

互联网应用开发技术

*Web Application Development*

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# 第16课 WEB移动端—CORDOVA

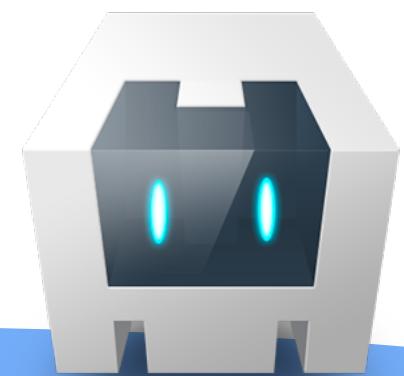
Episode Sixteen  
**Cordova Example**

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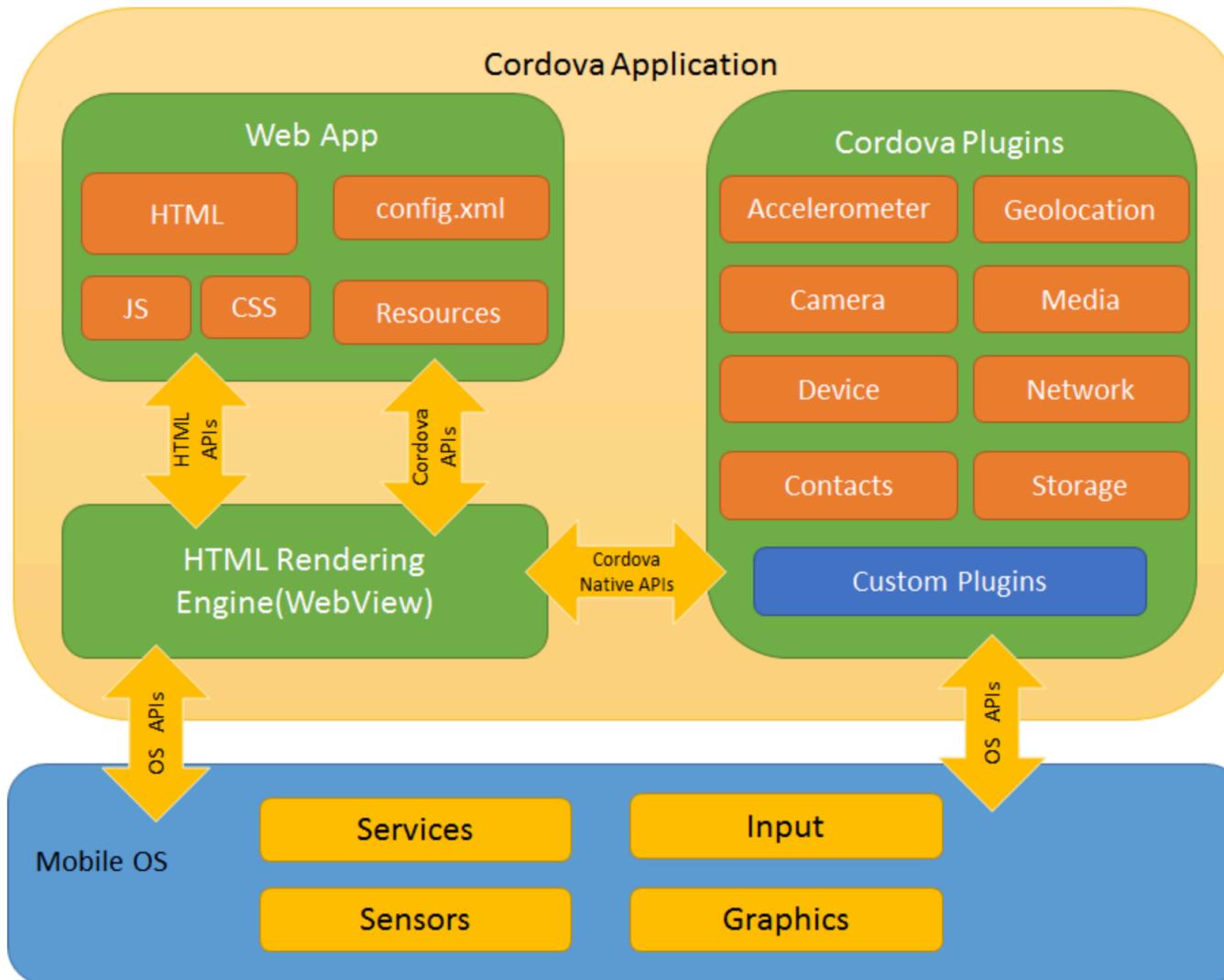


# What is Cordova?

- Apache Cordova is an open-source mobile development framework.
- Allows you to use standard web technologies - HTML5, CSS3, and JavaScript for cross-platform development.
- Applications execute within wrappers targeted to each platform, and rely on standards-compliant API bindings to access each device's capabilities such as sensors, data, network status, etc.

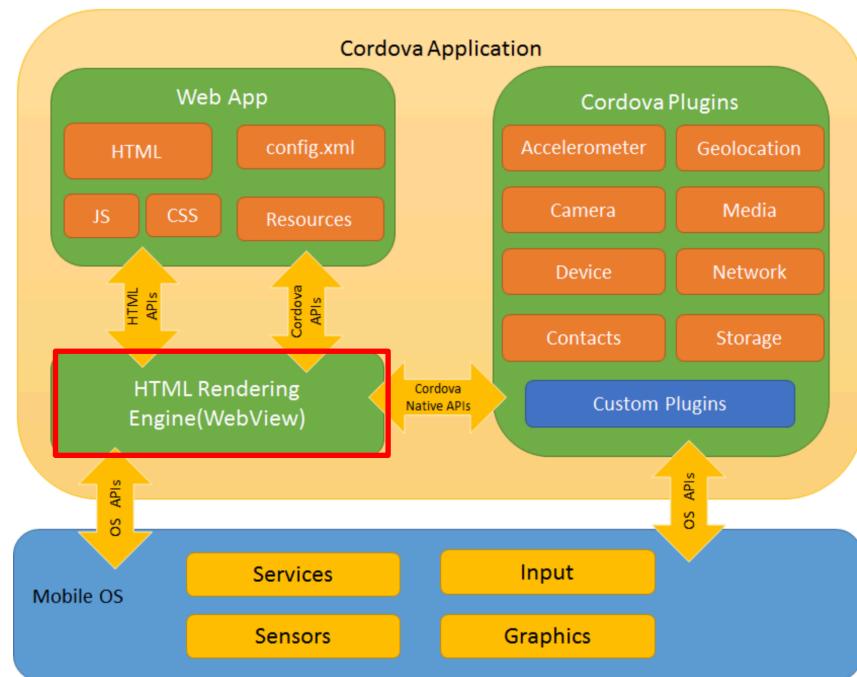


# Cordova Architecture



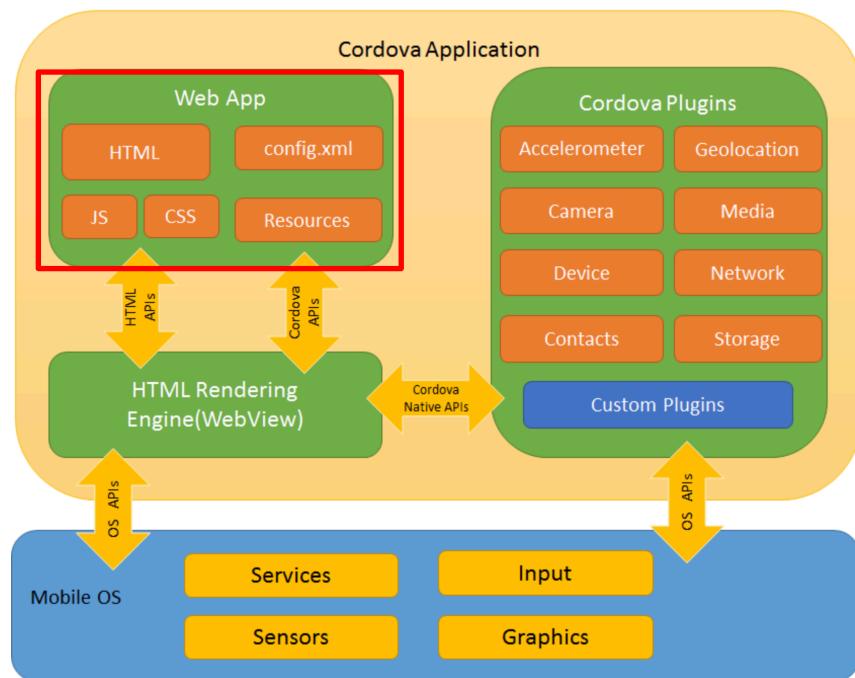
## WebView

provide the application with its entire user interface.



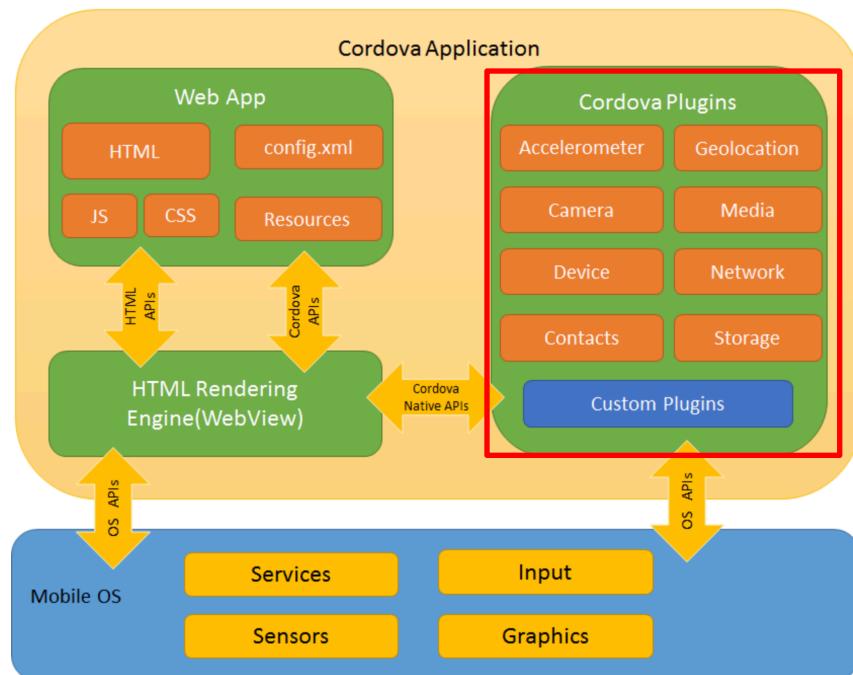
## Web App

- the part where your application code resides.
- The application itself is implemented as a web page, it can contain HTML ,CSS and JS.
- The app executes in a *WebView* within the native application wrapper.



## Plugins

provide an interface for Cordova and native components to communicate with each other and bindings to standard device APIs.



# Cordova Example

## React

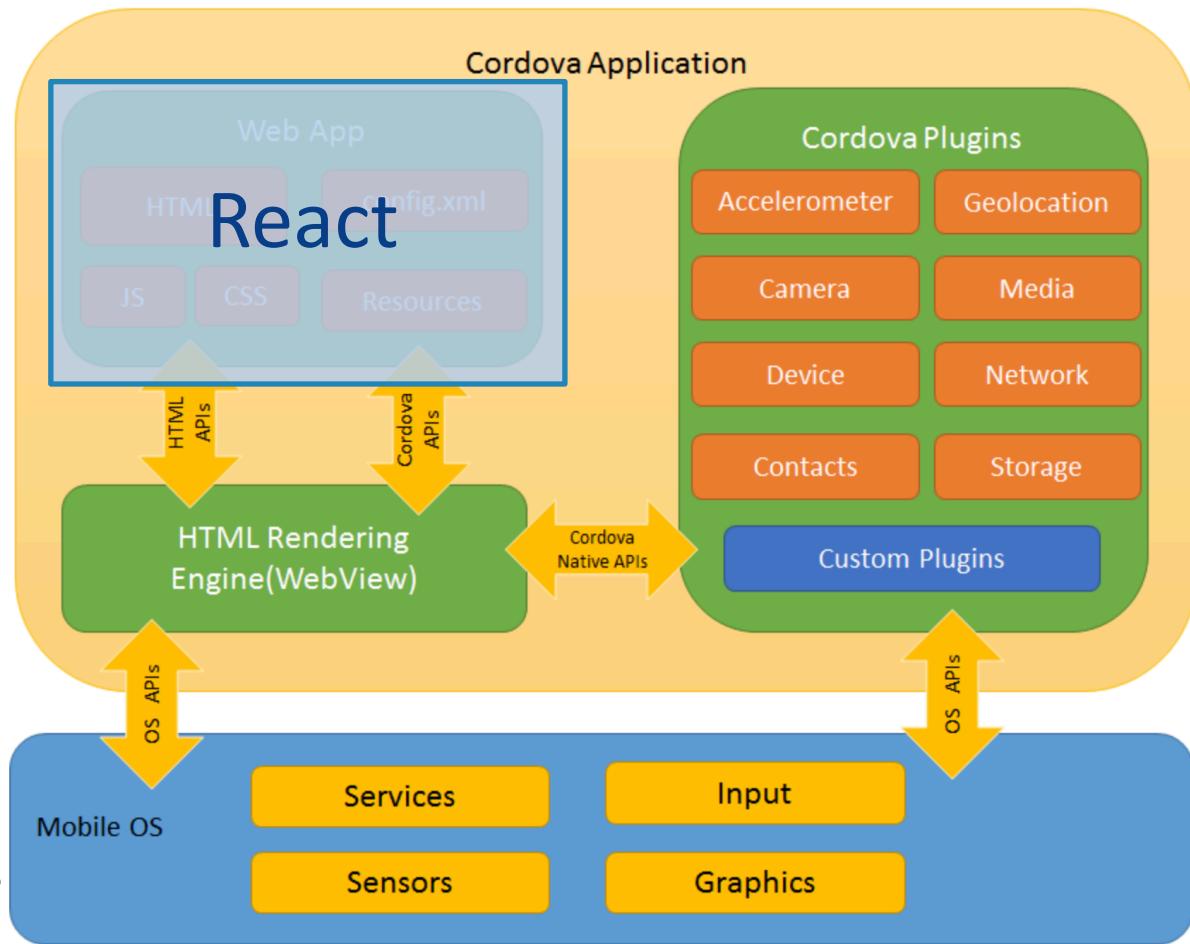
- It is the main part of the program and implements the functions of login and book browsing;
- **Reused** the front-end code of the project bookstore.

## Cordova

- It is used to run React code on mobile.

## SpringBoot

- It interacts with the React code to complete the response.



# Installing the Cordova CLI



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- install the cordova module using **npm** utility of Node.js.  
The cordova module will automatically be downloaded by the npm utility.
- on OS X and Linux:

```
$ sudo npm install -g cordova
```

- on Windows:

```
C:\>npm install -g cordova
```

# Create the App

1. Go to the directory where you maintain your source code;
2. Create a cordova project with this command:

```
$ cordova create hello com.example.hello HelloWorld
```



path      package name      app name

3. Add Platforms:

1. Move to the project directory;
2. Add the platforms that you want to target your app:

```
$ cordova platform add ios --save  
$ cordova platform add android --save
```

3. check your current set of platforms:

```
$ cordova platform ls
```

# Install pre-requisites for building



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- 4. Check if you satisfy requirements for building the platform:

```
$ cordova requirements
```

```
Requirements check results for android:
```

```
Java JDK: installed .
```

```
Android SDK: installed
```

```
Android target: installed android-19,android-21,android-22,android-23,Google Inc.:Google APIs:19,Google Inc.:G
```

```
Gradle: installed
```

```
Requirements check results for ios:
```

```
Apple OS X: not installed
```

```
Cordova tooling for iOS requires Apple OS X
```

```
Error: Some of requirements check failed
```

- If there are some packages still uninstalled, install those dependencies first.
  - Android platform needs JDK, Android SDK and Gradle;
  - IOS platform needs OS X system, xcode and some packages.

- 5. if you satisfy requirements for building the platform, run the following command to build the project :

- For all platforms:

```
$ cordova build
```

- For a specific platforms - 'ios' in this case:

```
cordova build ios
```

- 6. Run a command to rebuild the app and view it within a specific platform's emulator:

```
$ cordova emulate android
```

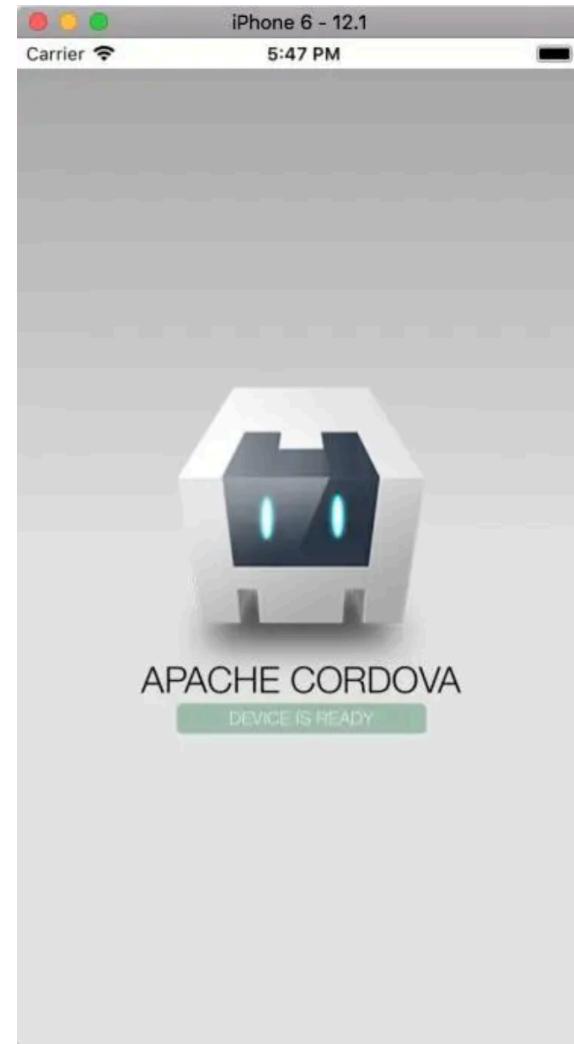
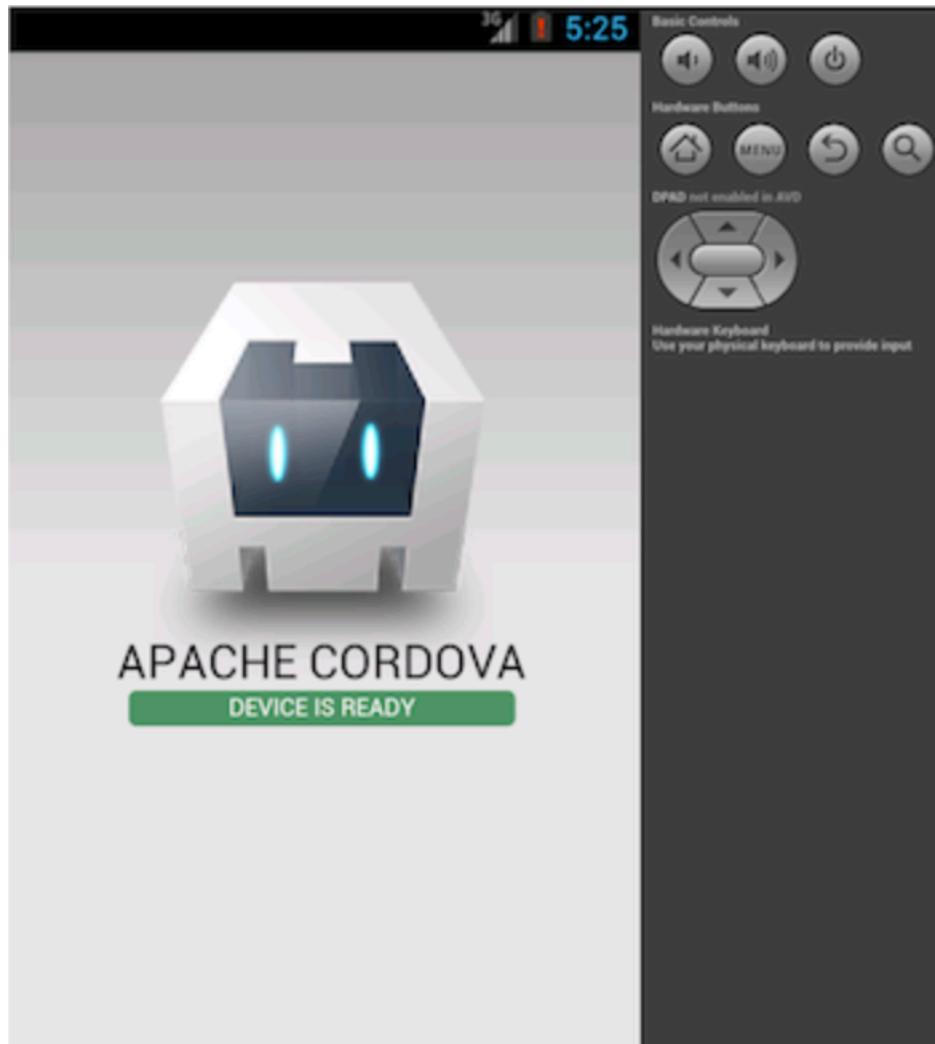
or

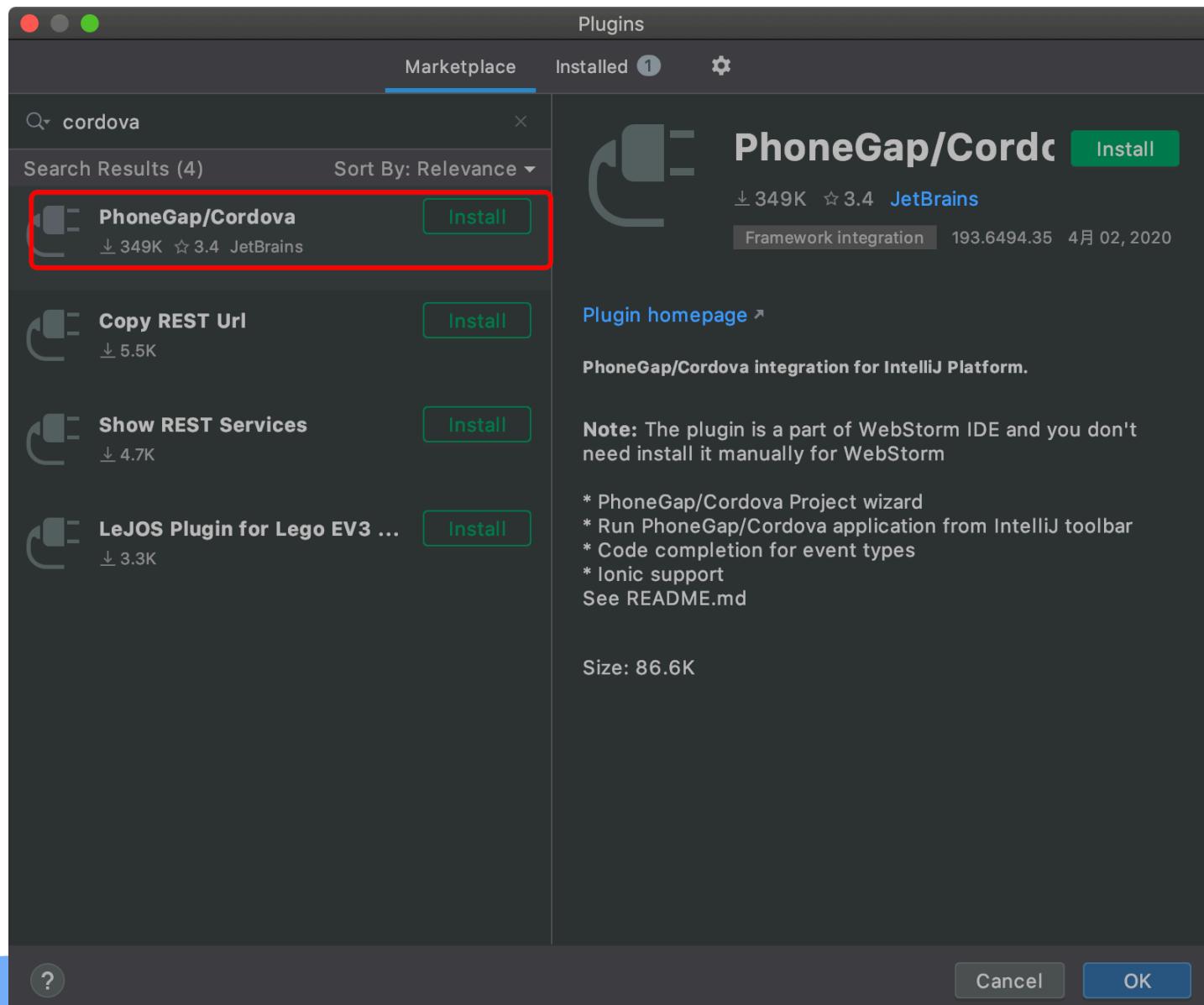
```
$ cordova run android
```

# The Success Page



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The screenshot shows the IntelliJ IDEA Plugins Marketplace interface. A search bar at the top left contains the text "cordova". Below it, the "Marketplace" tab is selected, indicated by a blue underline. To its right is the "Installed" tab with a notification badge "1" and a settings gear icon.

The search results list four items under "Search Results (4)" and "Sort By: Relevance":

- PhoneGap/Cordova** (selected):
  - Install button (highlighted with a red box)
  - Downloads: 349K
  - Rating: 3.4
  - Provider: JetBrains
- Copy REST Url**:
  - Install button
  - Downloads: 5.5K
- Show REST Services**:
  - Install button
  - Downloads: 4.7K
- LeJOS Plugin for Lego EV3 ...**:
  - Install button
  - Downloads: 3.3K

The right panel displays detailed information for the selected "PhoneGap/Cordova" plugin:

- PhoneGap/Cordova** (Large bold title)
- Install** button
- Downloads: 349K
- Rating: 3.4
- Provider: JetBrains
- Framework integration: 193.6494.35 (4月 02, 2020)
- [Plugin homepage](#)
- PhoneGap/Cordova integration for IntelliJ Platform.**
- Note:** The plugin is a part of WebStorm IDE and you don't need install it manually for WebStorm
- \* PhoneGap/Cordova Project wizard
  - \* Run PhoneGap/Cordova application from IntelliJ toolbar
  - \* Code completion for event types
  - \* Ionic support
- [See README.md](#)
- Size: 86.6K
- Buttons at the bottom: **Cancel** and **OK**

# Create New Cordova App



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New Project

The screenshot shows the 'New Project' dialog in IntelliJ IDEA. On the left, there's a sidebar with various project types: Java, Java Enterprise, JBoss, Clouds, Spring, Java FX, Android, IntelliJ Platform Plugin, Spring Initializr, Maven, Gradle, Groovy, Grails, Application Forge, Kotlin, Static Web (which is selected and highlighted in blue), Node.js and NPM, Flash, and Empty Project. The main area is titled 'New Project' and lists several templates: Static Web, HTML5 Boilerplate, React App, Bootstrap, AngularJS, Angular CLI, React Native, Cordova App (which is also highlighted in blue), and Vue.js. Below the list, a note says 'Cordova application skeleton'. At the bottom, there are 'Help' and 'Cancel' buttons on the left, and 'Previous' and 'Next' buttons on the right.

- Java
- Java Enterprise
- JBoss
- Clouds
- Spring
- Java FX
- Android
- IntelliJ Platform Plugin
- Spring Initializr
- Maven
- Gradle
- Groovy
- Grails
- Application Forge
- Kotlin
- Static Web
- Node.js and NPM
- Flash
- Empty Project

Cordova application skeleton

Help Cancel Previous Next

# Run with Emulator



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Run/Debug Configurations

Name: PhoneGap/Cordova run  Share through VCS  Allow parallel run

Cordova executable: /usr/local/bin/cordova

Cordova working directory: /Users/haopengchen/IdeaProjects/se122\_16\_cordovabookstore

Environment variables

Command: emulate

Platform: ios

Extra arguments

Specify target

Before launch: Init Cordova Platform, Activate tool window

Init Cordova Platform

+ - ⚪ ↕

Show this page  Activate tool window

?

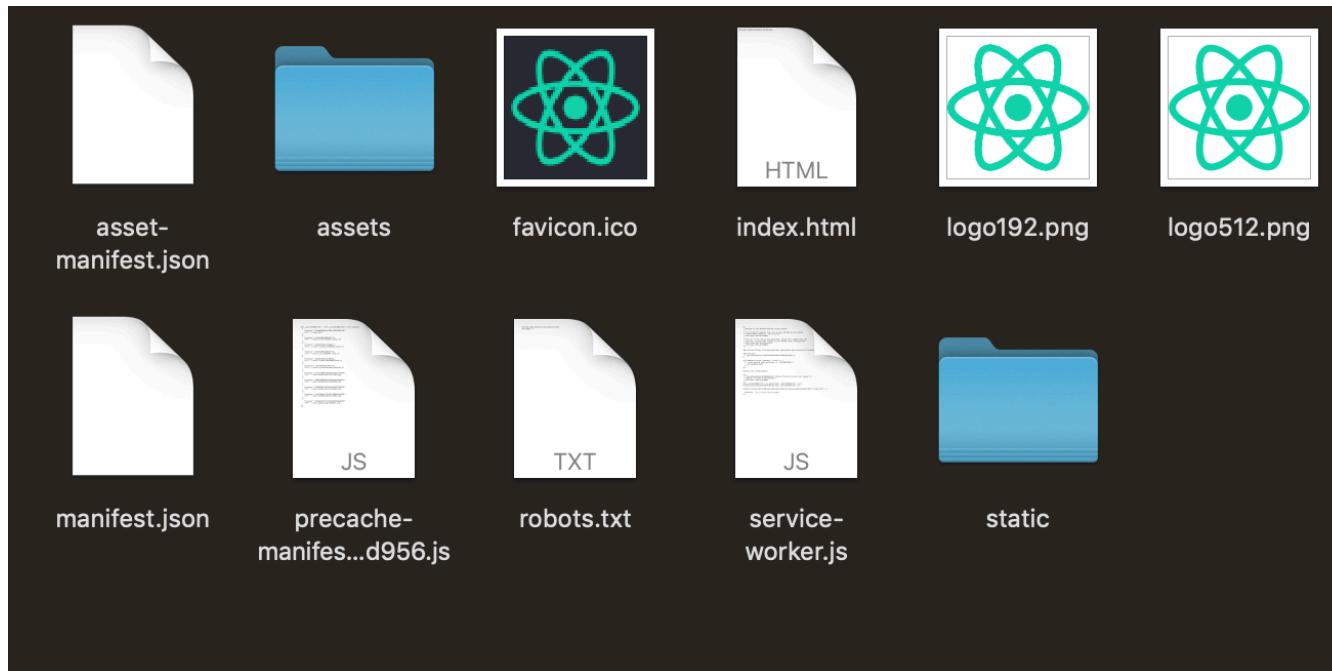
Cancel Apply OK

1. You may first create a react project and implement some features you want to have.
2. Build your project:
  1. First , we need to make sure that all the referenced paths can work in Cordova. For example, we use “/static/in.js” in React, but Cordova can only recognize “ ./static/in.js ” . So we change the “ package.json ” of the React project, add one line like that:

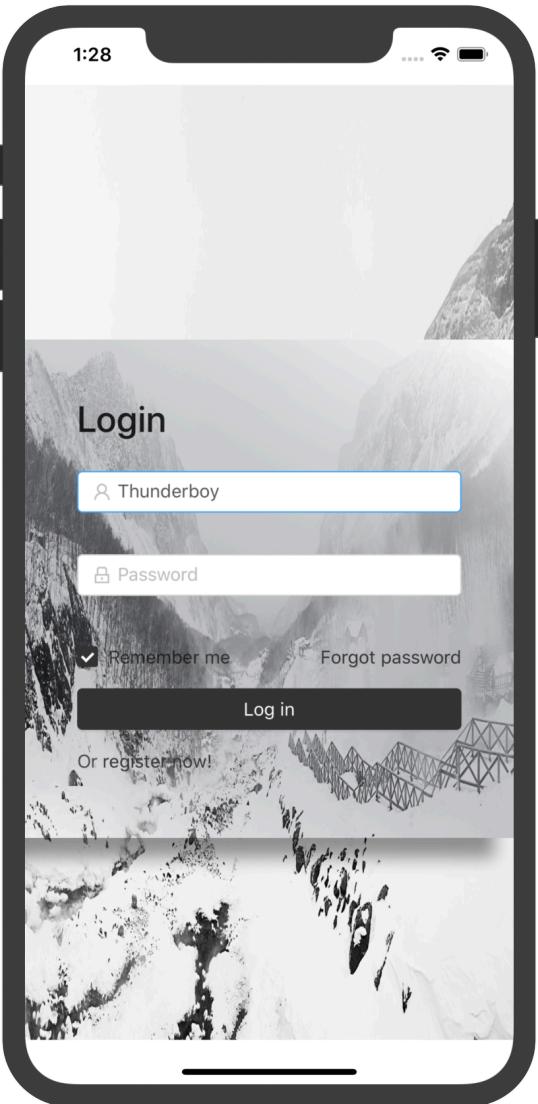
```
"name": "bookstore",
"version": "0.1.0",
"private": true,
"homepage": ".",
"dependencies": {
  "antd": "^3.24.3",
  "react": "^16.11.0",
  "react-app-rewired": "^2.1.5",
  "react-dom": "^16.11.0",
  "react-redux": "^7.1.1",
  "react-router": "^5.1.2",
  "react-router-dom": "^5.1.2",
  "react-scripts": "3.2.0",
  "redux": "^4.0.4"
}
```

# Put React into Cordova

2. Move to the project and run " npm run build" ;
3. Then, you can find a dictionary in your project path like that:



4. You can open index.html with the browser to check the result.
5. Copy all files under "build" folder to "www" folder in Cordova project.



- Apache Cordova
  - <https://cordova.apache.org/#getstarted>
- idea开发cordova项目
  - <https://blog.csdn.net/u010375456/article/details/81172648>
- xcode-select: error: tool 'xcodebuild' requires Xcode, but active developer directory '/Library/Developer/CommandLineTools' is a command line tools instance #569
  - <https://github.com/nodejs/node-gyp/issues/569>
- ios-deploy
  - <https://github.com/ios-control/ios-deploy>
- Cocopods
  - <https://cocoapods.org/>
- Mac下Android SDK配置环境变量的配置（如adb）
  - <https://blog.csdn.net/maoxinwen1/article/details/80113470>
- 用Cordova把react app 打包成原生的iOS项目
  - <https://www.jianshu.com/p/4b54366897c7>



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Thank You!