

Cordova

Building Hybrid Mobile App
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Pré-Requisitos

- Node.js:
 - apesar de não ser obrigatório o seu uso junto com o Cordova, ele é adotado para prover um ambiente interativo de desenvolvimento
 - Reduz a necessidade de utilização de dispositivos físicos ou emulados para realizar os testes
- SDK da Plataforma do Aplicativo
 - iOS, Android, Windows 8 ou FireOS (entre outros)
 - Neste curso será adotado Android
- JDK
 - Versão 1.7 ou superior

Instalação

- Instalar o npm (Node Package Manager)
- Instalar o SDK do Android
- Instalar o Cordova via **npm**
`$ sudo npm install -g cordova`
- Testando o Cordova
`$ cordova --version #imprime a versão é 5.2.0`

Criando um Projeto Cordova

#1/4

- Usando a ferramenta `<sdk-path>/tools/android` do **Android SDK** para criar um projeto de aplicação são necessárias as seguintes informações:
 - **Nome da Activity principal** (ex. ActivityMain)
 - **Nome do pacote** (ex. ifpb.pdm)
 - **Diretório de destino** (ex. /myapp)
 - **Plataforma alvo** (ex. android-14)

Criando um Projeto Cordova

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- A ferramenta *cordova* necessita das seguintes informações, basicamente:
 - **Nome da Activity principal** (ex. AGCordova)
 - **Nome do pacote** (ex. ifpb.pdm.cordova)
 - **Diretório de destino** (ex. ./app)

Criando um Projeto Cordova

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```
Synopsis
cordova create <PATH> [ID [NAME [CONFIG]]] [options] [PLATFORM...]
Create a Cordova project
old           workspace          aula-javascript-
              basica.pdf        aula-javascript-
              basica.pptx       Cordova.pptx
                        Ionic Framework
                        copy.pptx      Ionic
                        Framework.pptx IonicFra
PATH ..... Where to create the project
ID ..... reverse-domain-style package name - used in <widget id>
NAME ..... human readable field
CONFIG ..... json string whose key/values will be included in
              [PATH]/.cordova/config.json
```

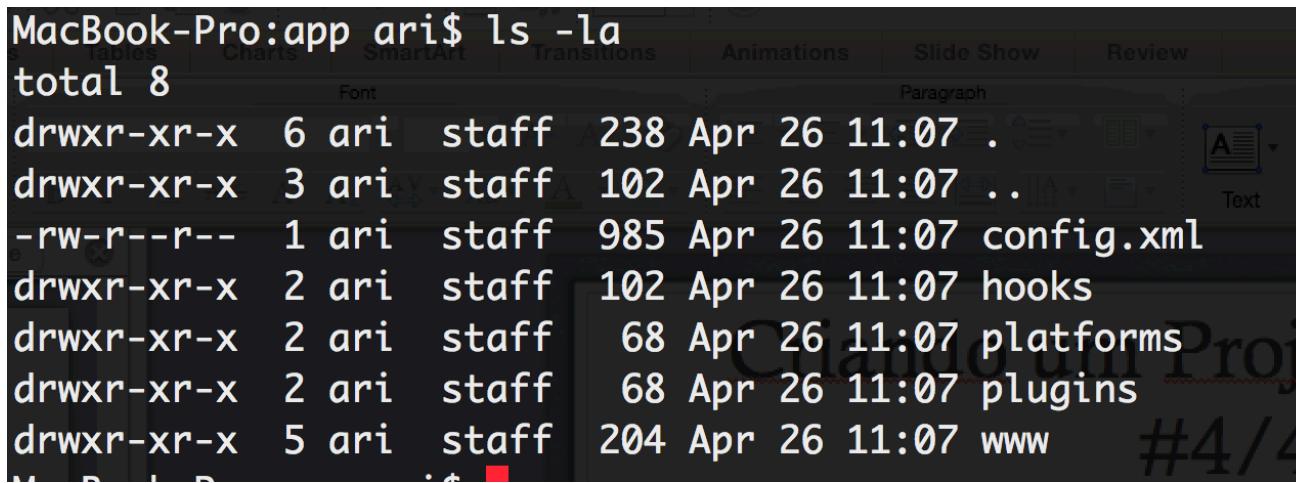
Criando um Projeto Cordova

#4/4

- Execute a seguinte linha de comando:

```
1  
2 $ cordova create ./app ifpb.pdm.cordova AGCordova  
3
```

- O resultado será:



MacBook-Pro:app ari\$ ls -la

	File Type	Owner	Group	Size	Date	Time	Name
	total	8					
drwxr-xr-x	6	ari	staff	238	Apr 26	11:07	.
drwxr-xr-x	3	ari	staff	102	Apr 26	11:07	..
-rw-r--r--	1	ari	staff	985	Apr 26	11:07	config.xml
drwxr-xr-x	2	ari	staff	102	Apr 26	11:07	hooks
drwxr-xr-x	2	ari	staff	68	Apr 26	11:07	platforms
drwxr-xr-x	2	ari	staff	68	Apr 26	11:07	plugins
drwxr-xr-x	5	ari	staff	204	Apr 26	11:07	www

Adicionando a Plataforma

- Por ser um tipo de projeto híbrido, pode-se adicionar diversas plataformas, por isto este passo é feito separadamente:

```
1  
5 $ cordova platforms add android #irá instalar a plataforma plugins  
6 $ cordova platforms add browser #irá instalar a plataforma plugins  
7
```

Adicionando a Plataforma

- Resultado da inclusão da plataforma android:

```
MacBook-Pro:app ari$ cordova platforms add android
Adding android project...rowser-
Creating Cordova project for the Android platform:
  Path: platforms/android
  Package: ifpb.pdm.cordova
  Name: AGCordova
  Activity: MainActivity
  Android target: android-22
Copying template files...
Android project created with cordova-android@4.1.1
Discovered plugin "cordova-plugin-whitelist" in config.xml. Installing to the project
Fetching plugin "cordova-plugin-whitelist@1" via npm
Installing "cordova-plugin-whitelist" for android
```

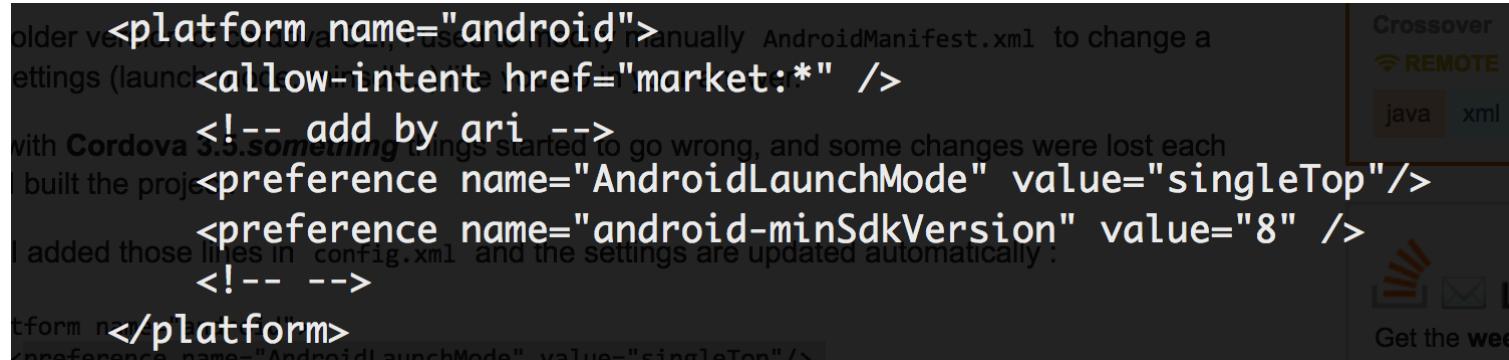
Adicionando a Plataforma

- Para conhecer as plataformas disponíveis:

```
MacBook-Pro:app ari$ cordova platform list
Installed platforms:
Available platforms: amazon-fireos, android, blackberry10, browser, firefoxos, ios, webos
MacBook-Pro:app ari$
```

Adicionando a Plataforma

- Para alterar a versão do android, adicione em *config.xml* a versão mínima antes de adicionar a plataforma:

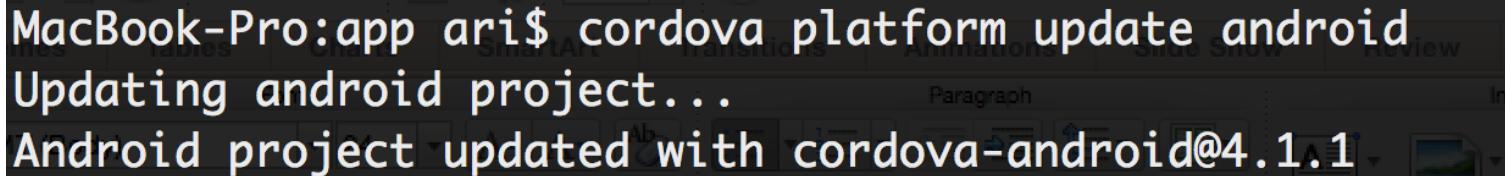


The screenshot shows a terminal window with the following content:

```
older versions of Cordova used to manually change a
ettings (launched from the command line) to change a
with Cordova 3.5.something things started to go wrong, and some changes were lost each
built the project. I added those lines in config.xml and the settings are updated automatically:
<!-- add by ari -->
<preference name="AndroidLaunchMode" value="singleTop"/>
<preference name="android-minSdkVersion" value="8" />
<!-- -->
</platform>
```

The terminal window has a dark theme with light-colored text. It includes a sidebar with icons for Crossover, REMOTE, java, xml, and Get the wee.

- Se for após é necessário atualizar



The screenshot shows a terminal window with the following content:

```
MacBook-Pro:app ari$ cordova platform update android
Updating android project...
Android project updated with cordova-android@4.1.1
```

The terminal window has a dark theme with light-colored text. It includes a sidebar with icons for Paragraph, Insert, and other document-related functions.

Adicionando a Plataforma

- Cordova deve ser implementado com versão superior a android-14

```
* What went wrong:  
Execution failed for task ':processDebugManifest'.  
> Manifest merger failed : uses-sdk:minSdkVersion 8 cannot be smaller than version 14 declared in library /Volumes/MacintoshHDExt/ari.aula/ifpb.pdm/2015.2/workspace/app/platforms/android/build/intermediates/exploded-aar/android/CordovaLib/unspecified/debug/AndroidManifest.xml  
    Suggestion: use tools:overrideLibrary="org.apache.cordova" to force usage
```

Executando e Emulando

- Executando no browser:

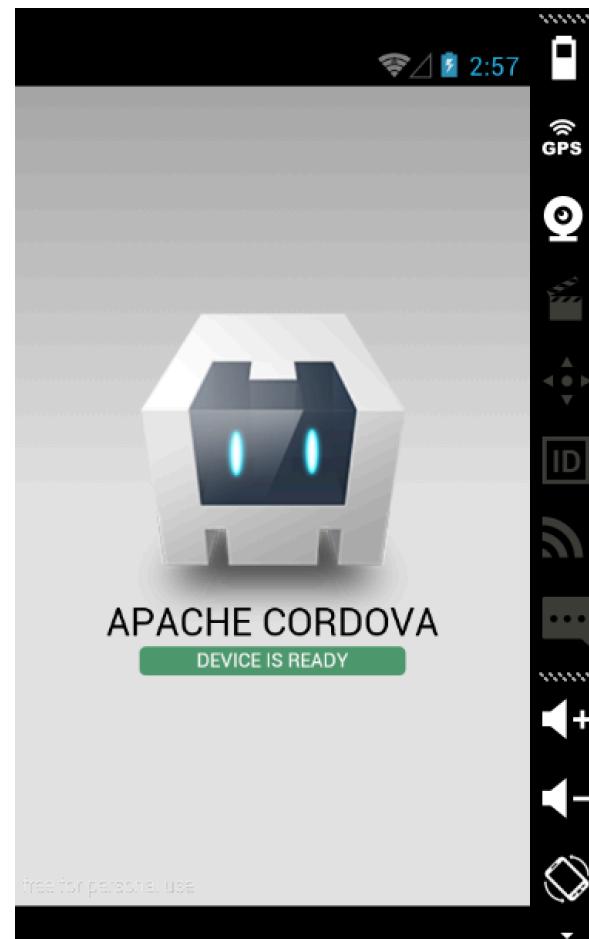
```
MacBook-Pro:app ari$ cordova serve
Static file server running on port 8000 (i.e. http://localhost:8000)
CTRL + C to shut down
lerke - 2015-12-20 15:05:33 UTC
```

- Emulando (depois de compilar):

```
MacBook-Pro:app ari$ cordova run
Running command: /Volumes/MacintoshHDExt/ari.aula/ifpb.pdm/2015.2/
workspace/app/platforms/android/cordova/run
ANDROID_HOME=/Volumes/MacintoshHDExt/ag.enviroment/android-sdk-mac
osx
JAVA_HOME=/Library/Java/JavaVirtualMachines/jdk1.7.0_75.jdk/Content
s/Home
```

Executando e Emulando

- Resultado



Estruturação do HTML

```
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <!--
5              Customize this policy to fit your own app's needs. For more guidance, see:
6                  https://github.com/apache/cordova-plugin-whitelist/blob/master/README.
7                  md#content-security-policy
8
9              Some notes:
10                 * gap: is required only on iOS (when using UIWebView) and is needed for JS-
11                     >native communication
12                 * https://ssl.gstatic.com is required only on Android and is needed for
13                     TalkBack to function properly
14                 * Disables use of inline scripts in order to mitigate risk of XSS
15                     vulnerabilities. To change this:
16                         * Enable inline JS: add 'unsafe-inline' to default-src
17
18
19             --->
20
21             <meta http-equiv="Content-Security-Policy" content="default-src 'self' data-
22                 gap: https://ssl.gstatic.com 'unsafe-eval'; style-src 'self' 'unsafe-inline';
23                 media-src *">
24
25             <meta name="format-detection" content="telephone=no">
26             <meta name="msapplication-tap-highlight" content="no">
27             <meta name="viewport" content="user-scalable=no, initial-scale=1, maximum-
28                 scale=1, minimum-scale=1, width=device-width">
29             <link rel="stylesheet" type="text/css" href="css/index.css">
30             <title>Hello World</title>
31
32         </head>
33
34         <body>
35             <div class="app">
36                 <h1>Apache Cordova – IFPB App Test</h1>
37                 <div id="deviceready" class="blink">
38                     <p class="event listening">Connecting to Device</p>
39                     <p class="event received">Device is Ready</p>
40                 </div>
41             </div>
42             <script type="text/javascript" src="cordova.js"></script>
43             <script type="text/javascript" src="js/index.js"></script>
44
45         </body>
46
47     </html>
48
49
50
51
52
```

É importante entender que...

- Qualquer código do cordova só deve ser executando quando a aplicação estiver completamente carregada, por isto o controle dos eventos:

```
19 var app = {
20   // Application Constructor
21   initialize: function() {
22     this.bindEvents();
23   },
24   // Bind Event Listeners
25   //
26   // Bind any events that are required on startup. Common events are:
27   // 'load', 'deviceready', 'offline', and 'online'.
28   bindEvents: function() {
29     document.addEventListener('deviceready', this.onDeviceReady, false);
30   },
31   // deviceready Event Handler
32   //
33   // The scope of 'this' is the event. In order to call the 'receivedEvent'
34   // function, we must explicitly call 'app.receivedEvent(...);'
35   onDeviceReady: function() {
36     app.receivedEvent('deviceready');
37   },
38   // Update DOM on a Received Event
39   receivedEvent: function(id) {
40     var parentElement = document.getElementById(id);
41     var listeningElement = parentElement.querySelector('.listening');
42     var receivedElement = parentElement.querySelector('.received');
43
44     listeningElement.setAttribute('style', 'display:none;');
45     receivedElement.setAttribute('style', 'display:block;');
46
47     console.log('Received Event: ' + id);
48   }
49 };
50
51 app.initialize();
```

Para trabalhar no browser

- Trabalhando no browser:

```
MacBook-Pro:app ari$ cordova platform add browser
Adding browser project...
Creating Browser project
Project Path platforms/browser
Package Name ifpb.pdm.cordova
Project Name AGCordova
Installing "cordova-plugin-whitelist" for browser
MacBook-Pro:app ari$ cordova plugin add org.apache.cordova.core.inappbrowser
Fetching plugin "org.apache.cordova.core.inappbrowser" via npm
Fetching plugin "org.apache.cordova.core.inappbrowser" via cordova plugins registry
```

Link para o plugin:

cordova plugin add <https://git-wip-us.apache.org/repos/asf/cordova-plugin-inappbrowser.git>

Outros plugins interessantes

- **org.apache.cordova.device** (informações sobre o dispositivo)
 - *cordova plugin add cordova-plugin-device*
- **org.apache.cordova.console** (imprimir logs)
 - *cordova plugin add cordova-plugin-console*

Outros plugins interessantes

- **org.apache.cordova.dialogs (apresentar mensagem como um alerta no browser)**
 - *cordova plugin add cordova-plugin-dialogs*

navigator.notification.alert

Shows a custom alert or dialog box. Most Cordova implementations use a native dialog box for this feature, but some platforms use the browser's `alert` function, which is typically less customizable.

```
navigator.notification.alert(message, alertCallback, [title], [buttonName])
```

- **message:** Dialog message. (*String*)
- **alertCallback:** Callback to invoke when alert dialog is dismissed. (*Function*)
- **title:** Dialog title. (*String*) (Optional, defaults to Alert)
- **buttonName:** Button name. (*String*) (Optional, defaults to OK)

Exercício

- Desenvolva uma aplicação android híbrida e uma aplicação servidora que possibilite a o cadastro de dados de uma pessoa (nome, cpf, endereço).

