HYBRID APP DEV Sensors, device info

DR. JAVED KHAN v.j.khan@tue.nl khan.gr @v_j_khan

CREATIVE APPS, DEC2016



PREVIOUS

- UI / interaction guidelines
- Raise awareness about mobile development technologies
- Practice
 - UI -
 - Data

TODAY

- Device Data
- Sensors
- Plugins

Exercise 1: Device Data

- When user taps on a button (i.e. onClick event) show basic device data:
 - Manufacturer
 - Model
 - Platform
- Look at:

http://cordova.apache.org/docs/en/latest/ reference/cordova-plugin-device/ index.html

페. iPhone 중		1	35% 🗈
Manufacturer:Apple Model:iPhone7,2 Platform:ios			
	Get Device Data		

Solution

```
/* button Button */
$(document).on("click", ".uib_w_2", function(evt)
{
    /* your code goes here */
    $('#deviceData').html('Manufacturer:' + device.manufacturer + '<br>');
    $('#deviceData').append('Model:' + device.model + '<br>');
    $('#deviceData').append('Platform:' + device.platform + '<br>');
    return false;
});
```

Note

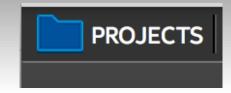
- In the previous exercise you could get the device's data because Cordova's necessary plugin is already included in a new XDK project
- Should you want to add new functionality you need to make sure to FIRST include the necessary plugin

Plugin Types

- There are plugins that are supported by Cordova and these are stable (more mature)
 - http://cordova.apache.org/docs/en/latest/#plugin-apis
 - There are plugins from "third-parties".
 - More "exotic" functionality
 - Might not be as stable or not support all OSs
 - Need to search at: <u>https://cordova.apache.org/plugins/</u>

Add Plugin To Project

- Click on the "Projects" icon (top left)
 Look for "Plugin Management"
- Click "Add Plugins to this Project"



rdova Plugin Explorer		
owse by Source	Plugins	
Core Plugins 🔹 🕨	Battery >	cordova-plugin-battery-status 1.1.2 v
Featured Plugins Third-Party Plugins	Camera Capture	Implements a set of global events that can be used to monitor the battery charge level, a version of the Battery Status Events API.
	Contacts Cordova WKWebView Engine Device © Device Motion Device Orientation File File Transfer Geolocation Globalization InAppBrowser Media	Please follow the plugin documentation link (the page icon at the upper right of this dialog) for API details, supported platforms and software license terms and conditions. This plugin is published with an Apache License, Version 2. Copyright (c) 2012, The Apache Software Foundation.

CORDOVA HYBRID MOBILE APP SETTINGS	
🗆 Plugin Management	
🕂 Add Plugins to this Project	
StatusBar cordova-plugin-statusbar	•
Device cordova-plugin-device	•
Splashscreen cordova-plugin-splashscreen	•
Build Settings	
Eaunch Icons and Splash Screens	

Exercise 2a: Battery

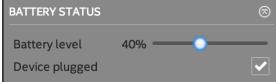
- Get device's battery level and whether it is plugged
- Show previous data on a message

	 	20
Lorem ips	sum dolor sit amet, consectetur adipiscing elit.	
	Button	
Intel® XDK	Level: 100 isPlugged: true	
	Oł	



Exercise 2a: Tips

- Do not forget to add to the project the necessary plugin!!!
- Check plugin documentation
- Official documentation can be accessed directly from XDK:
- Emulator is handy:



Plugins		
Battery 🤣	cordova-plugin-battery-status	
Camera	Implements a set of global events that can be used to monitor the battery cha Get documentation	
Capture	level, a version of the Battery Status Events API.	
Contacts	Please follow the plugin documentation link (the page icon at the upper right of this dialog) for API details, supported platforms and software license terms and	

ttery cha

Get documentation

Exercise 2a: Solution

 (adapted from: <u>http://cordova.apache.org/docs/en/latest/reference/</u> <u>cordova-plugin-battery-status/index.html#example</u>)

```
function register_event_handlers()
{
```

```
window.addEventListener("batterystatus", onBatteryStatus,
false);
```

```
function onBatteryStatus(status) {
    alert("Level: " + status.level + " isPlugged: " +
    status.isPlugged);
}
```

Exercise 2b

- Show to user a message when battery is lowTips:
 - Need to play around with Battery Level
 - Level is device-specific

BATTERY STATUS		
Battery level 13%		ااال iPhone 🗢 🖌 35% 🗈
Battery Level Low 13%		Lorem ipsum dolor sit amet, consectetur adipiscing elit. Button
	ОК	

Exercise 2b: Solution

Got from:

http://cordova.apache.org/docs/en/latest/reference/ cordova-plugin-battery-status/index.html#batterylow-event

```
function register_event_handlers()
```

window.addEventListener("batterylow", onBatteryLow,
false);

```
function onBatteryLow(status) {
    alert("Battery Level Low " + status.level + "%");
}
```

{

Exercise 3a: Contacts

- Find how many contacts exist for a certain name
 - Emulator does not have contacts, need to test Exercises 3 & 4 on your own device
 - Push project to Testing Server (Test tab in XDK)
 - Use Intel's App Preview on your own device

Exercise 3a: Solution

Example

```
function onSuccess(contacts) {
    alert('Found ' + contacts.length + ' contacts.');
};
function onError(contactError) {
    alert('onError!');
};
// find all contacts with 'Bob' in any name field
var options = new ContactFindOptions();
options.filter = "Bob";
options.multiple = true;
options.desiredFields = [navigator.contacts.fieldType.id];
options.hasPhoneNumber = true;
var fields = [navigator.contacts.fieldType.displayName, navigator.contacts.fieldType.id];
options);
```

http://cordova.apache.org/docs/en/latest/reference/cordova-plugin-contacts/index.html#example

Exercise 3b: Contacts

- Make your own contact book finder
- Tip:
 - Start from the ContactName example: <u>http://cordova.apache.org/</u> <u>docs/en/latest/reference/</u> <u>cordova-plugin-contacts/</u> <u>index.html#contactname</u>

ull. iPhone	? 奈	Þ
Search	contact name)
	Find Contacts	
Headin List item	g	
Headin List item	g	
Headin List item	g	

Exercise 3b: Solution

In Wiki



Exercise 4: Location

- When user taps on button find latitude and longitude
 - Tip:
 - Emulator is handy:

Latitude	47.465187	٢
Longitude	-80.522372	

📶 iPhone 奈 🛛 🖌 35% 🗉	ð
Show GPS data here	
Where am I?	

Exercise 4: Solution

function register_event_handlers()
{

```
var onSuccess = function(position) {
    $('#showData').html('Latitude: ' + position.coords.latitude + '<br/>' +
    'Longitude: ' + position.coords.longitude + '<br/>' +
    'Altitude: ' + position.coords.altitude + '<br/>' +
    'Accuracy: ' + position.coords.accuracy + '<br/>' +
    'Altitude Accuracy: ' + position.coords.altitudeAccuracy + '<br/>' +
    'Heading: ' + position.coords.heading + '<br/>' +
    'Speed: ' + position.coords.speed + '<br/>' +
    'Timestamp: ' + position.timestamp + '<br/>');
};
```

```
// onError Callback receives a PositionError object
//
function onError(error) {
    alert('code: ' + error.code + '\n' +
        'message: ' + error.message + '\n');
}
/* button Where am I? */
$(document).on("click", ".uib_w_3", function(evt)
{
    /* your code goes here */
    navigator.geolocation.getCurrentPosition(onSuccess, onError);
});
}
```

```
document.addEventListener("app.Ready", register_event_handlers, false);
```

A REAL PROPERTY AND A REAL PROPERTY A REAL PROPERTY AND A REAL PROPERTY AND A REAL PRO	ուլ. iPhone 奈 🛛 🕂 35% 🕞
	Latitude: 47.465187 Longitude: -80.522372 Altitude: 100 Accuracy: 150 Altitude Accuracy: 80 Heading: NaN Speed: null Timestamp: Wed Dec 21 2016 19:12:03 GMT+0100 (CET)
	Where am I?

Adapted from: http://cordova.apache.org/ docs/en/latest/reference/ cordova-plugin-geolocation/ index.html#example

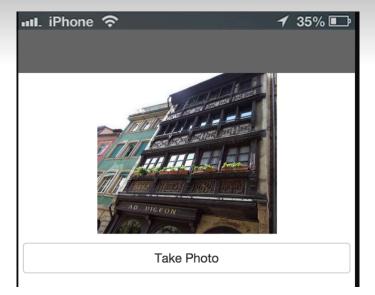
Exercise 5a: Camera

Example:

- UI: header, img, button
- Interaction: when button (*id="btn"*) is clicked camera can be used to take photo, photo is then displayed on img (*id="showPhoto"*)

Try it on your device

 Use "Test" tab: "Push to Testing Sever" in combination with the "App Preview" app on your phone



Exercise 5a: Solution

```
function register_event_handlers()
   function onSuccess(imageURI) {
       var image = document.getElementById('showPhoto');
       image.src = imageURI;
   }
   function onFail(message) {
       alert('Failed because: ' + message);
   }
    /* button #btn */
   $(document).on("click", "#btn", function(evt)
   {
       /* your code goes here */
       navigator.camera.getPicture(onSuccess, onFail, { quality: 50,
       destinationType: Camera.DestinationType.FILE_URI });
  });
```

document.addEventListener("app.Ready", register_event_handlers, false);

Adapted from: http://cordova.apache.org/docs/en/latest/reference/cordova-plugincamera/index.html#example-

{

Exercise 5b: Vibration

- Add to the previous exercise a 1 second vibration when a photo is successfully taken
 - Tip:
 - Look for the appropriate plugin

Happy Coding For 2017!

- Summary:
 - Device Data
 - Sensors
- Next session 9 Jan 2017: more sensorrelated exercises