HYBRID APP DEV
SENSORS, DEVICE INFO, STORAGE

DR. JAVED KHAN
v.j.khan@tue.nl   khan.gr   @v_j_khan
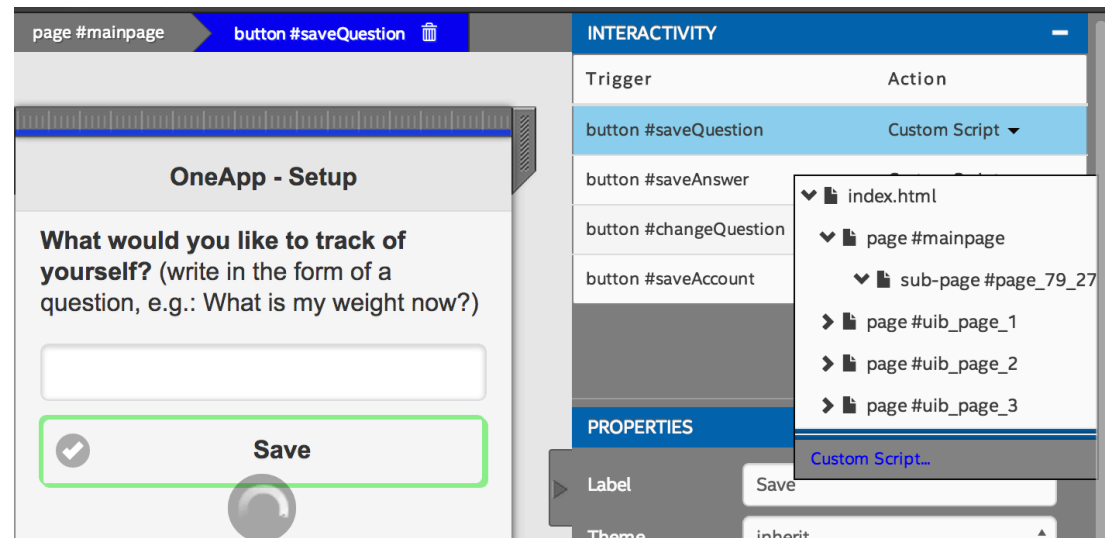
CREATIVE APPS, MAR2016

TU/e

PREVIOUS WEEK

- UI / interaction guidelines
- Raise awareness about mobile development technologies
- Workflow of Cordova / jQM

TU/e

Workflow example (more ways possible)

- Choose a UI element
- Click on the right under *Action*: *"Custom script"*

- New Javascript file will be created where you can code the button's behaviour

TU/e

E.g. get the Device's ID

- Apart from the two highlighted lines rest of the code is created from the IDE
- *console.log* is used for debugging purposes only

```javascript
1   /*jshint browser:true */
2   /*global $ */(function()
3   {
4     "use strict";
5     /*
6       hook up event handlers
7     */
8     function register_event_handlers()
9     {
10
11
12        /* button   .uib_w_3 */
13      $(document).on("click", ".uib_w_3", function(evt)
14      {
15          /* your code goes here */
16          console.log(device.uuid);
17          document.getElementById('displayStuff').innerHTML =device.uuid;
18      });
19
20      }
21    document.addEventListener("app.Ready", register_event_handlers, false);
22  })();
23
```
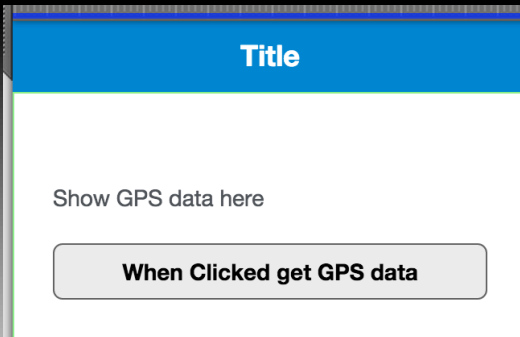
TU/e

To store data on the device itself

- localStorage.setItem("key", "value");
  - E.g. localStorage.setItem("lastName", "Khan");
- localStorage.getItem("key");
  - E.g. localStorage.getItem("lastName");
- More info:
  http://www.w3schools.com/html/html5_webstorage.asp

TU/e

Where to find info about sensors?

- http://cordova.apache.org/docs/en/latest/cordova/plugins/pluginapis.html

- E.g. for GPS: https://www.npmjs.com/package/cordova-plugin-geolocation
  - Use example code: https://www.npmjs.com/package/cordova-plugin-geolocation#example
  - Alter example code accordingly (e.g. function names)
- E.g. for Device data: https://www.npmjs.com/package/cordova-plugin-device

TU/e

E.g.

Title

Show GPS data here

When Clicked get GPS data

```javascript
/* button  #btn1 */
$(document).on("click", "#btn1", function(evt)
{
    /* your code goes here */
    navigator.geolocation.getCurrentPosition(onSuccessGPS, onErrorGPS);
});

var onSuccessGPS = function(position) {
    //get data from GPS and place them on gpsData variable
    var gpsData ='Latitude: '     + position.coords.latitude          + '\n' +
            'Longitude: '         + position.coords.longitude          + '\n' +
            'Altitude: '          + position.coords.altitude           + '\n' +
            'Accuracy: '          + position.coords.accuracy           + '\n' +
            'Altitude Accuracy: ' + position.coords.altitudeAccuracy   + '\n' +
            'Heading: '           + position.coords.heading            + '\n' +
            'Speed: '             + position.coords.speed              + '\n' +
            'Timestamp: '         + position.timestamp                 + '\n';

    //show contents of gpsData variable in textbox with id: showGPSdata -textbox is in html file
    document.getElementById('showGPSdata').innerHTML =gpsData;
};

// onError Callback receives a PositionError object
//
function onErrorGPS(error) {
    console.log('code: '    + error.code    + '\n' +
            'message: ' + error.message + '\n');

}
```
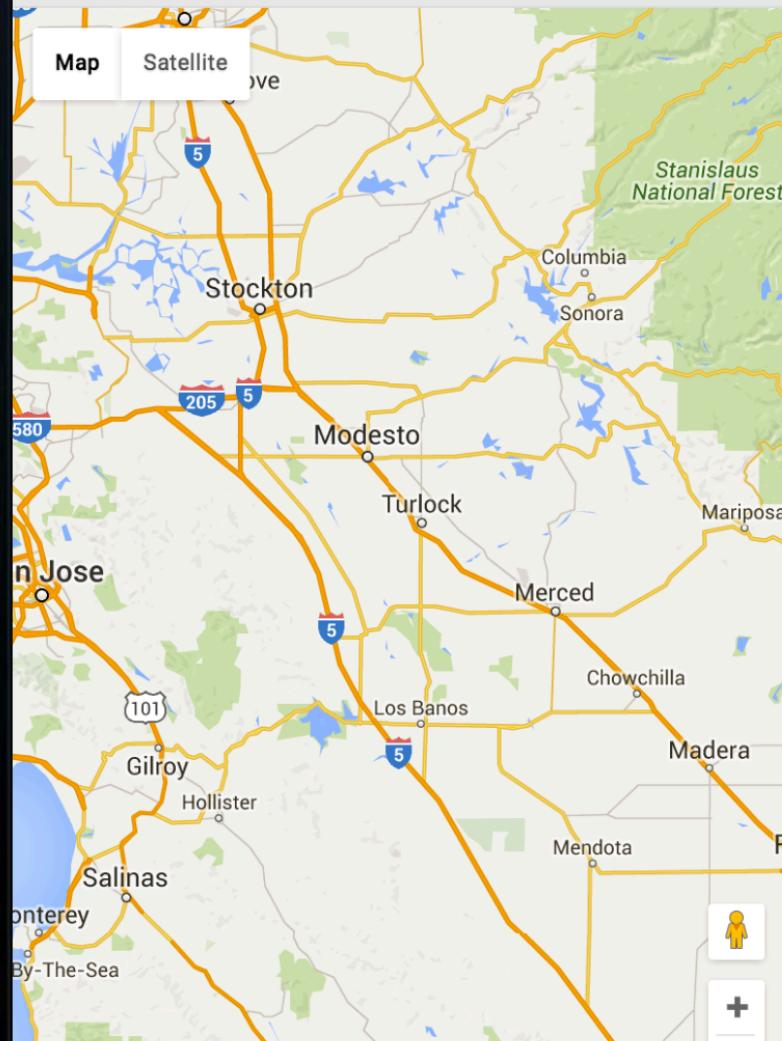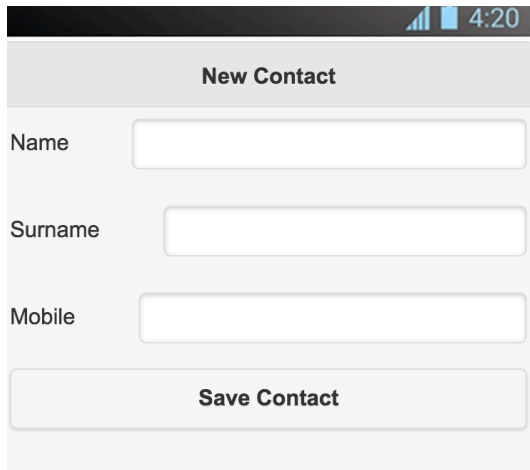
Google Maps

- Hello World:
  - https://developers.google.com/maps/documentation/javascript/tutorial
- Overlays:
  - https://developers.google.com/maps/documentation/javascript/overlays
  - Info Windows:
    - https://developers.google.com/maps/documentation/javascript/overlays#InfoWindows
- Code example: http://vjkhan.com/lectures/ca/160303-maps.zip
- Video: http://youtu.be/k0cl9oLq-_I

TU/e

TU/e

Contacts –need device

-

```javascript
/* button  #rec */
$(document).on("click", "#rec", function(evt)
{
    /* your code goes here */
    var contact = navigator.contacts.create();

    var name = new ContactName();
    name.givenName = $('#firstname').val();
    name.familyName = $('#surname').val();
    contact.name = name;

    var phoneNumbers = [];
    var inputMobile =$('#surname').val();
    phoneNumbers[0] = new ContactField('mobile', inputMobile, true);
    contact.phoneNumbers = phoneNumbers;

    contact.save(onSuccess,onError);
});

function onSuccess(contact) {
    alert("Save Success");
};

function onError(contactError) {
    alert("Error = " + contactError.code);
};
```
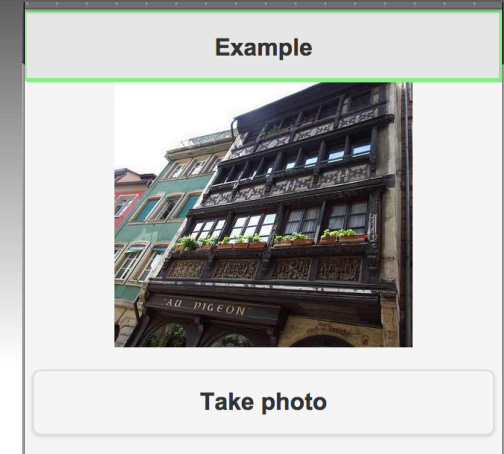
New Contact

Name

Surname

Mobile

Save Contact

4:20

TU/e

Camera

- https://www.npmjs.com/package/cordova-plugin-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"*)
- Example will only work with device
  - Use "Test" tab: "Push to Testing Sever" in combination with the "App Preview" app on your phone

TU/e

Camera - example


```
12        /* button  #btn */
13      $(document).on("click", "#btn", function(evt)
14  ▼   {
15          /* your code goes here */
16          navigator.camera.getPicture(cameraSuccess, cameraError, {quality: 50, destinationType:
    Camera.DestinationType.DATA_URL});
17      });
18
19  ▼   function cameraSuccess(imageData) {
20          var image = document.getElementById('showPhoto');
21          image.src = "data:image/jpeg;base64," + imageData;
22      }
23
24  ▼   function cameraError(message) {
25          console.log('Failed because: ' + message);
26      }
```

TU/e

Mic (Audio)

- https://www.npmjs.com/package/cordova-plugin-media

TU/e

Bluetooth (supported by 3rd parties)

- https://cordova.apache.org/plugins/?q=bluetooth

TU/e

Assignment

- Please keep on using FeedbackCamp on Peter's account (Javed will be checking that)

- Assignment for this week needs to have UI + sensor data that are used
- Assignment needs to go beyond examples e.g. have more than one button with location labels and when one of them is clicked the right map appears

TU/e

SUMMARY

- Sensors in Hybrid App MobDev

CONTACT   v.j.khan@tue.nl   khan.gr   @v_j_khan

TU/e