

HYBRID APP DEV

WEB SERVICES

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CREATIVE APPS , JAN 2017

PREVIOUS WEEK

- Sensors

TODAY

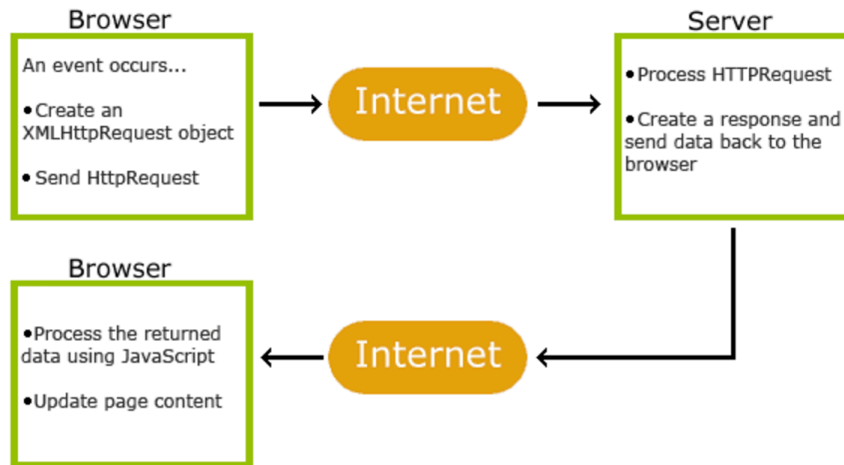
- Work with Web Services
 - (Practically AJAX & APIs)
 - NY Times API (for news)
 - Kairos API (for face recognition)
 - NPO Radio 2 API (for entrainment)

AJAX

- Ajax (short for asynchronous JavaScript and XML) is a set of web development techniques using many web technologies on the client-side to create asynchronous Web applications
- With Ajax, web applications can send data to and retrieve from a server asynchronously (in the background) without interfering with the display and behavior of the existing page
- [[https://en.wikipedia.org/wiki/Ajax_\(programming\)](https://en.wikipedia.org/wiki/Ajax_(programming))]

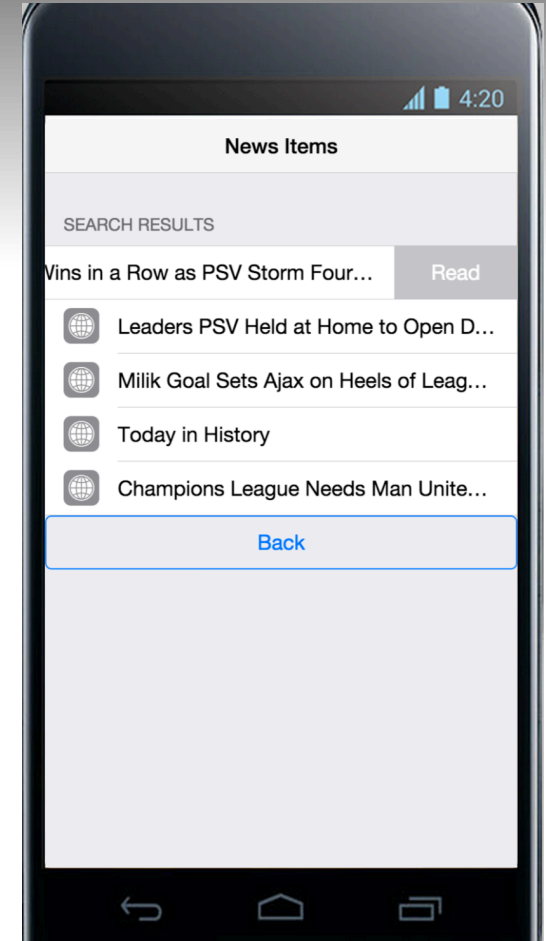
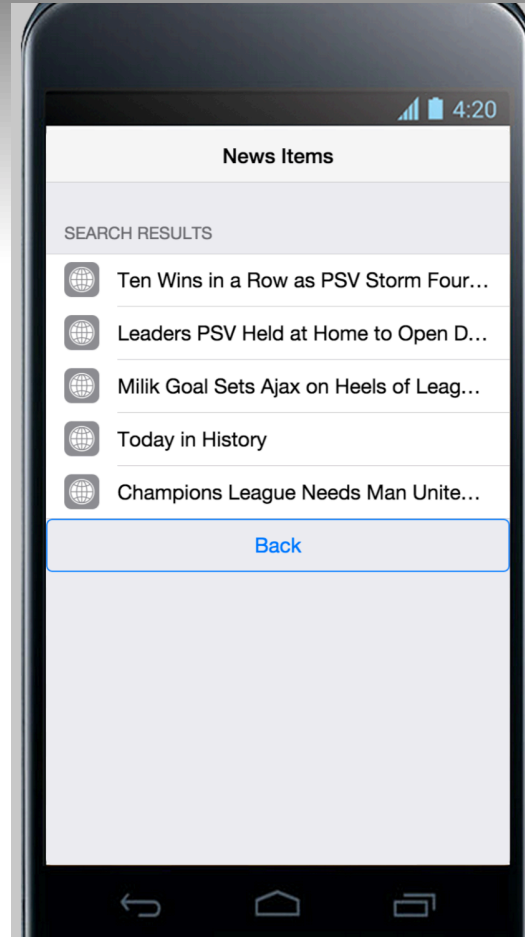
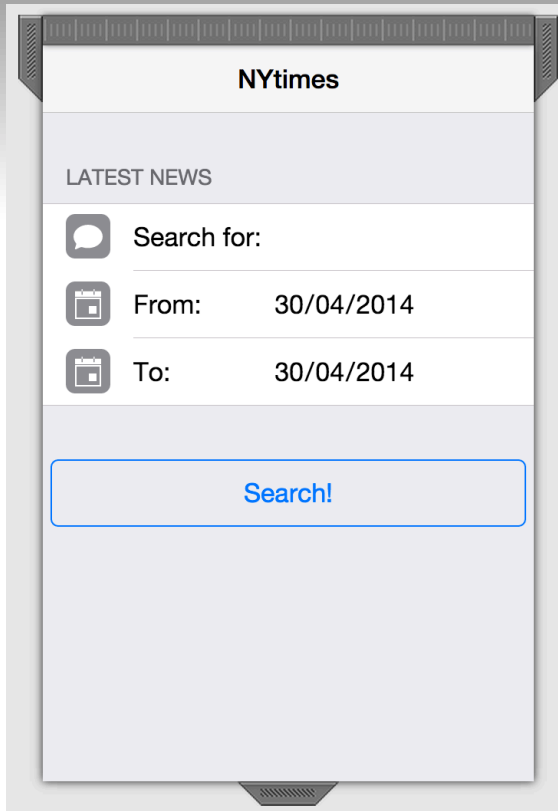
AJAX (practically)

How AJAX Works



1. An event occurs in a web page (the page is loaded, a button is clicked)
2. An XMLHttpRequest object is created by JavaScript
3. The XMLHttpRequest object sends a request to a web server
4. The server processes the request
5. The server sends a response back to the web page
6. The response is read by JavaScript
7. Proper action (like page update) is performed by JavaScript

NY Times Custom App



Exercise 1: Search For NY Times Articles

- Use XDK pre-baked project template in Wiki
- You need to complete the AJAX request and response
- Goal: get a list of article headlines based on user's query

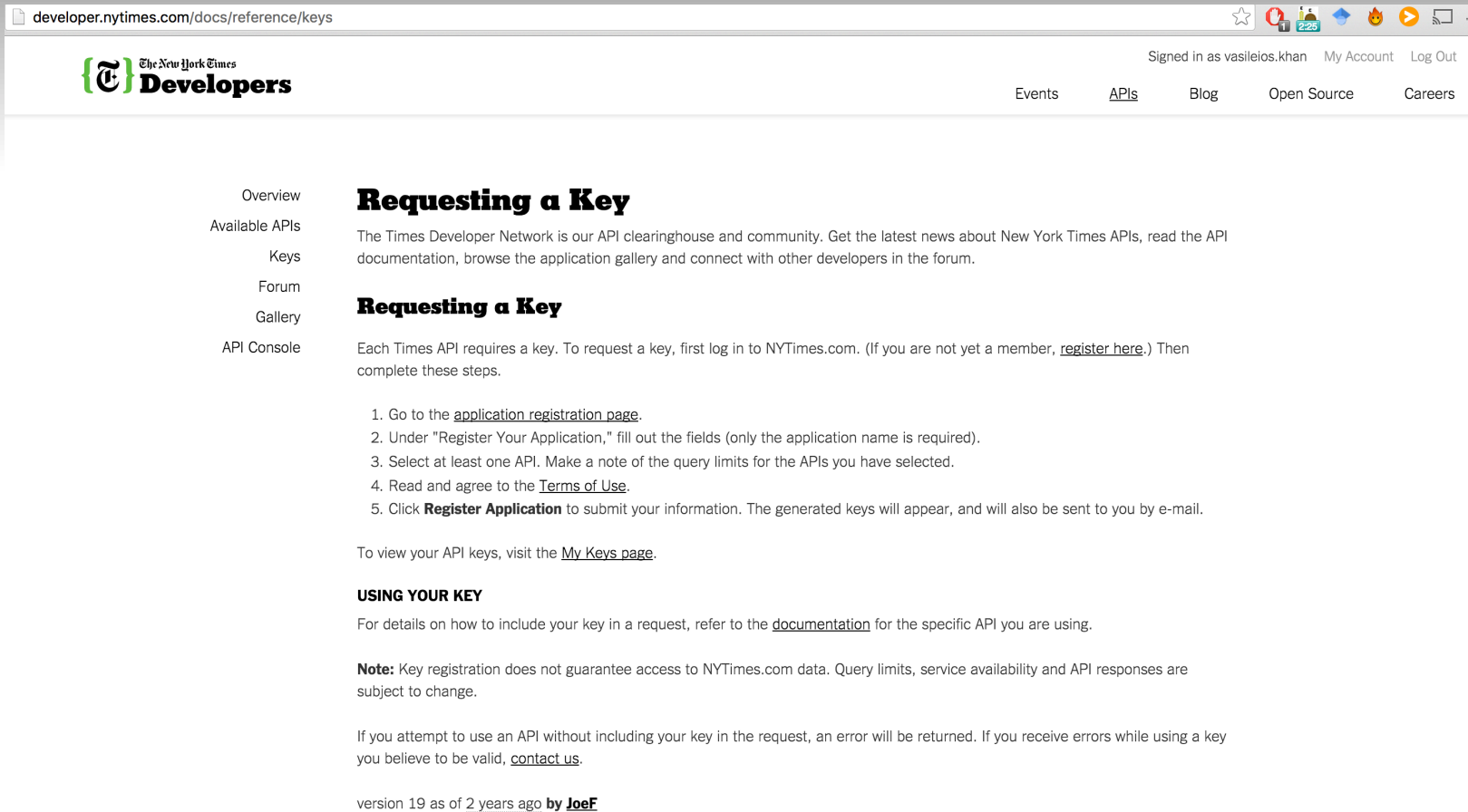
Exercise 1: Search For NY Times Articles

- Practically fill out the:
 - (in index_user_scripts.js)

```
$.ajax({//AJAX request starts here
  type: ,
  url: ,
  success:,
  error: ,
  dataType:
});
```

- Tip: see examples at:
 - <http://api.jquery.com/jquery.ajax/>

Before coding...



The screenshot shows the 'Keys' section of the New York Times Developers documentation. The page title is 'Requesting a Key'. It provides instructions on how to request an API key, including a list of five steps: 1. Go to the application registration page. 2. Under 'Register Your Application,' fill out the fields (only the application name is required). 3. Select at least one API. Make a note of the query limits for the APIs you have selected. 4. Read and agree to the Terms of Use. 5. Click 'Register Application' to submit your information. The generated keys will appear, and will also be sent to you by e-mail. Below the steps, it says 'To view your API keys, visit the My Keys page.' There is also a section titled 'USING YOUR KEY' which states 'For details on how to include your key in a request, refer to the documentation for the specific API you are using.' A 'Note' follows, stating 'Key registration does not guarantee access to NYTimes.com data. Query limits, service availability and API responses are subject to change.' At the bottom, it says 'If you attempt to use an API without including your key in the request, an error will be returned. If you receive errors while using a key you believe to be valid, contact us.' The page footer indicates 'version 19 as of 2 years ago by JoeF'.

developer.nytimes.com/docs/reference/keys

Signed in as vasilios.khan My Account Log Out

Events APIs Blog Open Source Careers

{T} The New York Times Developers

Overview
Available APIs
Keys
Forum
Gallery
API Console

Requesting a Key

The Times Developer Network is our API clearinghouse and community. Get the latest news about New York Times APIs, read the API documentation, browse the application gallery and connect with other developers in the forum.

Requesting a Key

Each Times API requires a key. To request a key, first log in to NYTimes.com. (If you are not yet a member, [register here](#).) Then complete these steps.

1. Go to the [application registration page](#).
2. Under "Register Your Application," fill out the fields (only the application name is required).
3. Select at least one API. Make a note of the query limits for the APIs you have selected.
4. Read and agree to the [Terms of Use](#).
5. Click **Register Application** to submit your information. The generated keys will appear, and will also be sent to you by e-mail.

To view your API keys, visit the [My Keys page](#).

USING YOUR KEY

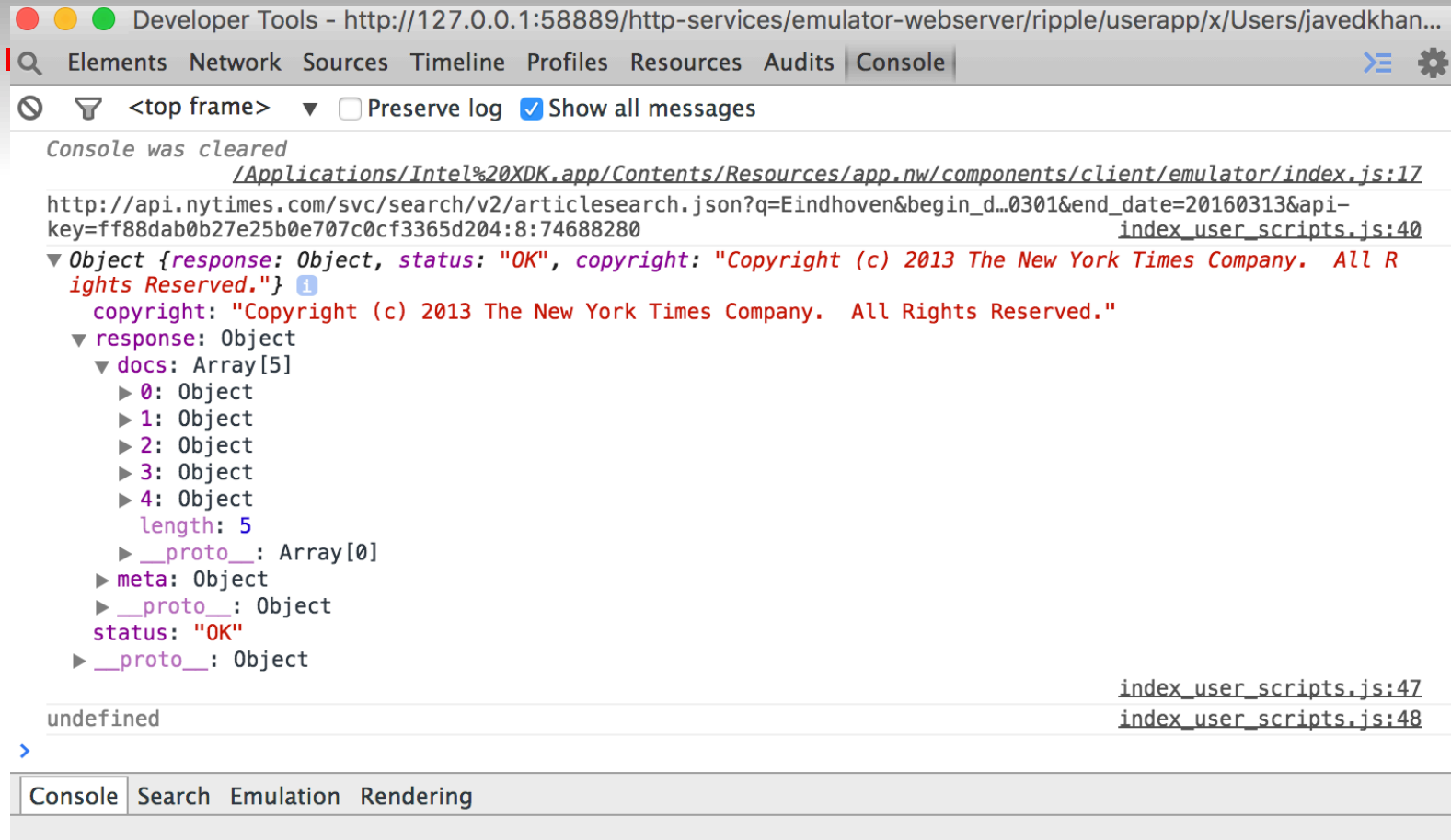
For details on how to include your key in a request, refer to the [documentation](#) for the specific API you are using.

Note: Key registration does not guarantee access to NYTimes.com data. Query limits, service availability and API responses are subject to change.

If you attempt to use an API without including your key in the request, an error will be returned. If you receive errors while using a key you believe to be valid, [contact us](#).

version 19 as of 2 years ago by [JoeF](#)

APIs might send back more data than you need...



The screenshot shows the Chrome Developer Tools Console with the 'Console' tab selected. The address bar shows a URL: `http://127.0.0.1:58889/http-services/emulator-webserver/ripple/userapp/x/Users/javedkhan...`. The console toolbar shows 'Preserve log' is unchecked and 'Show all messages' is checked. The console output shows a message from `/Applications/Intel%20XDK.app/Contents/Resources/app.nw/components/client/emulator/index.js:17` at `index_user_scripts.js:40`. The message is an object with the following structure:

```
Object {response: Object, status: "OK", copyright: "Copyright (c) 2013 The New York Times Company. All Rights Reserved."}
  response: Object
    docs: Array[5]
      0: Object
      1: Object
      2: Object
      3: Object
      4: Object
      length: 5
      __proto__: Array[0]
    meta: Object
    __proto__: Object
    status: "OK"
    __proto__: Object
```

The console also shows a message from `index_user_scripts.js:47` with the value `undefined` and another message from `index_user_scripts.js:48`.

```

1 {"response":
2   {"meta":
3     {"hits":5,"time":43,"offset":0},
4     "docs":[
5       {"web_url":"http://www.nytimes.com/reuters/2016/03/05/sports/soccer/05reuters-soccer-dutch.html",
6        "snippet":"AMSTERDAM, March 5 (Reuters) &#8211; PSV Eindhoven claimed a 10th successive league win as they cruised to a 3-0 victory over FC Utrecht on Saturday, opening the door for Ajax to clinch the Eredivisie title.",
7        "lead_paragraph":"AMSTERDAM, March 5 (Reuters) &#8211; PSV Eindhoven claimed a 10th successive league win as they cruised to a 3-0 victory over FC Utrecht on Saturday, opening the door for Ajax to clinch the Eredivisie title.",
8        "abstract":null,
9        "print_page":null,
10       "blog":[],
11       "source":"Reuters",
12       "multimedia":[],
13       "headline":
14         {"main":"Ten Wins in a Row as PSV Storm Four Points Clear",
15          "print_headline":"Ten Wins in a Row as PSV Storm Four Points Clear"},
16       "keywords":[],
17       "pub_date":"2016-03-05T16:58:01Z",
18       "document_type":"article",
19       "news_desk":"None",
20       "section_name":"Sports",
21       "subsection_name":"Soccer",
22       "byline":
23         {"person":[],
24          "original":"By REUTERS",
25          "organization":"REUTERS"},
26       "type_of_material":"News",
27       "_id":"56db570138f0d861835e273a",
28       "word_count":"176",
29       "slideshow_credits":null},
30     ],
31   },
32   {"web_url":"http://www.nytimes.com/reuters/2016/03/12/sports/soccer/12reuters-soccer-dutch.html",
33    "snippet":"Leaders PSV Eindhoven were held to a 1-1 home draw by Heerenveen on Saturday, opening the door for Ajax to clinch the Eredivisie title.",
34    "lead_paragraph":"Leaders PSV Eindhoven were held to a 1-1 home draw by Heerenveen on Saturday, opening the door for Ajax to clinch the Eredivisie title.",
35    "abstract":null,
36    "print_page":null,
37    "blog":[],
38    "source":"Reuters",
39    "multimedia":[],
40    "headline":
41      {"main":"Leaders PSV Held at Home to Open Door for Ajax",
42       "print_headline":"Leaders PSV Held at Home to Open Door for Ajax"},
43    "keywords":[],
44    "pub_date":"2016-03-12T16:59:16Z",
45    "document_type":"article",
46    "news_desk":"None",
47    "section_name":"Sports",
48    "subsection_name":"Soccer",
49    "byline":

```

Tip for JSON

- Try to visualize JSON at:
 - <http://json.parser.online.fr/>

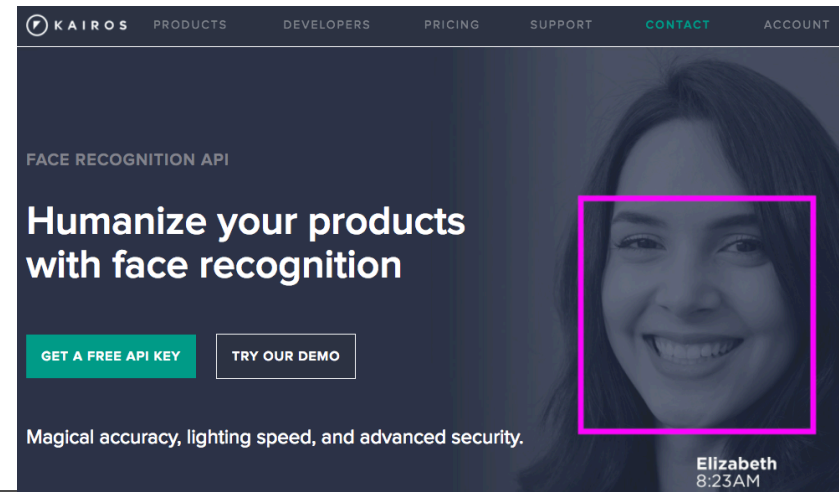
Exercise 1 - Solution

```
$.ajax({//AJAX request starts here
  type: 'GET',
  url: url,
  success: function(data){//if successful then get only the returned article's snippets
and show them in a list
    var showResults = '<div class="content-block-title">Search Results</div><div
class="list-block"><ul>';
    $.each(data.response.docs, function(index, element) {
      var snippet =element.snippet;
      showResults += '<li class="swipeout">' +
        '<div class="swipeout-content item-content">' +
          '<div class="item-media"><i class="icon icon-form-url">
</i></div>' +
          '<div class="item-inner">' +
            '<div class="item-title">' +
              element.headline.main + '</div>' +
            '</div>' +
          '</div>' +
          '<div class="swipeout-actions-right"><a href="#"
class="action1">Read</a></div>' +
        '</li>';
    });
    showResults += '</ul><a href="#" class="button button-big" id="back">Back</a>
</div>';
    $('#showNewsItems').html(showResults);
    mainView.router.load({pageName: 'newsItemsPage'});
  },
  error: function(xhr){console.log('ajax error'+ xhr.status + ' ' + xhr.statusText);},
  dataType: 'json'
});
```

■ In Wiki

Exercise 2: Face Recognition

- Uses:
 - Kairos API: <https://www.kairos.com/face-recognition-api>
 - Need API keys (free for 30 days)
 - Javascript SDK for the Kairos Facial Recognition API: <https://github.com/kairosinc/Kairos-SDK-Javascript>



How Does Face Recognition in Kairos API work?

- Need to first “*enroll*” faces (from photos)
- And categorize them in “*gallery*”
- E.g. I have enrolled the following photo in gallery “family”:

Example

- I have enrolled the following photo in gallery “family”:



- Let's see what happens if I use the photo:





Face was recognized as: JAVED with 83% confidence

OK

iPhone 35%

FACE RECOGNIZER



CROWD SOURCING WEEK

Take Photo

Name:

Gallery:

Enroll Face Recognize Face

```
{ "images": { "transaction":  
  { "status": "success", "width": 171, "topLeftX": 269, "to
```

Example

- I have enrolled the following photo in gallery “family”:
- Let’s see what happens if I use the photo:





Face was recognized as: JAVED with 87% confidence

OK

FACE RECOGNIZER



Take Photo

Name: name the face in the photo

Gallery: family

Enroll Face

Recognize Face

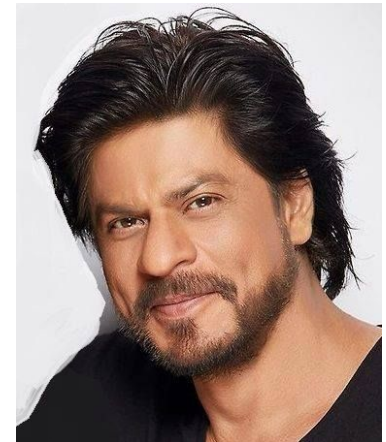
```
{ "images": [ { "transaction":  
  { "status": "success", "width": 73, "topLeftX": 46, "topL
```

Example

- I have enrolled the following photo in gallery “family”:



- Let's see what happens if I use the photo:





Could not recognize face in photo

OK

FACE RECOGNIZER



Take Photo

Name:

Gallery:

Enroll Face

Recognize Face

```
{"images":[{"transaction":  
{"status":"failure","width":193,"topLeftX":67,"topLe
```

Exercise 2:

- Given the template in Wiki
- Get your API keys at Kairos
- Look at example of Javascript SDK:
 - https://github.com/kairosinc/Kairos-SDK-Javascript/blob/master/examples/assets/js/methods_test.js
- And complete the code in the template to enroll faces in your account and recognize them

Exercise 2: Solution

```
27 ▼ $(document).on("click", "#enroll", function(evt){
28     var gallery_name = $('#gallery_name').val();
29     var subject_id = $('#subject_id').val();
30
31 ▼     if(faceData && gallery_name && subject_id){
32         $('#responseData').text('Please wait trying to enroll face...');
33         kairos.enroll(faceData, gallery_name, subject_id, kairosCallback);
34 ▼     } else {
35         alert('Please type a name for the face and a gallery name to place it');
36     }
37 });

39 ▼ $(document).on("click", "#recognize", function(evt){
40     var gallery_name = $('#gallery_name').val();
41
42 ▼     if(faceData && gallery_name ){
43         $('#responseData').text('Please wait trying to recognize...');
44         kairos.recognize(faceData, gallery_name, kairosCallback); //will trigger function:
45         kairosCallback
46     } else {
47         alert('Please type a gallery name');
48     }
49 });
```

Exercise 3: NPO Radio 2 Player

- Given the template in Wiki
- (no keys needed)
- Show the album cover of the current song that is playing
- The URL is:
<http://top2012.radio2.nl/data/cache/json/nowplaying.json>

Exercise 3:

- Tip check `.done` and `.fail` example at: <http://api.jquery.com/jquery.ajax/>

```
1 // Assign handlers immediately after making the request,  
2 // and remember the jqXHR object for this request  
3 var jqxhr = $.ajax( "example.php" )  
4   .done(function() {  
5     alert( "success" );  
6   })  
7   .fail(function() {  
8     alert( "error" );  
9   })  
10  .always(function() {  
11    alert( "complete" );  
12  });  
13  
14 // Perform other work here ...  
15  
16 // Set another completion function for the request above  
17 jqxhr.always(function() {  
18   alert( "second complete" );  
19 });
```

Exercise 3: solution

```
//setup AJAX request
var request = $.ajax( {url: "http://top2012.radio2.nl/data/cache/json/nowplaying.json", method:
"GET"} );
//use the data that are in the AJAX response
request.done(function(result){
    var myObj = result;
    var artist = myObj.artist;
    var title = myObj.title;
    var img = myObj.songversion.image[0].url;
    $('#albumCover img').attr("src",img);
});
//show message to user if AJAX request failed
request.fail(function( jqXHR, textStatus ) {
    alert( "Request failed: " + textStatus );
});
//execute AJAX request every 3 seconds
setInterval(request,3000);
```

SUMMARY

- Work with AJAX & APIs

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