

CS 696 Emerging Web and Mobile Technologies
Spring Semester, 2011
Doc 12 PhoneGap API
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References

PhoneGap documentation, <http://docs.phonegap.com/index.html>

PhoneGap API

Accelerometer

Camera

Compass

Contacts

Device

Events

File

Geolocation

Media

Network

Notification

Storage

Provides JavaScript access

Not all platforms have access to all API

Debugging JavaScript in PhoneGap

No debugger

Use

`console.log()`

`alert()`

PhoneGap JavaScript console.log(text)

iPhone

Output in console

"Console" item in "Run" menu

Android

Use LogCat

Open DDMS view

"Window" menu, "Open Perspective" item
then "Other" then "DDMS"

If don't have LogCat view then

"Window">"Show View">"LogCat"

PhoneGap Documentation etc.

PhoneGap API documentation contains examples of each function

<http://docs.phonegap.com/index.html>

PhoneGap News Group

<http://groups.google.com/group/phonegap>

Geolocation API

Methods

geolocation.getCurrentPosition
geolocation.watchPosition
geolocation.clearWatch

Arguments

geolocationSuccess (function)
geolocationError (function)
geolocationOptions (Hash)

Example

```
<script type="text/javascript" charset="utf-8">
  function onBodyLoad() { document.addEventListener("deviceready",onDeviceReady,false);}

  function onDeviceReady() {
    navigator.geolocation.getCurrentPosition(onSuccess, onError); }

  function onSuccess(position) {
    var element = document.getElementById('geolocation');
    element.innerHTML = 'Latitude: ' + position.coords.latitude + '<br />' +
      'Longitude: ' + position.coords.longitude + '<br />';
  }

  function onError(error) {
    alert('code: ' + error.code + '\n' + 'message: ' + error.message + '\n');
  }
</script>
</head>
<body onload="onBodyLoad()"> <p id="geolocation">Finding geolocation...</p>
</body>
</html>
```


Output

Latitude: 32.76558

Longitude: -117.073042

Altitude: 156.034813

Accuracy: 17.068495

Altitude Accuracy: 23.164149

Heading: -1

Speed: 0

Timestamp: Thu Jan 15 1970 16:58:58 GMT-0800 (PST)

on iPhone continued to get new readings in the console

Storage

PhoneGap supports

- W3C Web SQL Database (SQL)

- Local Storage (Key-value pairs)

- API same as covered earlier

Android

iOS

BlackBerry WebWorks (OS 6.0+)

Example

```
function populateDB(tx) {
  tx.executeSql('DROP TABLE DEMO');
  tx.executeSql('CREATE TABLE IF NOT EXISTS DEMO (id unique, data)');
  tx.executeSql('INSERT INTO DEMO (id, data) VALUES (1, "First row")');
  tx.executeSql('INSERT INTO DEMO (id, data) VALUES (2, "Second row")');
}

function errorCallback(err) {
  alert("Error processing SQL: "+err.code);
}

function successCB() {
  alert("success!");
}

var db = window.openDatabase("Database", "1.0", "PhoneGap Demo", 200000);
db.transaction(populateDB, errorCallback, successCB);
```

Alerts

```
function alertDismissed() {  
}  
  
function showAlert() {  
  navigator.notification.alert(  
    'You are the winner!', // message  
    alertDismissed,      // callback  
    'Game Over',        // title  
    'Done'               // buttonName  
  );  
}
```

```
</script>
```

```
</head>
```

```
<body onload="onLoad()">
```

```
<p><a href="#" onclick="showAlert(); return false;">Show Alert</a></p>
```

```
</body>  
</html>
```



Network

Just determines

If the device is on-line

Type of connection

If can reach a given domain

```
network.isReachable(reachableHostname, reachableCallback, [reachableOptions])
```

```
function reachableCallback(reachability) {  
  var networkState = reachability.code || reachability;  
  
  var states = {};  
  states[NetworkStatus.NOT_REACHABLE] = 'No network connection';  
  states[NetworkStatus.REACHABLE_VIA_CARRIER_DATA_NETWORK] =  
    'Carrier data connection';  
  states[NetworkStatus.REACHABLE_VIA_WIFI_NETWORK] = 'WiFi connection';  
  
  alert('Connection type: ' + states[networkState]);  
}  
  
navigator.network.isReachable('phonegap.com', reachableCallback);
```

Media

PhoneGap Media only supported on Android

HTML 5 media supported on iOS and Android

Files

FileReader

Android, BlackBerry WebWorks 5.0 +, iOS

FileWriter

Android, BlackBerry WebWorks 5.0 +, iOS

FileTransfer

Android, BlackBerry WebWorks 5.0 +
Upload files via HTTP, HTTPS

Writing a file

```
function writeFile() {  
  var paths = navigator.fileMgr.getRootPaths();  
  var writer = new FileWriter(paths[0] + "write.txt");  
  writer.onwrite = writeSuccess;  
  writer.onerror = fail;  
  writer.write("some sample text");  
}
```

```
function writeSuccess() {  
  console.log("Write has succeeded");  
}
```

```
function fail(evt) {  
  console.log("fail: " + evt.target.error.code);  
}
```

Works fine on Android

Did not work on iPhone

(did once but could not reproduce result)

Reading a file

```
function fail(evt) {
    console.log("fail: " + evt.target.error.code);
}

function readLoad(evt) {
    console.log("readLoad: " + evt.target.result);
}

function readFile() {
    console.log("read");
    var paths = navigator.fileMgr.getRootPaths();
    var reader = new FileReader();
    reader.onerror = fail;
    reader.onload = readLoad;
    reader.readAsText(paths[0] + "write.txt");
}
```

Camera

camera.getPicture

Access to device camera

- Take pictures

- Access pictures in Photo library

You application resumes after camera/Photo Library is done

- Android

- iOS

- BlackBerry WebWorks (OS 5.0+)

- Palm (?)

Each platform has quirks

Android Quirks

- Ignores the allowEdit parameter.

- Camera.PictureSourceType.PHOTOLIBRARY and Camera.PictureSourceType.SAVEDPHOTOALBUM both display the same photo album.

Camera Example

```
function capturePhoto() {  
    navigator.camera.getPicture(onPhotoDataSuccess, onFail, { quality: 50 });  
}
```

```
function onPhotoDataSuccess(imageData) {  
    var smallImage = document.getElementById('smallImage');  
    smallImage.style.display = 'block';  
    smallImage.src = "data:image/jpeg;base64," + imageData;  
}
```

```
function onFail(message) {  
    alert('Failed because: ' + message);  
}
```

```
<body onload="onLoad()">  
    <button onclick="capturePhoto();">Capture Photo</button> <br>  
    <img style="display:none;width:60px;height:60px;" id="smallImage" src="" />  
</body>  
</html>
```

Accelerometer

Get motion in x, y, z direction

Methods

`accelerometer.getCurrentAcceleration`

`accelerometer.watchAcceleration`

`accelerometer.clearWatch`

Android

BlackBerry WebWorks (OS 5.0+)

iOS

Accelerometer Example

```
var watchID = null;
function startWatch() {
    var options = { frequency: 3000 };
    watchID = navigator.accelerometer.watchAcceleration(onSuccess, onError, options);
}
```

```
function onSuccess(acceleration) {
    var element = document.getElementById('accelerometer');
    element.innerHTML = 'Acceleration X: ' + acceleration.x + '<br />' +
        'Acceleration Y: ' + acceleration.y + '<br />' +
        'Acceleration Z: ' + acceleration.z + '<br />' +
        'Timestamp: ' + acceleration.timestamp + '<br />';
}
```

```
</script>
```

```
</head>
```

```
<body onload="onLoad()">
```

```
  <div id="accelerometer">Waiting for accelerometer...</div>
```

```
</body>
```

Accelerometer Example

```
function stopWatch() {  
    if (watchID) {  
        navigator.accelerometer.clearWatch(watchID);  
        watchID = null;  
    }  
}  
  
function onError() {  
    alert('onError!');  
}
```

Compass

Get the current direction device is pointing

Methods

`compass.getCurrentHeading`

`compass.watchHeading`

`compass.clearWatch`

Android

iOS

Compass Example

```
function onDeviceReady() {  
    navigator.compass.getCurrentHeading(onSuccess, onError);  
}
```

```
function onSuccess(heading) {  
    alert('Heading: ' + heading);  
}
```

```
function onError() { alert('onError!');}
```

```
</script>  
</head>  
<body onload="onLoad()">  
    <h1>Example</h1>  
    <p onclick="onDeviceReady()">getCurrentHeading</p>  
</body>  
</html>
```


The Bad News

heading in Android
a Number 12.015625

```
function onSuccess(heading) {  
    alert('Heading: ' + heading);  
}
```

heading in iPhone
Object with
timestamp
magneticHeading
trueHeading
headingAccuracy

Contacts

Assess the contact database

Methods

contacts.create

contacts.find

Android

BlackBerry WebWorks (OS 5.0+)

iOS

Contact Object fields (iOS)

id

displayName

Android additions

name

rawid

nickname

websites

phoneNumbers

emails

addresses

ims

organizations

revision

birthday

gender

note

photos

categories

urls

timezone

contact.find

contacts.find(contactFields, contactSuccess, contactError, contactFindOptions)

contactFields

Fields to search

Only fields with values that are returned

Returns array of

Contact objects

contactSuccess

Callback function on successful search

contactError

Callback function on error

contactFindOptions

Text to search for in contactFields

Example Use

```
function onDeviceReady() {  
    var options = new ContactFindOptions();  
    options.filter="Bob";  
    var fields = ["displayName", "name"];  
    navigator.service.contacts.find(fields, onSuccess, onError, options);  
}
```

```
function onSuccess(contacts) {  
    for (var i=0; i<contacts.length; i++) {  
        console.log("Display Name = " + contacts[i].displayName);  
    }  
}
```

```
function onError() {  
    alert('onError!');  
}
```