Android - Implementing Cordova plug-ins

Overview

In some cases, developers of a MobileFirst application might have to use a specific third-party native library or a device function that is not yet available in Apache Cordova.

With Apache Cordova, developers can create an Apache Cordova plug-in, which means that they create custom native code blocks and call these code blocks in their applications by using JavaScript.

Note: In Cordova-based applications, developers must check for the `deviceready` event before they use the Cordova API set. In a MobileFirst application, however, this check is done internally.

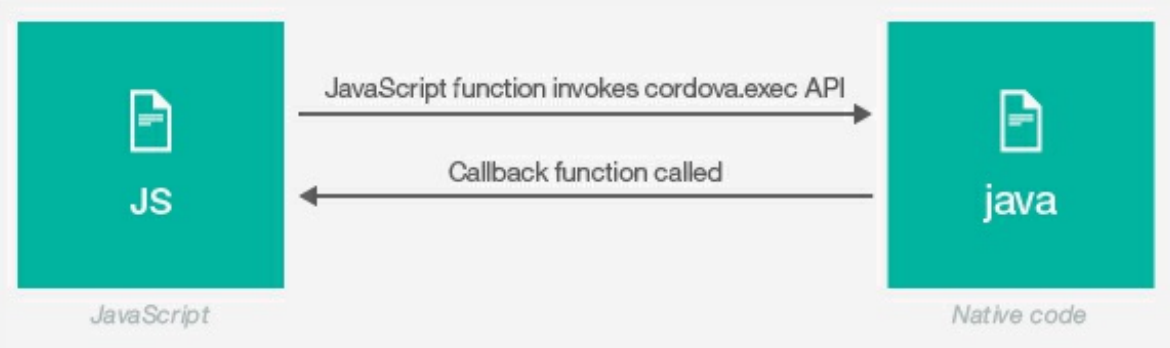
Instead of implementing this check, you can place implementation code in the `wlCommonInit()` function in `common\js\main.js`.

This tutorial demonstrates how to create and integrate a simple Apache Cordova plug-in for Android, in the following topics:

- Creating a plug-in
- Declaring a plug-in
- Implementing cordova.exec() in JavaScript
- Implementing the Java code of a Cordova plug-in
- Sample application

Creating a plug-in

1. Declare the plug-in in the `config.xml` file.
2. Use the `cordova.exec()` API in the JavaScript code.
3. Create the plug-in class that will run natively in Android.
   The plug-in performs the required action and calls a JavaScript callback method that is specified during the call to `cordova.exec()`.



Declaring a plug-in

You must declare the plug-in in the project, so that Cordova can detect it.
To declare the plug-in, add a reference to the `config.xml` file, located in the `native\res\xml` folder in the Android environment.

```
<feature name="sayHelloPlugin">
    <param name="android-package" value="sayHelloPlugin" /
>
</feature>
```

Implementing cordova.exec() in JavaScript

From the JavaScript code of the application, use the `cordova.exec()` method to call the Cordova plug-in:

```
function sayHello() {
    var name = $("#NameInput").val();
    cordova.exec(sayHelloSuccess, sayHelloFailure, "SayHelloPlugin", "sayHello", [name])
;
}
```

`sayHelloSuccess` - Success callback
`sayHelloFailure` - Failure callback
`SayHelloPlugin` - Plug-in name as declared in `config.xml`
`sayHello` - Action name
`[name]` - Parameters array

The plug-in calls the `success` and `failure` callbacks.

```
function sayHelloSuccess(data){
    WL.SimpleDialog.show(
        "Response from plug-in", data,
        [{text: "OK", handler: function() {WL.Logger.debug("Ok button pressed");}}
]
    );
}

function sayHelloFailure(data){
    WL.SimpleDialog.show(
        "Response from plug-in", data,
        [{text: "OK", handler: function() {WL.Logger.debug("Ok button pressed");}}
]
    );
}
```

Implementing the Java code of a Cordova plug-in

After you have declared the plug-in and the JavaScript implementation is ready, you can implement the Cordova plug-in.

1. Add a new Java class file.
2. Extend the `org.apache.cordova.CordovaPlugin` class and add the required import statements.

```
public class SayHelloPlugin extends CordovaPlugin {
```

3. Implement an `execute` method.
   - The arguments contain information that is required by a plug-in, such as action, arguments array, and callback context.

```
public boolean execute(String action, JSONArray args, CallbackContext callbackContex
t) throws JSONException {
```

4. If the supplied action is `sayHello`, retrieve the first argument from the `args` array, prepare a `responseText` string and, by using the `callbackContext` argument, call the `success` callback with this `responseText` string as the argument.

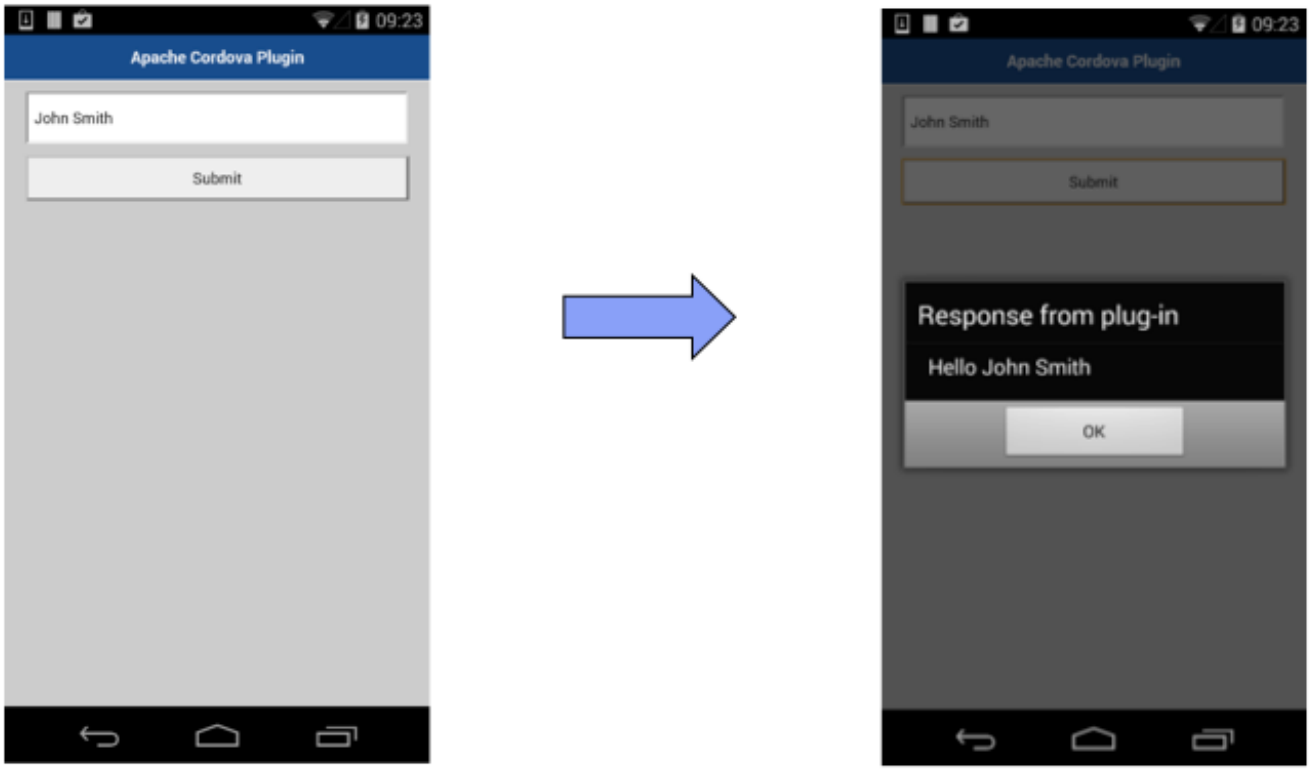
```
if (action.equals("sayHello")) {
   try {
     String responseText = "Hello " + args.getString(0);
     callbackContext.success(responseText);
   } catch (JSONException e){
     callbackContext.error("Failed to parse parameters")
;
   }
   return true;
 }
```

5. Returning `false` means that the action that is supplied from JavaScript was not recognized.

```
   return false;
}
```

Sample application

Click to download (https://github.com/MobileFirst-Platform-Developer-Center/ApacheCordovaPlugins/tree/release71) the MobileFirst project.


09:23
Apache Cordova Plugin
John Smith
Submit
Response from plug-in
Hello John Smith
OK