fields**, and any custom **Content Types** on your site.

Create, Retrieve, Update and Delete

- **Nodes** (*Ex URLs: node/123, node/123/edit*)
- **Users** (*Ex URLs: user/1, user/1/edit, user/login, user/logout, user/register*)
- **Comments**
- **Taxonomy Vocabularies** (*Ex URLs: taxonomy/term/1*)
- **Taxonomy Terms** (*Ex URLs: taxonomy/term/1*)

For consistency, the core DrupalGap **page paths** (listed above) are the same as the **page paths** utilized in Drupal.

Please note, not all core Fields are supported yet.

How to Get Involved

Have an idea about how DrupalGap can be improved? Spotted a bug?
Squashed a bug?

- View the [DrupalGap contributions page](http://drupalgap.org/contribute) (<http://drupalgap.org/contribute>) to learn more about getting involved
- Join the [DrupalGap Association](http://drupalgap.org/association) (<http://drupalgap.org/association>) or [make a donation](http://drupalgap.org/donate) (<http://drupalgap.org/donate>) to support DrupalGap

Need Help?

- [Getting Started](http://drupalgap.org/get-started) - <http://drupalgap.org/get-started>
- [Troubleshooting](http://drupalgap.org/troubleshoot) - <http://drupalgap.org/troubleshoot>
- [Upgrading](http://drupalgap.org/upgrade) - <http://drupalgap.org/upgrade>
- [Support Topics](http://drupalgap.org/support) - <http://drupalgap.org/support>
- [Premium Support](http://drupalgap.org/premium-support) - <http://drupalgap.org/premium-support>

(see the [partner program](http://easystreet3.com/partners) (<http://easystreet3.com/partners>) for discounts)



Stay Connected

- [Follow DrupalGap on Twitter](https://twitter.com/DrupalGap) - <https://twitter.com/DrupalGap>
 - [Like DrupalGap on Facebook](http://facebook.com/drupalgap) - <http://facebook.com/drupalgap>
- Thanks, and happy coding!

[Signup for DrupalGap updates](http://www.drupalgap.com/newsletter/updates)
<http://www.drupalgap.com/newsletter/updates>

Questions and Contact Information!

?Questions Time?

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IRC Chat Name: JoeRobertsPhotog



IRC Chat:

URL: <http://webchat.freenode.net/>

Channel: #drupal-drupalgap

*****SPECIAL THANKS** to the creator of DrupalGap Tyler Frankenstein.

IRC Chat Name: frankenstein