

Taste of Code

RSS Feed Reader

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What Do We Need

Editor

Atom, Notepad++, Vim

Browser

Chrome, Firefox

Slack

<https://nos-hq.slack.com/>



Outline Project

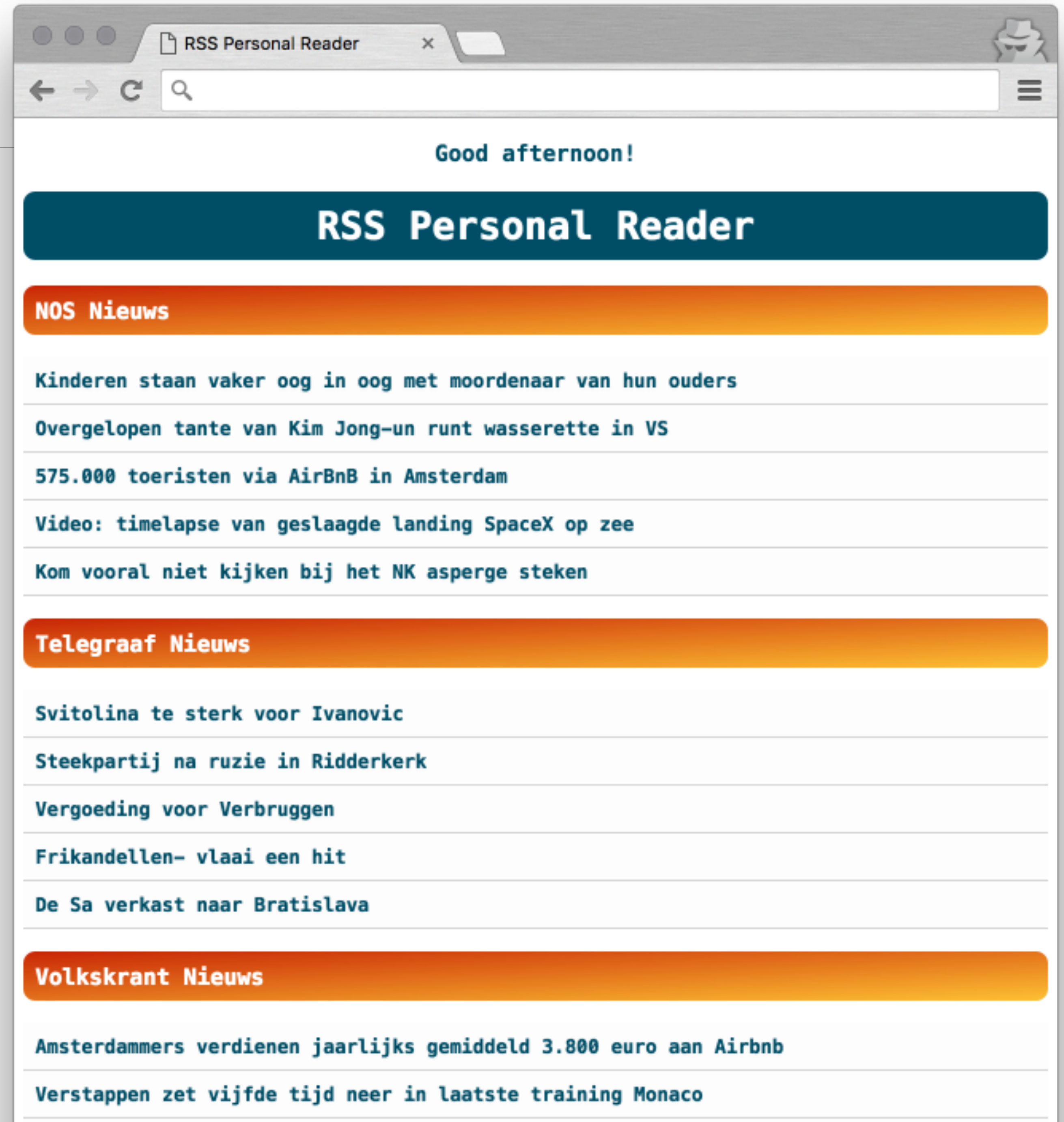
Let's Begin

It's always helpful to first outline
what you want your **project to do/achieve**.

What We Will Build

RSS Feed Reader

Using HTML, CSS and jQuery.



What We Will Build

ToDo:

- Display a list of some news sites
- Display links to the last 5 articles for each of these sites
- Open articles in a different window when clicked on





HTML

Content & Structure

HTML is the language of the web.



What is HTML?

HTML is a **markup language**
for writing web pages.

Any website you ever visited
was **made with html**.

Each new version of HTML is
adapted to new requirements of the web.



What is HTML?

index.html

<DOCTYPE>

defines doc type

<html>

describes HTML doc

<head>

provides doc info

<title>

provides doc title

<body>

describes page content

<h1>

describes a heading

<p>

describes a paragraph

```
<!DOCTYPE html>
<html>
  <head>
    <title>Taste of Code</title>
  </head>
  <body>
    <h1>Agenda</h1>

    <p>On the menu today:</p>

    <ul>
      <li>Structure with HTML</li>
      <li>Styling with CSS</li>
      <li>Happiness with Lunch</li>
    </ul>
  </body>
</html>
```


What is HTML?

A mockup of a web browser window. The title bar is dark gray with three colored window control buttons (red, yellow, green) on the left and search and star icons on the right. The address bar is empty. The main content area is white and contains the following text:

Agenda

On the menu today:

- Structure with HTML
- Styling with CSS
- Happiness with Lunch

The browser window has a subtle drop shadow.

Agenda

On the menu today:

- Structure with HTML
- Styling with CSS
- Happiness with Lunch

TAGS open...

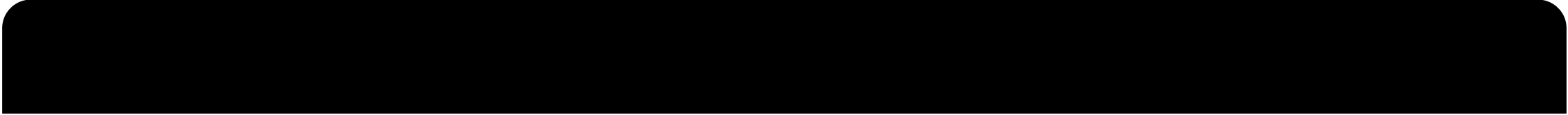


`<h1>`Agenda

Opening tag = starts heading



TAGS open and close



```
<h1>Agenda</h1>
```

Opening tag = starts heading
Closing tag = stops heading



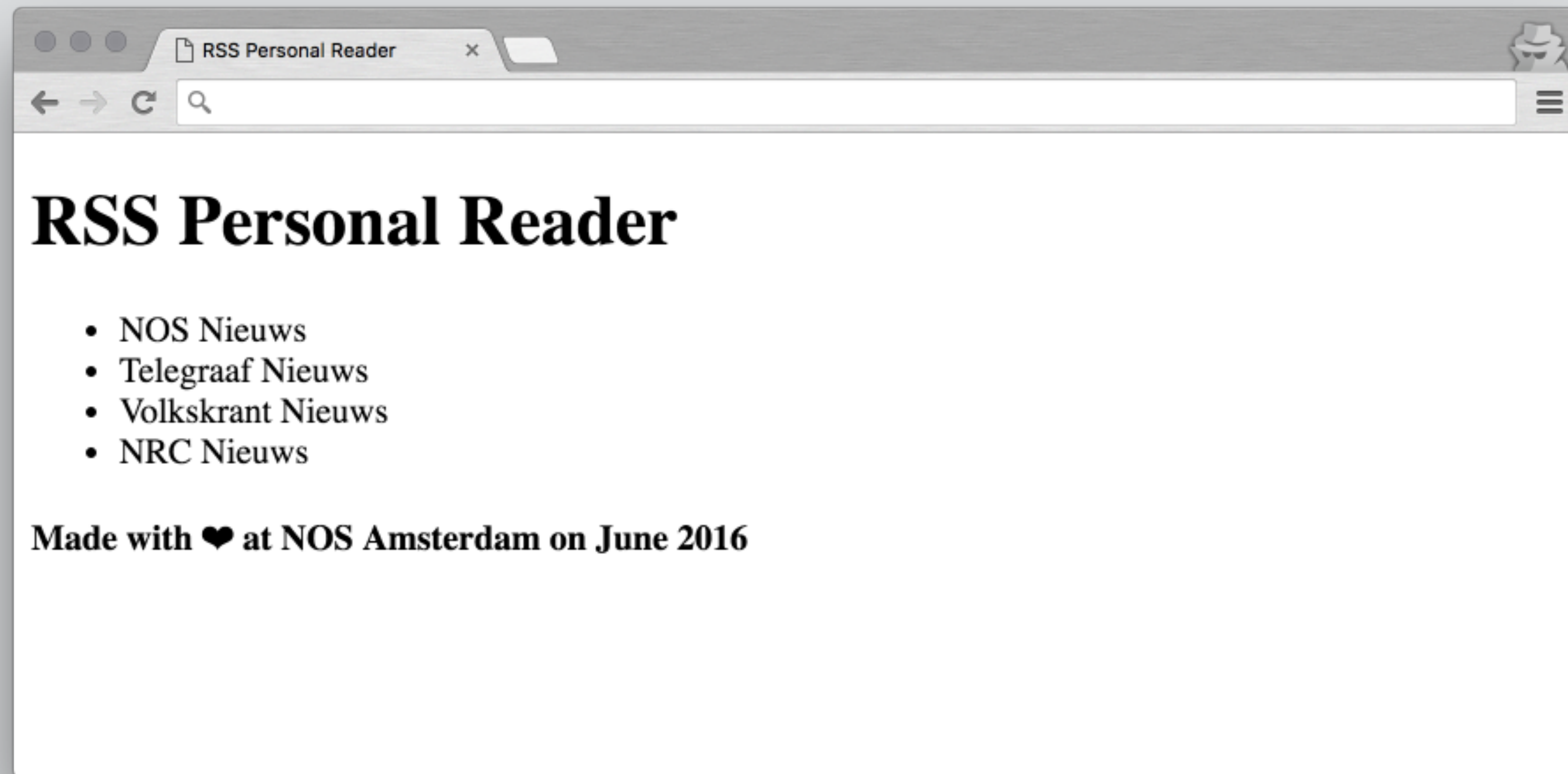
Exercise

Your Very First HTML

Make a new folder for your project
and create an **index.html** file.



Exercise





CSS

Style & Presentation

CSS describes **how HTML looks.**



What is CSS?

CSS is a **stylesheet language** that describes the presentation of an HTML document.

text color
fonts style
spacing between elements
background images



What is CSS?

color

sets the color of the text

index.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>Taste of Code</title>

    <style>
      h1 {
        color: red;
      }
    </style>

  </head>
  <body>
    <h1>Agenda</h1>
    ...
  </body>
</html>
```



What is CSS?

Agenda

On the menu today:

- Structure with HTML
- Styling with CSS
- Happiness with Lunch



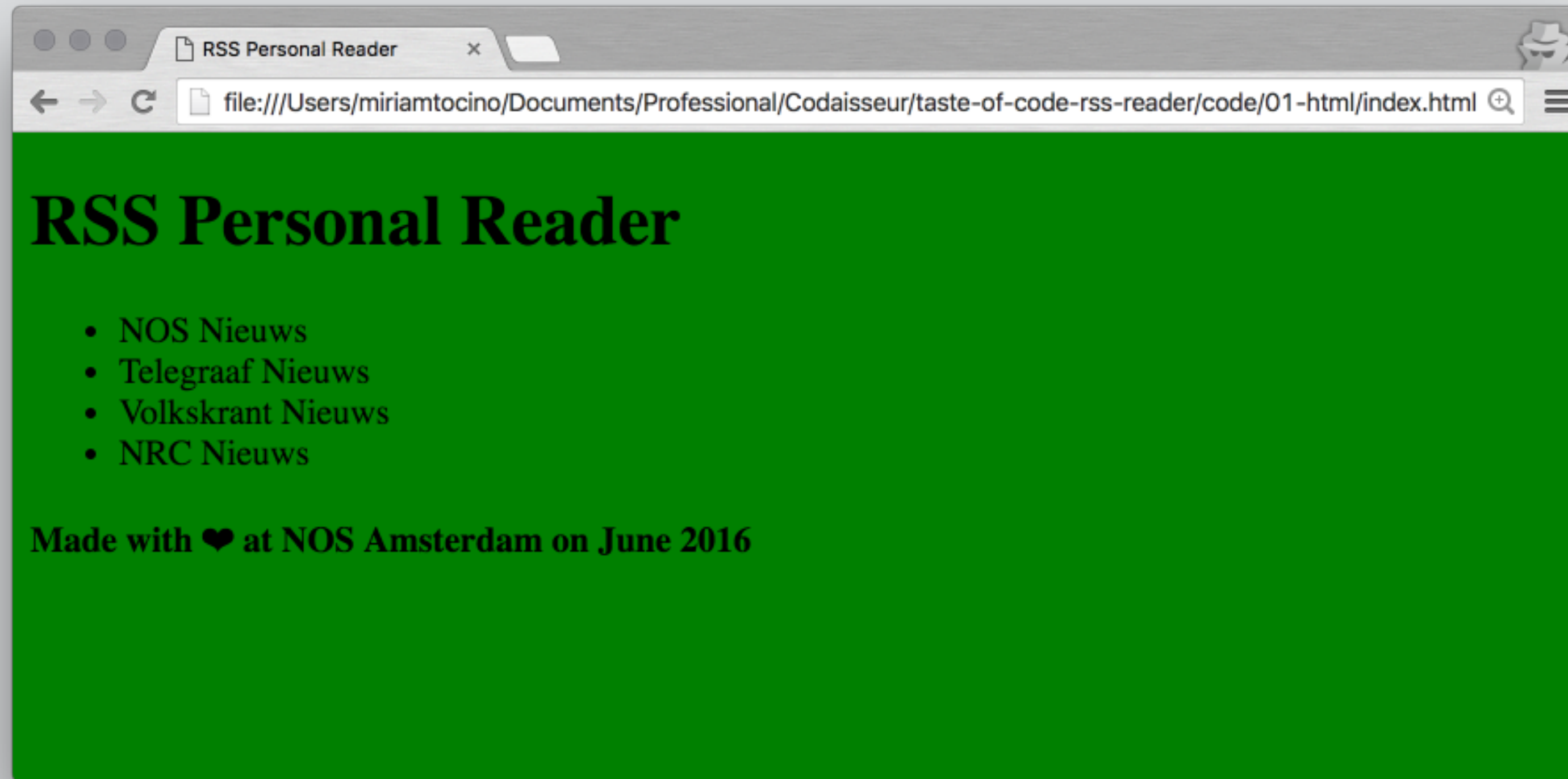
Exercise

Background color

Change the background color
of the web page to **green**.



Exercise



CSS Selectors

Select element on your site
by its class name.

index.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>Taste of Code</title>

    <style>
      .warning {
        color: red;
      }
    </style>

  </head>
  <body>
    <h1 class="warning">Agenda</h1>
  </body>
</html>
```



Exercise

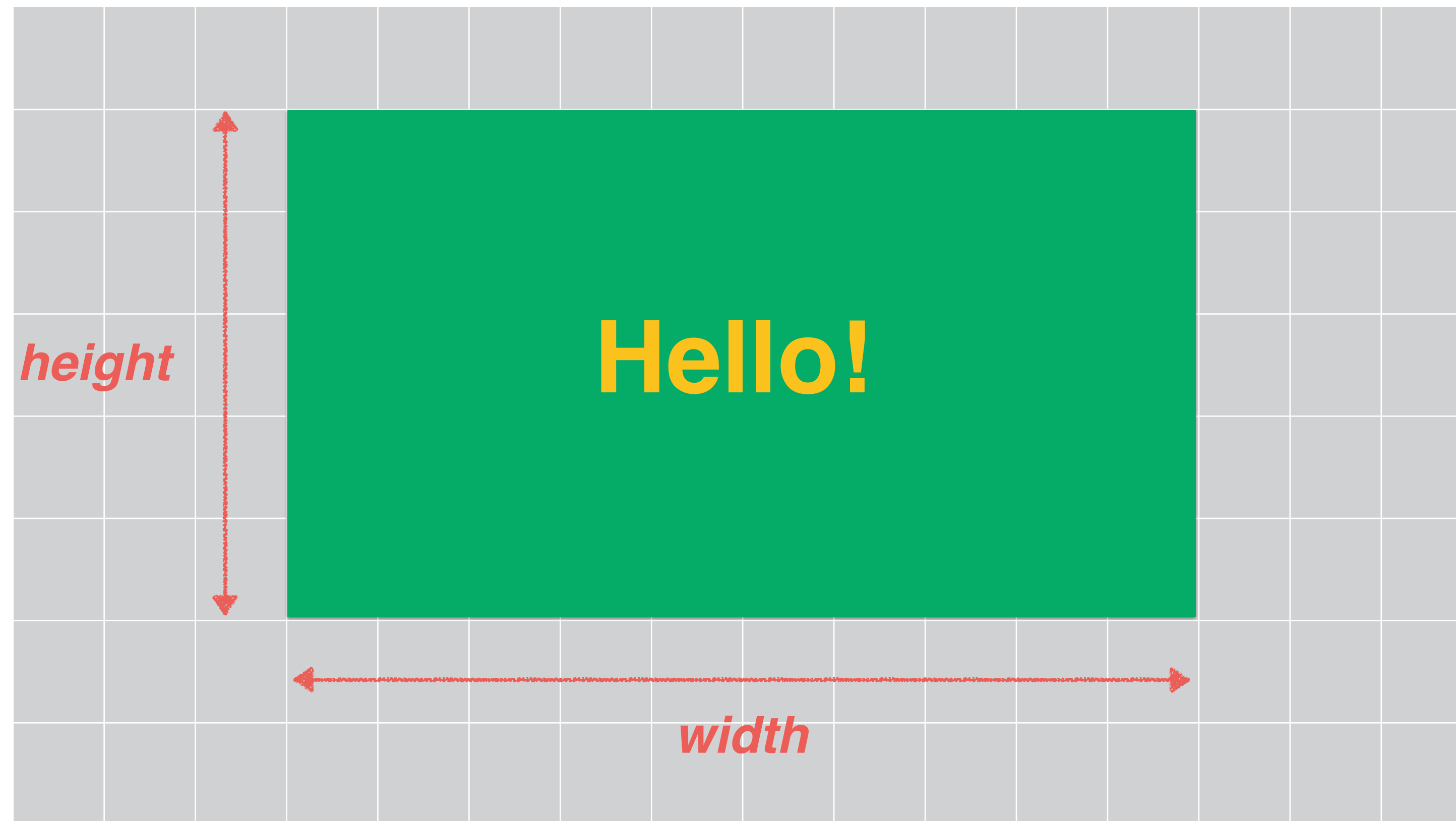
Warning

Apply the warning class to the main heading in your web page and change its color.

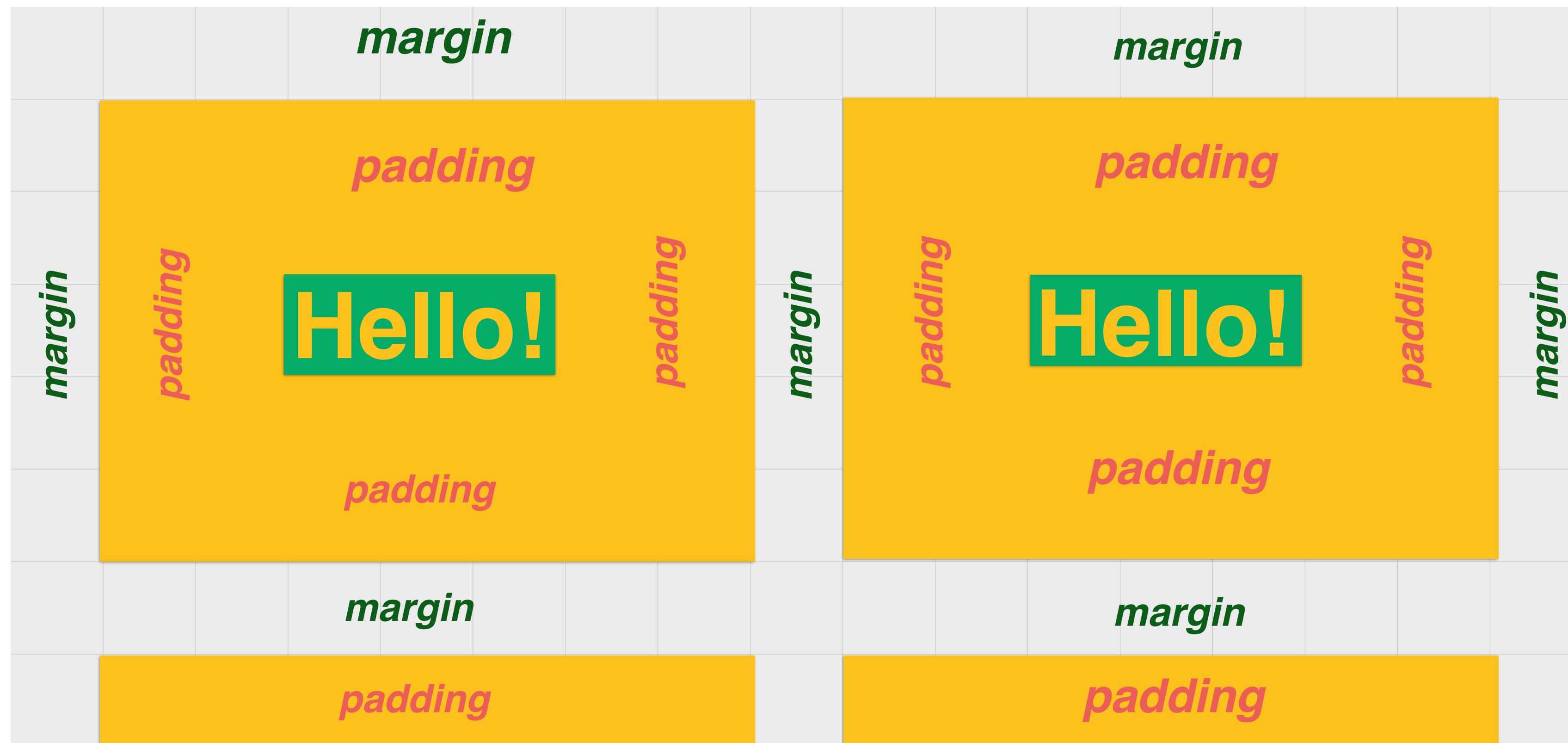


Padding & Margin in Pixels

A screen consists of pixels



Padding & Margin in Pixels



Padding & Margin in Pixels

css/styles.css

```
p {  
  padding: 30px;  
  margin: 10px;  
}  
  
.main-title {  
  padding: 10px;  
}  
  
#nos {  
  margin: 25px;  
}
```



Linking to CSS file from HTML page

Use the HTML <link> tag

Its **href** attribute tells the browser where the CSS file is stored.

index.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>RSS Personal Reader</title>
    <link rel="stylesheet" type="text/css" href="css/styles.css">
  </head>
  <body>
    ...
  </body>
</html>
```

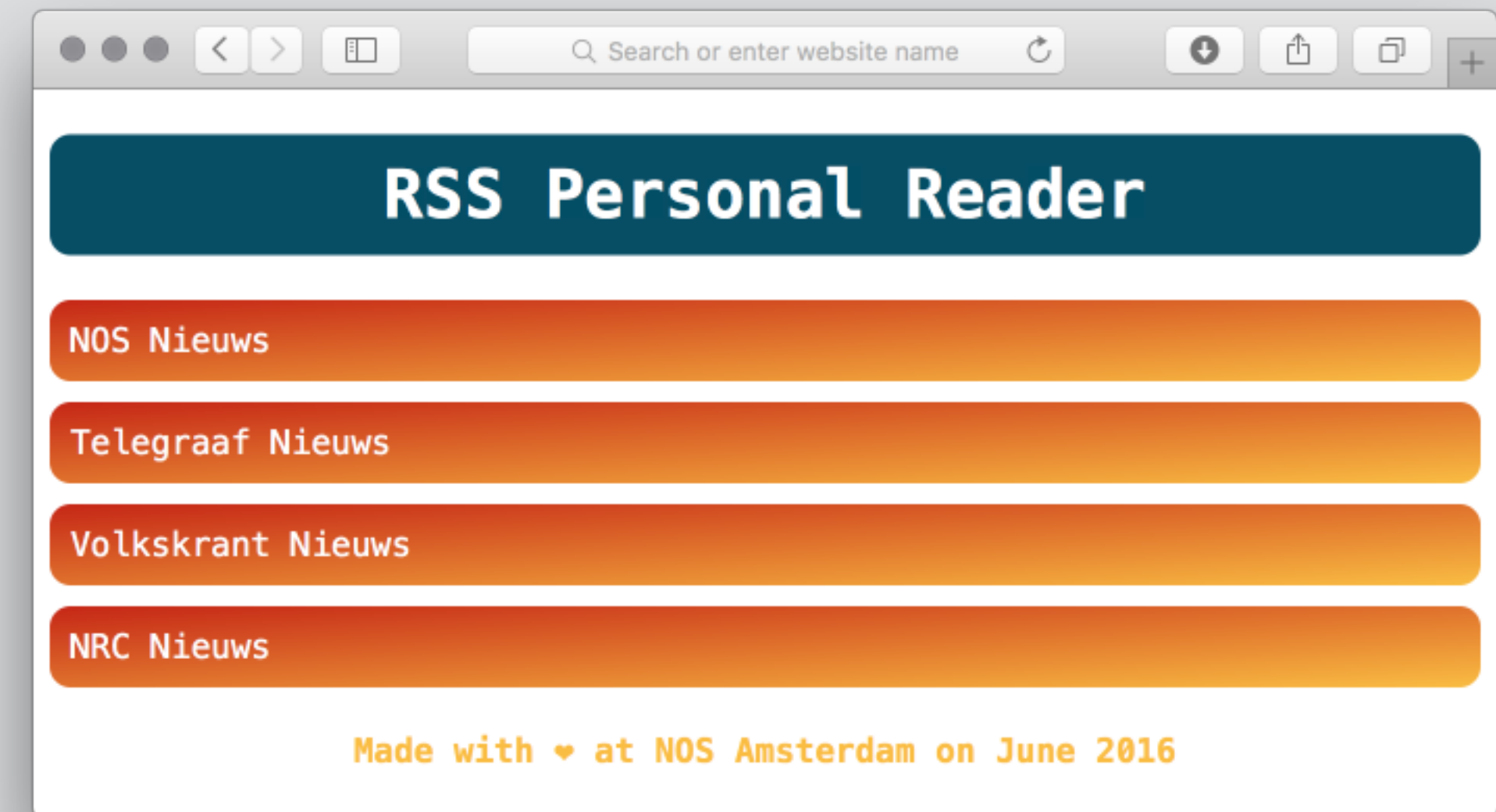
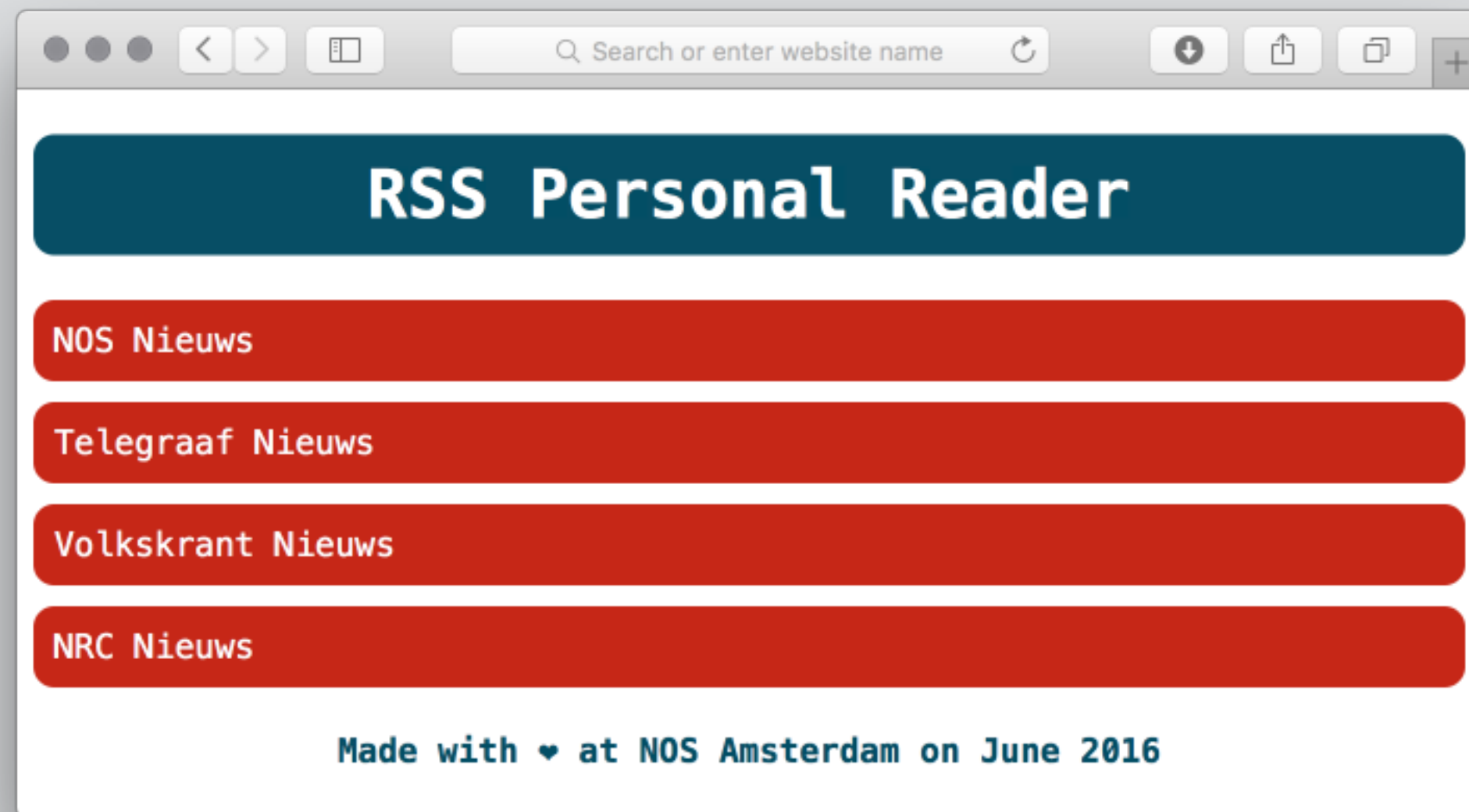
Exercise

Styling

Apply some margins and paddings to the elements in your web page.



Exercise





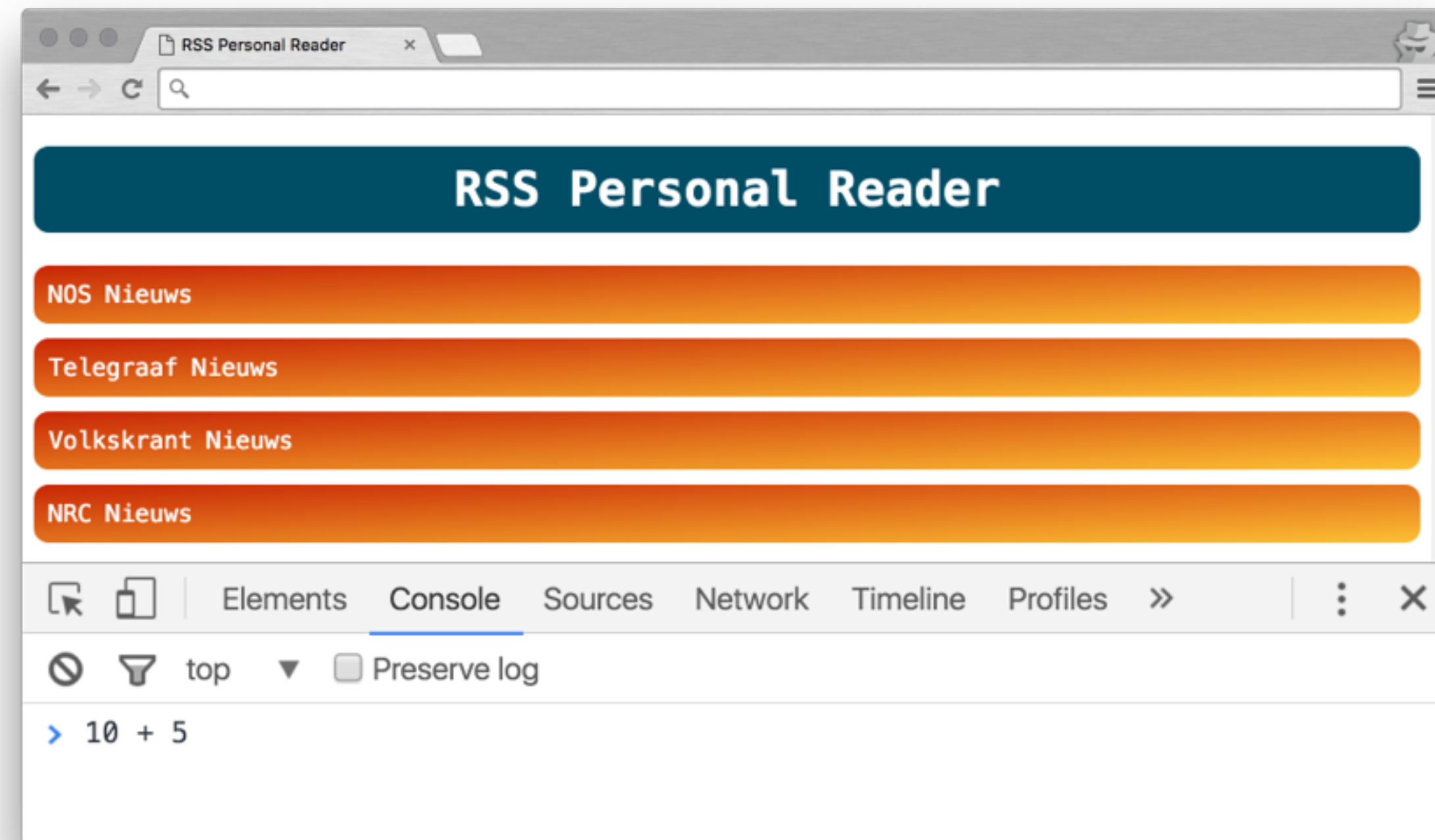
JavaScript

Behaviour layer

This is where we can change **how the page behaves**,
adding **interactivity**.



JavaScript lives in your browser



Open JavaScript Console

CMD + ALT + J (Mac)

Control + Shift + J (Windows/Linux)



Exercise

JavaScript Maths

Open the JavaScript console in your browser
and use it to do some calculations.



How JavaScript makes pages more interactive

Access content

select elements that have a ``warning`` class

Modify content

add a paragraph of text after the first `<h1>` element

Program Rules or Instructions

write a script that writes some content depending on the day time

React to events

specify that a script should be run when a button is clicked



Objects (things) & properties (characteristics)

In computer programming,
each thing in the world
can be represented as an object.

Each object can have
its own **properties** and **methods**.



Objects (things) & properties (characteristics)

Window Object

The browser represents each window or tab using a **window** object.

javascript console

```
> window.location;  
> window.alert("We are building a RSS Feed Reader!");
```



Objects (things) & properties (characteristics)

Document Object

The current web page loaded into each window is modelled using the **document** object.

javascript console

```
> document.title;  
> document.write("It is gonna be awesome");
```



Exercise

Exploring the Console

Open up an alert box.

Inspect web page title and location.

Write some text on the web page.



What is a Variable?

Variables can be thought of
as **named containers**.

You can place data into these containers
and refer to that data simply by
naming the container.



What is a variable?

javascript console

```
// Store a string
```

```
> var text = "It is gonna be awesome";
```

```
> document.write(text);
```

```
// Store a number
```

```
> var sum = 10 + 5;
```

```
> document.write(sum);
```

```
// Store a boolean (true/false)
```

```
> var buildingFeedReaderAtNOS = true;
```

```
> document.write(buildingFeedReaderAtNOS);
```



Exercise

Storing feed urls in variables

Visit the site [NEDERLANDSE RSS FEEDS](#).

Select some sites to follow.

Store each of the feed urls in a variable.

js/rss.js

```
var nosUrl = "http://feeds.nos.nl/nosjournaal";
```



What is a script and how to create one

A script is a **series of instructions** that a computer can follow step-by-step to achieve a goal.

First **state your goal** and then **list the tasks** that need to be completed to achieve it.



Creating your first script

Greeting with JavaScript

This script adds a greeting into an HTML page.

The greeting changes depending on the time.

js/greetings.js

```
var today = new Date();
var hourNow = today.getHours();
var greeting;

if (hourNow > 18) {
    greeting = 'Good evening!';
} else if (hourNow > 12) {
    greeting = 'Good afternoon!';
} else if (hourNow > 0) {
    greeting = 'Good morning!';
} else {
    greeting = 'Welcome!';
}

document.write('<h3>' + greeting + '</h3>');
```

Linking to JavaScript file from HTML page

Use the HTML
<script> tag

Its **src** attribute
tells the browser
where the JavaScript
file is stored.

index.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>RSS Personal Reader</title>
    <link rel="stylesheet" type="text/css"
      href="css/styles.css">
  </head>
  <body>
    <script src="js/greeting.js"></script>
    <h1 class="title">
      RSS Personal Reader
    </h1>
  </body>
</html>
```

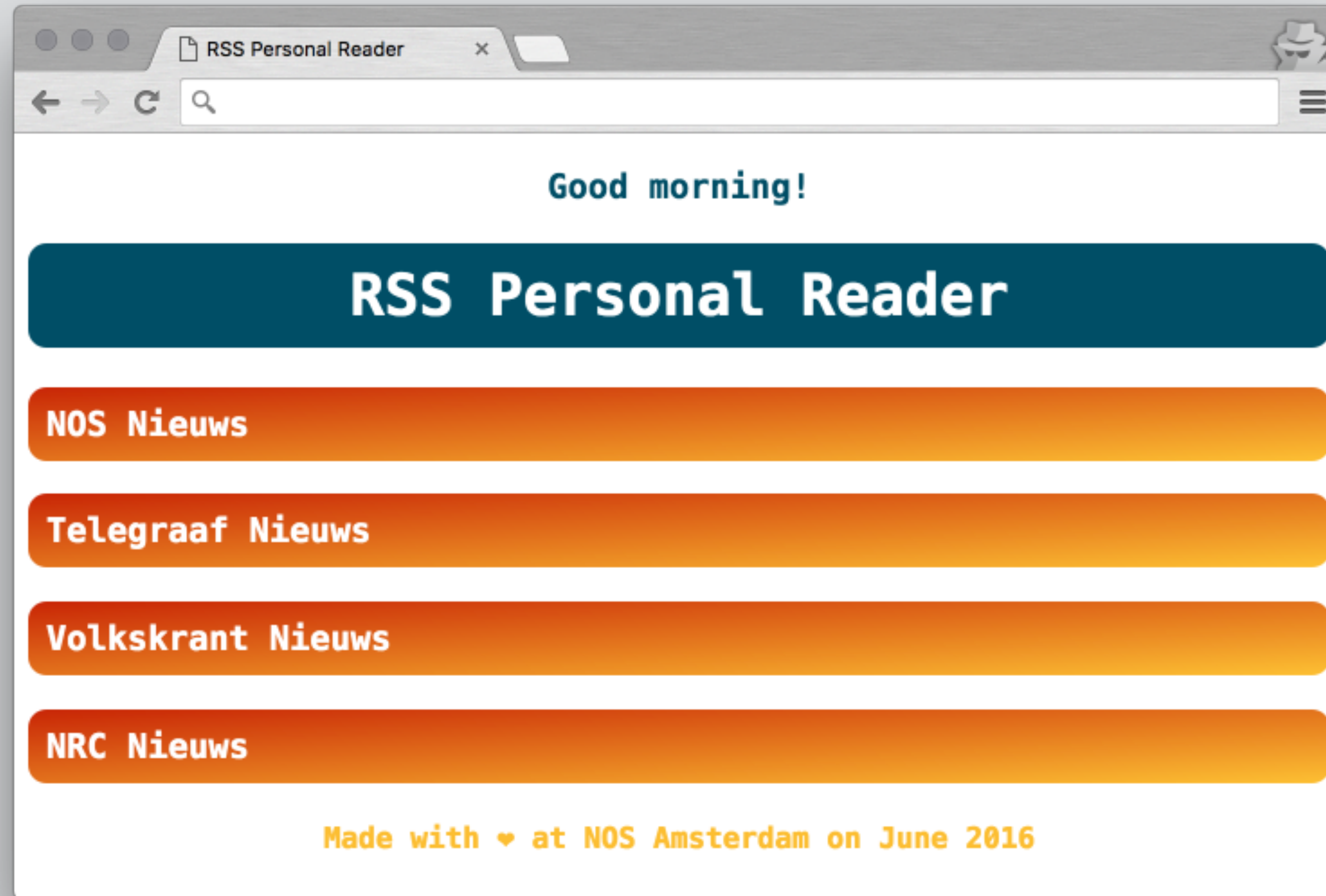
Exercise

Greeting with JavaScript

Add any message you wish
at the top of your web page
depending on the day time.



Exercise



What is an Object?

Objects group together a **set of variables** to **create a model** of something you would recognize from the real world.

In an object,
variables become known as **properties**.



What is an Object?

Example of an object could be a library where a **collection of feed urls** are stored, categorized by site.

js/rss.js

```
var feedsLibrary = {  
  nos: "http://feeds.nos.nl/nosjournaal"  
}
```

key

value



Access & update text / markup with innerHTML

You can select any element in the HTML by selecting its **class** or **id** attribute.

*How to show the **nosUrl** value within the **nos** unordered list?*

index.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>RSS Personal Reader</title>
    <link rel="stylesheet" type="text/css"
      href="css/styles.css">
  </head>

  <body>
    ...
    <ul id="nos"></ul>
    <script src="js/rss.js"></script>
  </body>
</html>
```



Access & update text / markup with innerHTML

js/rss.js

```
var nosUrl = "http://feeds.nos.nl/nosjournaal";

var feedsLibrary = {
  nos: nosUrl
};

var ulNos = document.getElementById('nos');

ulNos.innerHTML = '<a href="' + feedsLibrary.nos + '">'
                  + feedsLibrary.nos + '</a>';
```



Exercise

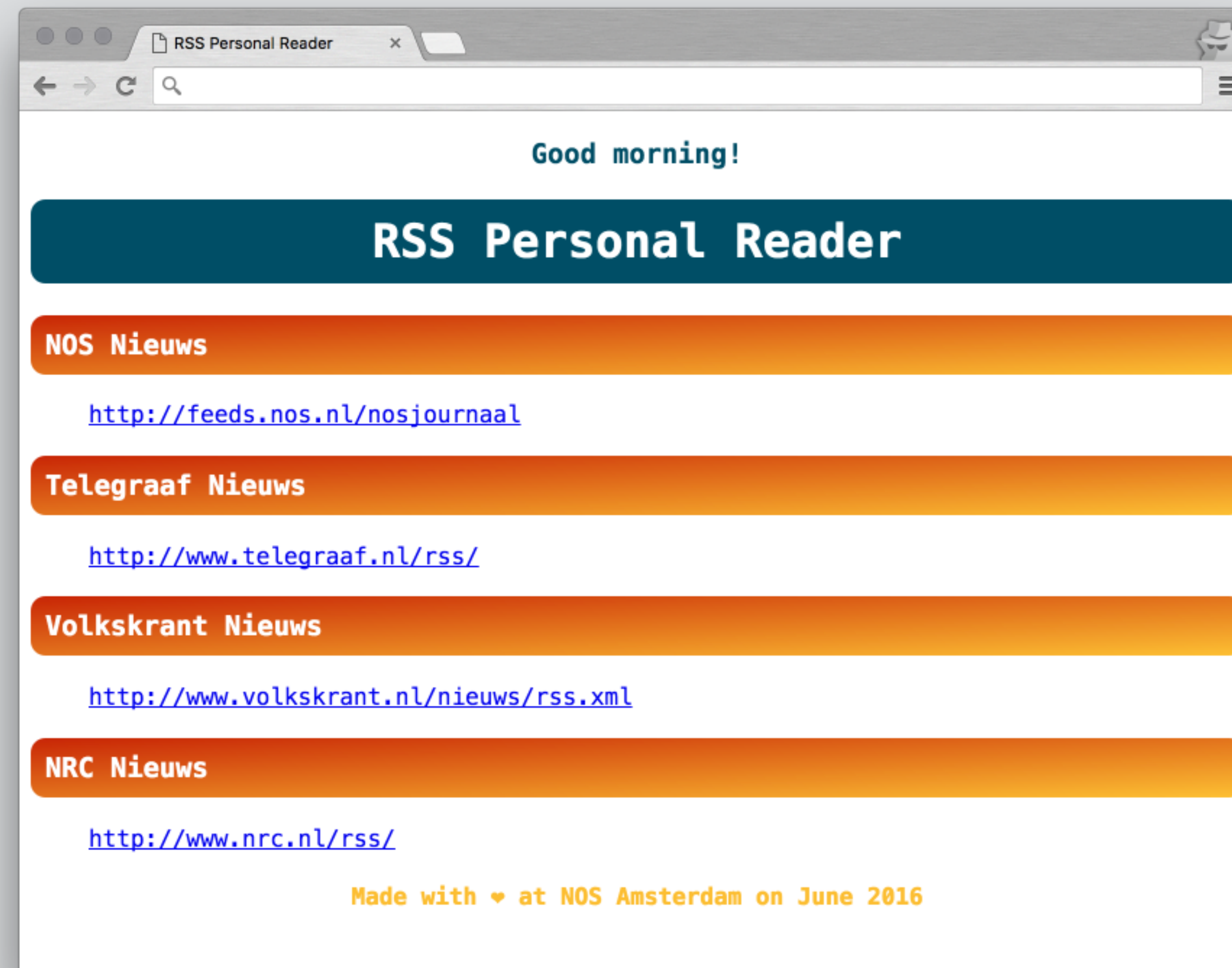
Rendering feed URLs with JavaScript

Show each of the feed URLs
stored in the **feedLibrary** object
under its corresponding unordered list.

Make these links to open in a different tab
by themselves.



Exercise





jQuery
Easier JavaScript

Achieve common JavaScript tasks **quickly and consistently**, across all major browsers.

Find elements using CSS-style selectors

Same output, different syntax

js/rss.js

```
// JavaScript  
var ulNos = document.getElementById('nos');  
ulNos.innerHTML = '<a href="' + feedsLibrary.nos + '">NOS Feeds</a>';
```

```
// jQuery  
var ulNos = $('#ul#nos');  
ulNos.html('<a href="' + feedsLibrary.nos + '">NOS Feeds</a>');
```



Include jQuery in your page

index.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>RSS Personal Reader</title>
    <link rel="stylesheet" type="text/css" href="css/styles.css">
  </head>
  <body>
    <!-- ... -->
    <script src="http://code.jquery.com/jquery-1.12.4.min.js"></script>
    <script src="js/rss.js"></script>
  </body>
</html>
```



Exercise

Rendering feed URLs with JavaScript

Add jQuery to your web page.

Rewrite the `js/rss.js` file
with the jQuery syntax.



Working with each property in an object

jQuery allows you to **loop** through the properties of an object, using the **.each()** method.

Often you will want to perform a **series of actions** on each of the elements.



Working with each property in an object

js/rss.js

```
var ulNos = $('#nos');  
ulNos.html('<a href="' + feedsLibrary.nos + '">NOS</a>');  
  
var ulTelegraaf = $('#telegraaf');  
ulTelegraaf.html('<a href="' + feedsLibrary.telegraaf + '">Telegraaf </a>');  
  
var ulVolkskrant = $('#volkskrant');  
ulVolkskrant.html('<a href="' + feedsLibrary.volkskrant + '">Volkskrant</a>');  
  
var ulNrc = $('#nrc');  
ulNrc.html('<a href="' + feedsLibrary.nrc + '">NRC</a>');
```



Working with each property in an object

js/rss.js

```
var feedsLibrary = {  
  nos: "http://feeds.nos.nl/nosjournaal",  
  telegraaf: "http://www.telegraaf.nl/rss/",  
  volkskrant: "http://www.volkskrant.nl/nieuws/rss.xml",  
  nrc: "http://www.nrc.nl/rss/",  
};  
  
$.each(feedsLibrary, function(key, value) {  
  var ulElement = $('#' + key);  
  ulElement.html('<a href="' + value + '"' + value + '</a>');  
});
```



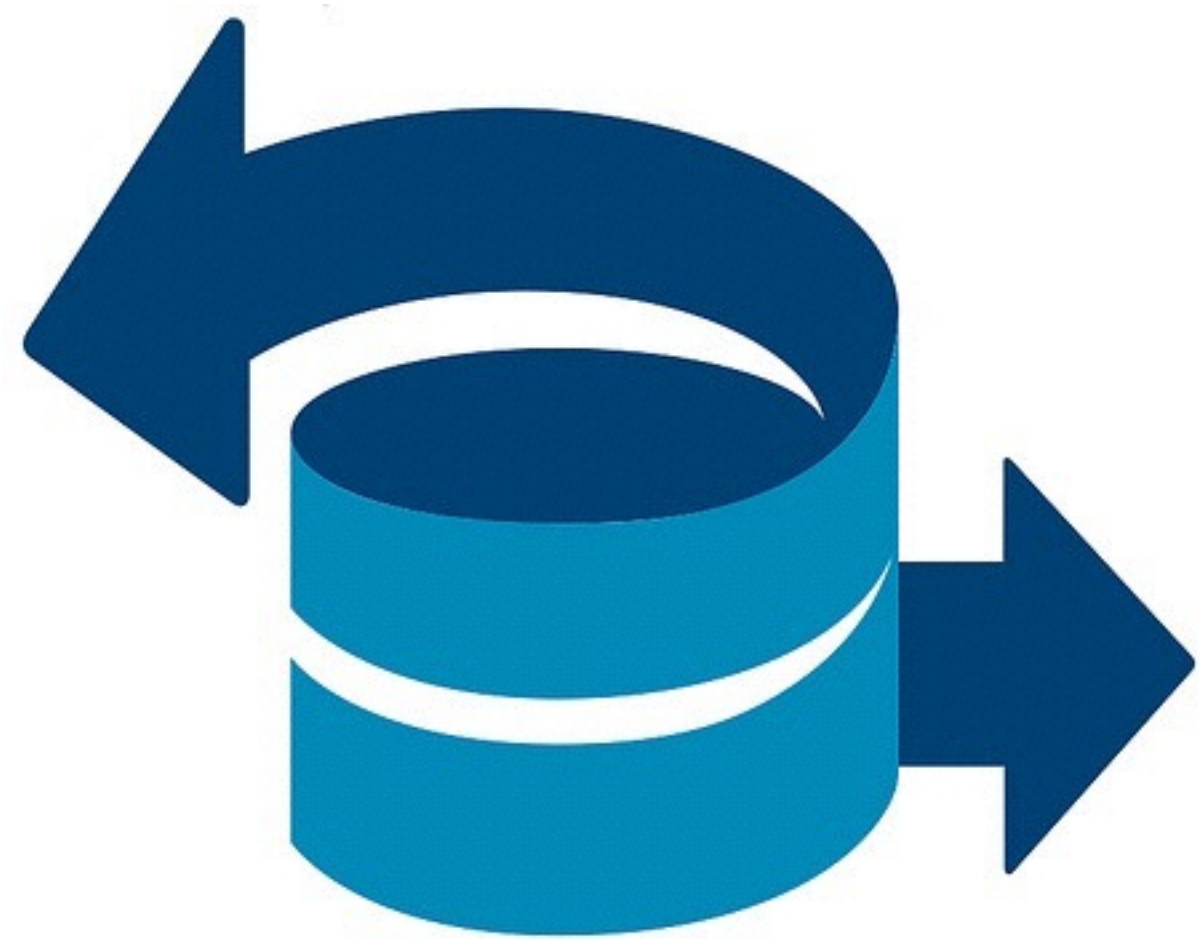
Exercise

Looping through feedsLibrary

Use the `.each()` method to loop through the `feedsLibrary` and render the feed urls in your web page.

Your web page should end up looking the same.





YQL

Yahoo Query Language

Query, filter, and combine **data across the web**
through a single interface.

Exploring YQL

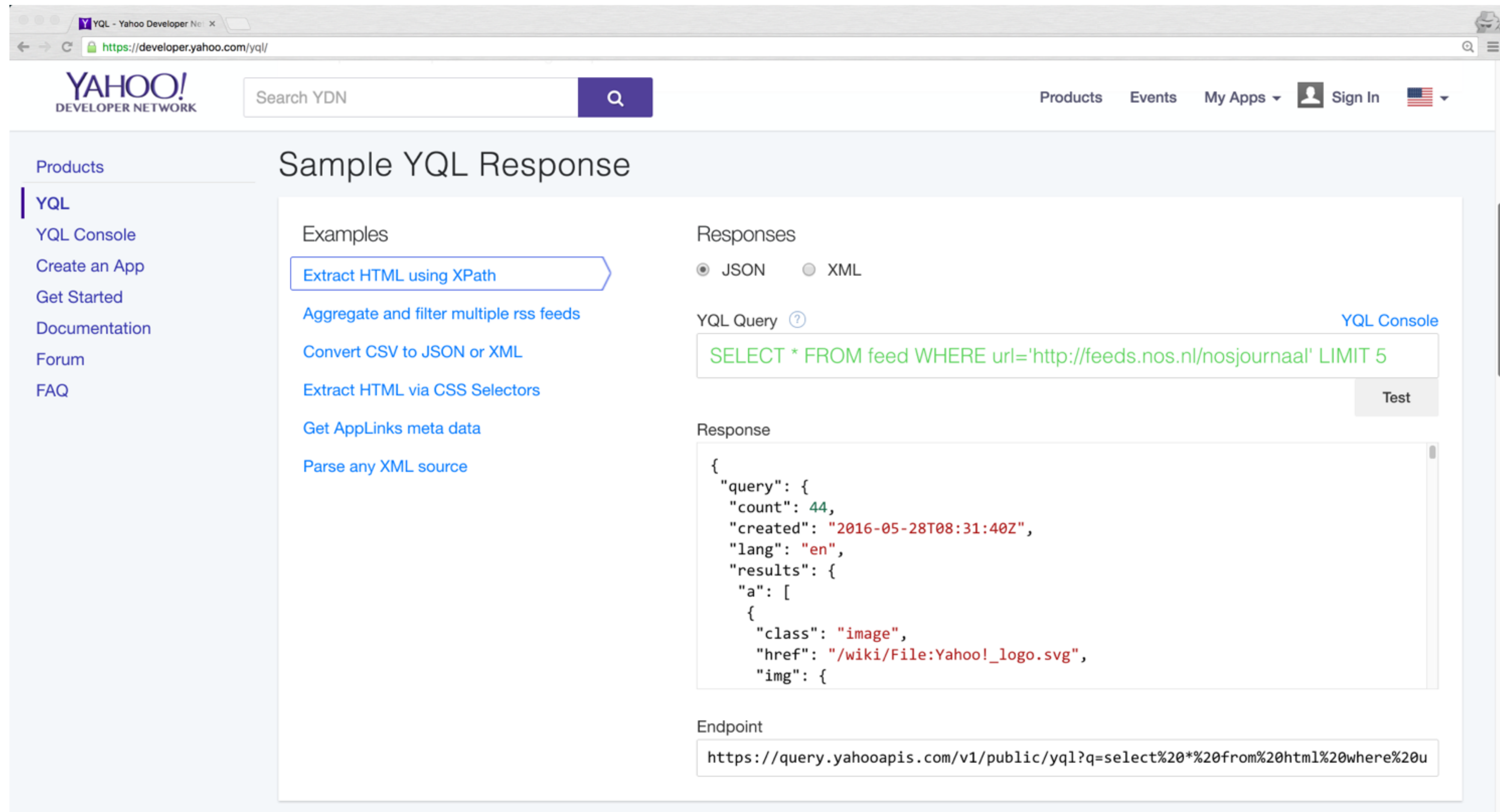
Our purpose

Grab the RSS feed for each of the sites,
passing them through the **query string**.

We will be using the **JSON** form
of the data.



Exploring YQL



The screenshot displays the Yahoo! Developer Network (YDN) YQL interface. The page title is "Sample YQL Response". The left sidebar contains a "Products" menu with links to "YQL", "YQL Console", "Create an App", "Get Started", "Documentation", "Forum", and "FAQ". The main content area is divided into two columns. The left column, titled "Examples", lists several YQL queries: "Extract HTML using XPath" (highlighted), "Aggregate and filter multiple rss feeds", "Convert CSV to JSON or XML", "Extract HTML via CSS Selectors", "Get AppLinks meta data", and "Parse any XML source". The right column, titled "Responses", shows the "JSON" format selected. It contains a "YQL Query" input field with the query: `SELECT * FROM feed WHERE url='http://feeds.nos.nl/nosjournaal' LIMIT 5`. A "Test" button is next to the query. Below the query is a "Response" section displaying a JSON object:

```
{  "query": {    "count": 44,    "created": "2016-05-28T08:31:40Z",    "lang": "en",    "results": {      "a": [        {          "class": "image",          "href": "/wiki/File:Yahoo!_logo.svg",          "img": {
```

. At the bottom, the "Endpoint" is shown as: `https://query.yahooapis.com/v1/public/yql?q=select%20*%20from%20html%20where%20u`.



Visiting the endpoint



```
{
  - query: {
    count: 5,
    created: "2016-05-28T08:30:01Z",
    lang: "en",
    - results: {
      - item: [
        - {
          title: "Man in bijzijn van zoontje geliquideerd in Diemen-Noord",
          link: "http://feeds.nos.nl/~r/nosjournaal/~3/mqNQvZg8J58/2107729",
          - enclosure: {
            type: "image/jpeg",
            url: "http://nos.nl/data/image/2016/05/28/285742/m.jpg"
          },
          description: "De man werd onder vuur genomen toen hij in zijn auto zat. Hij was een bekende van de politie.<img src='http://feeds.feedburner.com/~r/nosjournaal/~4/mqNQvZg8J58' height='1' width='1' alt='' />",
          pubDate: "Sat, 28 May 2016 07:42:54 +02:00",
          - guid: {
            isPermaLink: "false",
            content: "http://nos.nl/1/2107729"
          },
          origLink: "http://nos.nl/1/2107729"
        },
        + { ... },
        + { ... },
        + { ... },
        + { ... }
      ]
    }
  }
}
```



Building up the query string

yahoo sql language

```
SELECT * FROM feed WHERE url="path/to/rss/feed" LIMIT 5
```

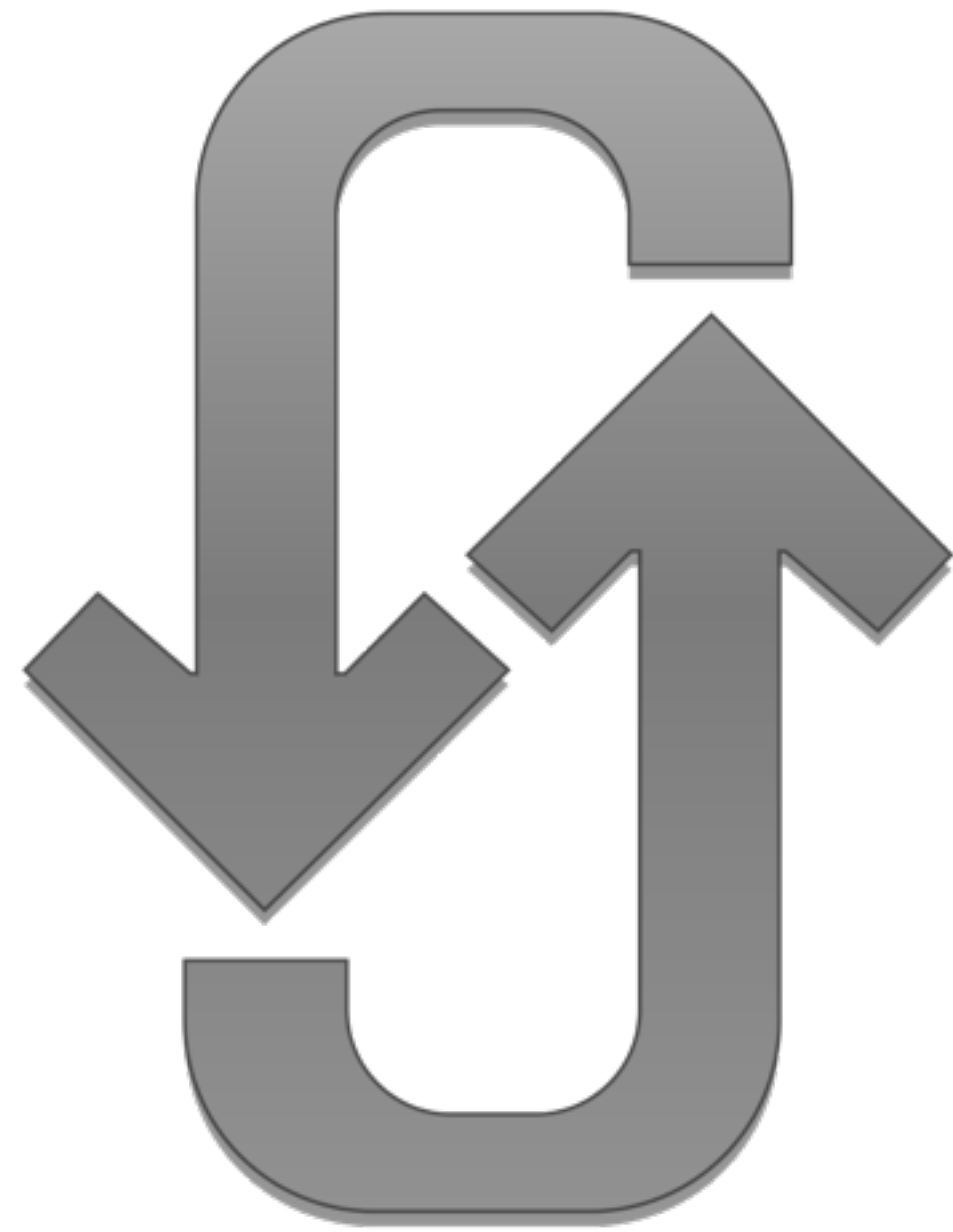


Exercise

Visiting the Endpoints

Check out the different endpoints for the sites that you stored under the **feedsLibrary**.



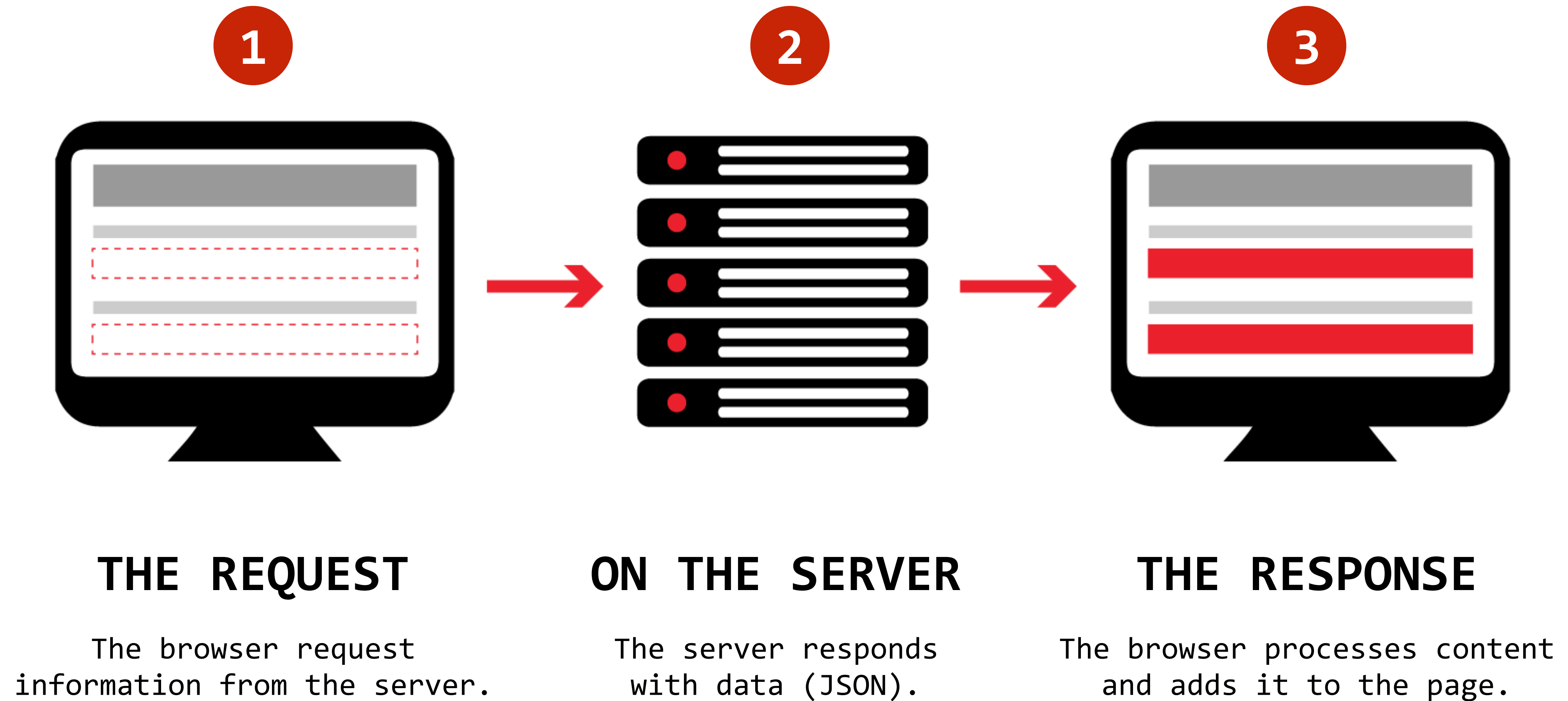


Ajax

Requesting Information

The **browser requests information**
from a web server using Ajax.

How Ajax Works



Building the path for the request

https://query.yahooapis.com/v1/public/yql?q=SELECT%20*%20FROM%20feed%20WHERE%20url%3D%27http%3A%2F%2Ffeeds.nos.nl%2Fnosjournal%27%20LIMIT%205&format=json

js/rss.js

```
var baseUrl = "http://query.yahooapis.com/v1/public/yql?q=";  
  
var queryString = encodeURIComponent  
    ("SELECT * FROM feed WHERE url='" + nosUrl + "' LIMIT 5");  
  
var format = "&format=json";  
  
var rssFeedPath = baseUrl.concat(queryString, format);
```



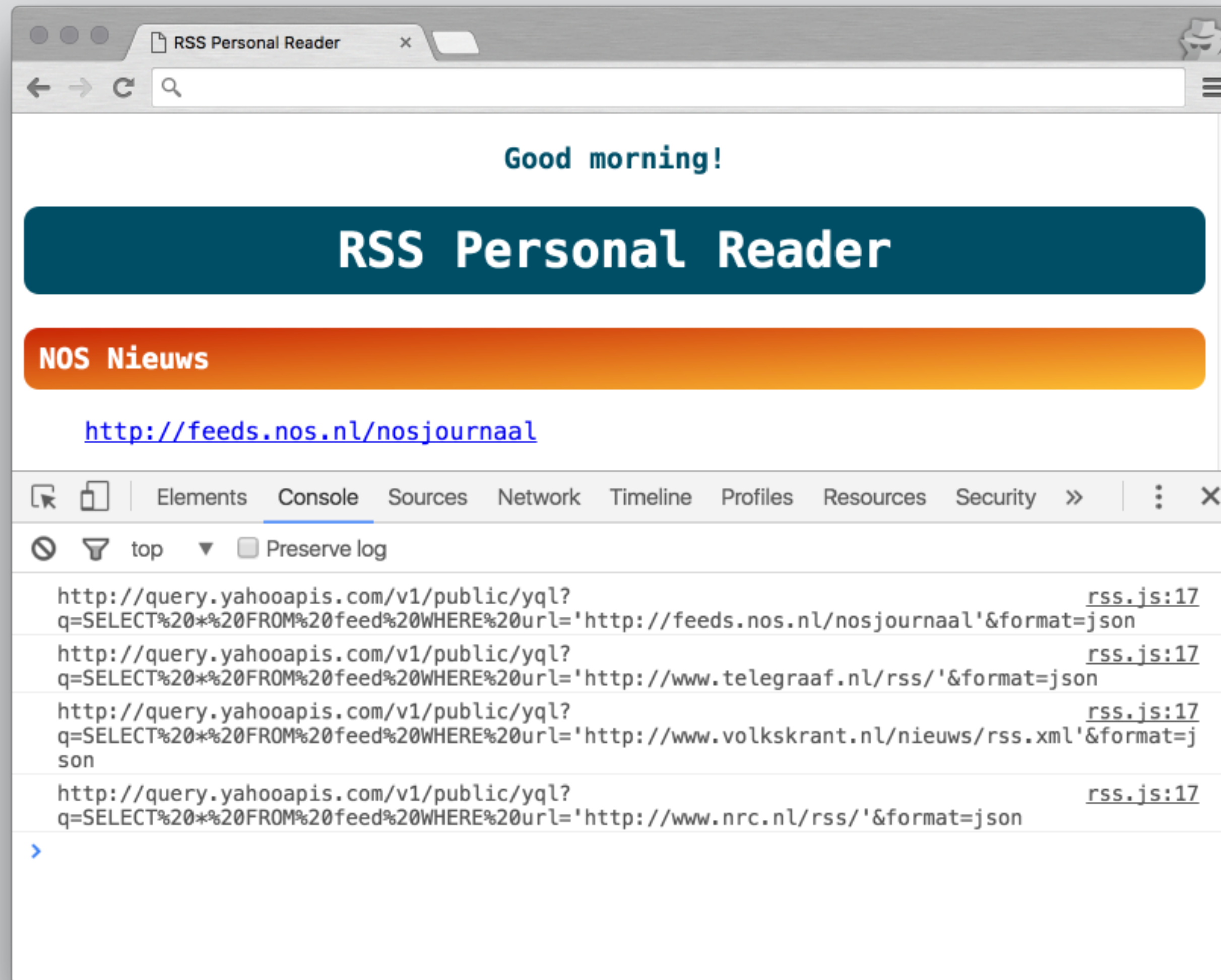
Exercise

Printing out the rss feeds paths

Apply everything you know of YQL and Ajax to print out the path for each of the sites that you are following in the JavaScript console.



Exercise



Handling Ajax Requests & Responses

jQuery provides several methods that handle Ajax requests.

In this case we will need to load JSON data from a web server. The **.getJSON()** method is the one that helps us doing so.



Handling Ajax Requests & Responses

url = where the data is fetched from
callback = function called when data returned

```
$.getJSON(url, function(response) {  
    // Do something with the response  
});
```

js/rss.js

callback

A red arrow points from the 'callback' label in the red box to the 'function(response)' part of the \$.getJSON call in the code block above.

Exercise

Printing out the response

Using the `.getJSON()` method, print out the value of the `response` coming from the web server into the JavaScript console for each of the rss feeds paths.

Print out also the values of `response.query`, `response.query.results` and `response.query.results.item`.



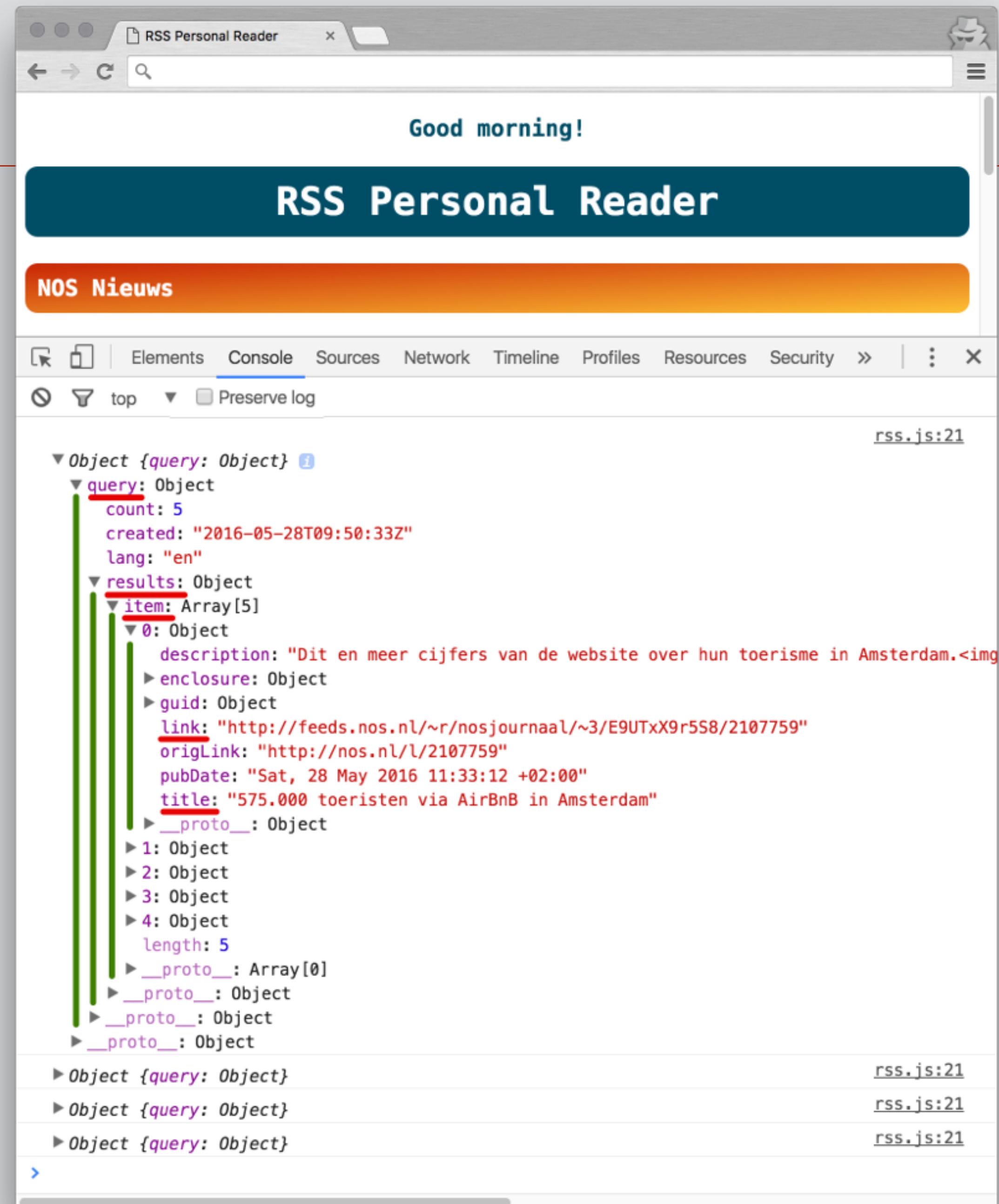
Exercise

Print out the values of:

`response.query`

`response.query.results`

`response.query.results.item`



The screenshot shows a web browser window titled "RSS Personal Reader". The page content includes a greeting "Good morning!", a dark blue header with the text "RSS Personal Reader", and an orange bar with the text "NOS Nieuws". Below the header, the browser's developer console is open, displaying the "Console" tab. The console shows a log of an object from `rss.js:21`. The object has a `query` property, which is an object containing `count` (5), `created` ("2016-05-28T09:50:33Z"), and `lang` ("en"). The `query` object also has a `results` property, which is an object containing an `item` property. The `item` property is an array of 5 objects. The first object in the array has the following properties: `description` ("Dit en meer cijfers van de website over hun toerisme in Amsterdam.<img"), `enclosure` (Object), `guid` (Object), `link` ("http://feeds.nos.nl/~r/nosjournaal/~3/E9UTxX9r5S8/2107759"), `origLink` ("http://nos.nl/l/2107759"), `pubDate` ("Sat, 28 May 2016 11:33:12 +02:00"), and `title` ("575.000 toeristen via AirBnB in Amsterdam"). The console also shows three subsequent log entries, each being an object with a `query` property, all from `rss.js:21`.

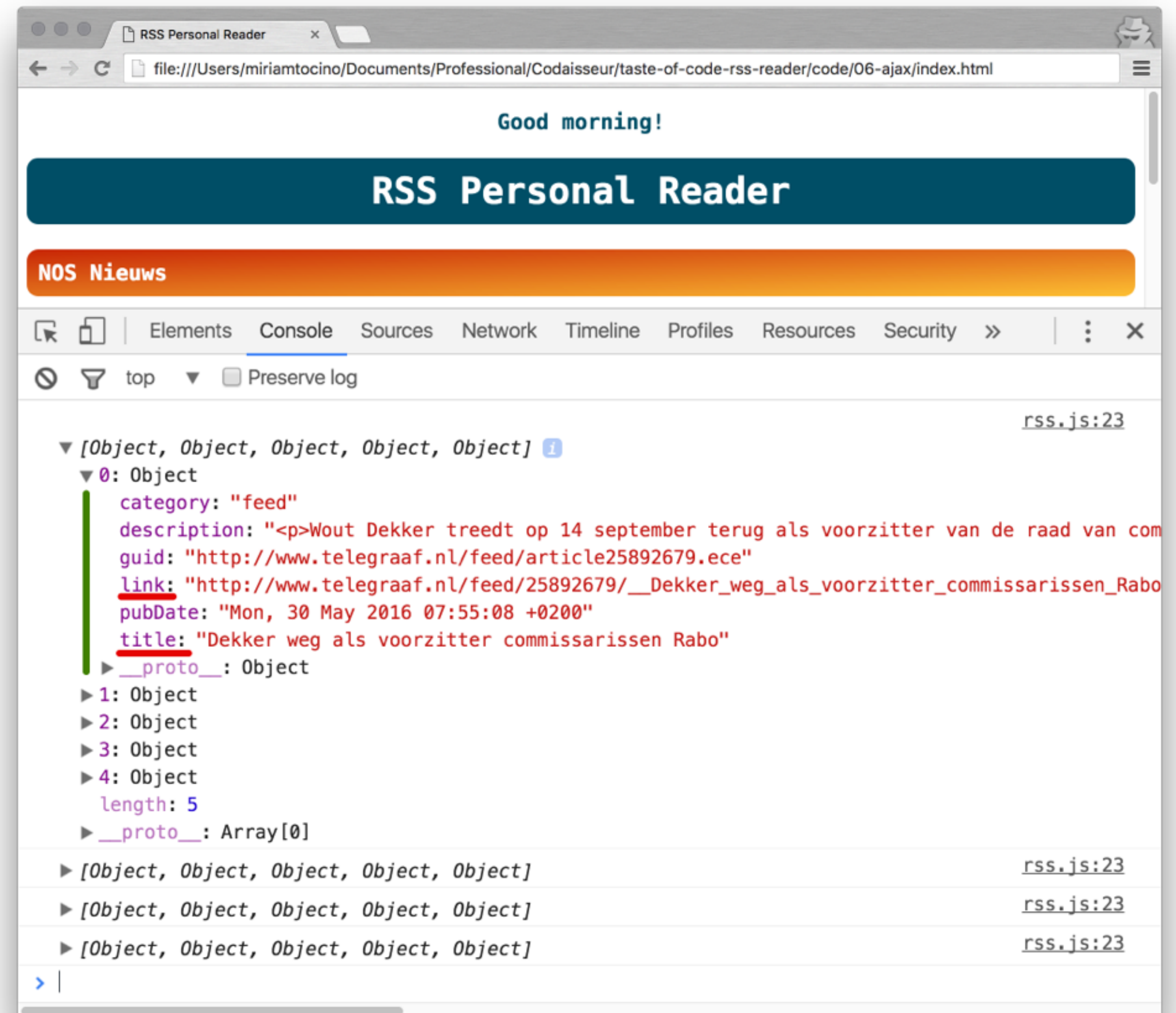
```
Object {query: Object}
  query: Object
    count: 5
    created: "2016-05-28T09:50:33Z"
    lang: "en"
    results: Object
      item: Array[5]
        0: Object
          description: "Dit en meer cijfers van de website over hun toerisme in Amsterdam.<img"
          enclosure: Object
          guid: Object
          link: "http://feeds.nos.nl/~r/nosjournaal/~3/E9UTxX9r5S8/2107759"
          origLink: "http://nos.nl/l/2107759"
          pubDate: "Sat, 28 May 2016 11:33:12 +02:00"
          title: "575.000 toeristen via AirBnB in Amsterdam"
          __proto__: Object
        1: Object
        2: Object
        3: Object
        4: Object
        length: 5
        __proto__: Array[0]
      __proto__: Object
    __proto__: Object
  __proto__: Object
Object {query: Object}
Object {query: Object}
Object {query: Object}
```



Retrieving articles title and link

`response.query.results.item`
is an array of objects.

Arrays are just another way
of storing data as a
collection.



Retrieving articles title and link

the `response.query.results.item` array
stores a collection of articles

js/rss.js

```
var feedItems = response.query.results.item;
```

```
// First item data
```

```
link1 = feedItems[0].link;
```

```
title1 = feedItems[0].title;
```

```
// Second item data
```

```
link2 = feedItems[1].link;
```

```
title2 = feedItems[1].title;
```

```
// ...
```

`[0], [1], [2] ...`

are called **index**
and represents the element position
within the array



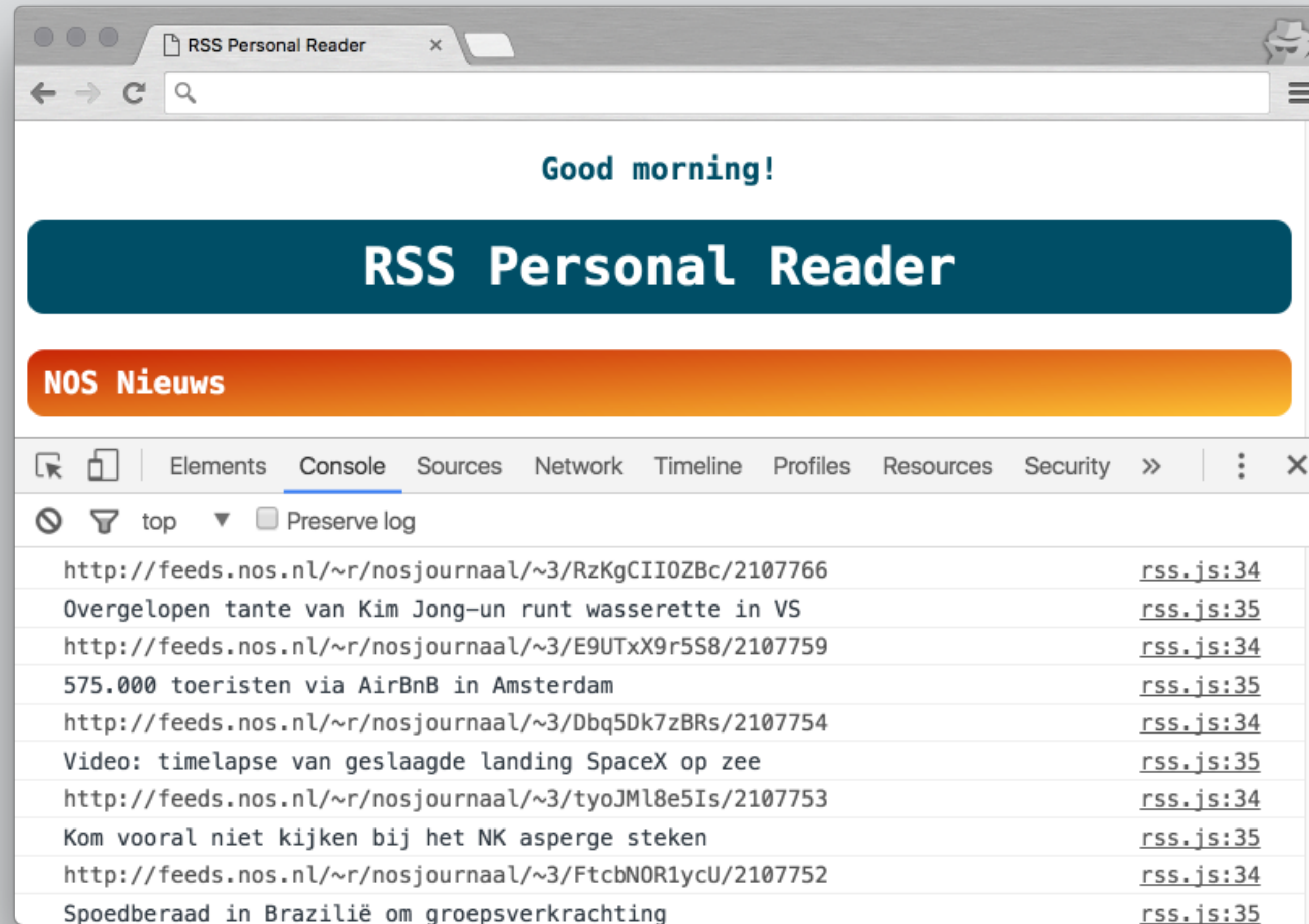
Exercise

Printing out links and titles

Go ahead and print out each of the articles
links and titles in the console.



Exercise



Exercise

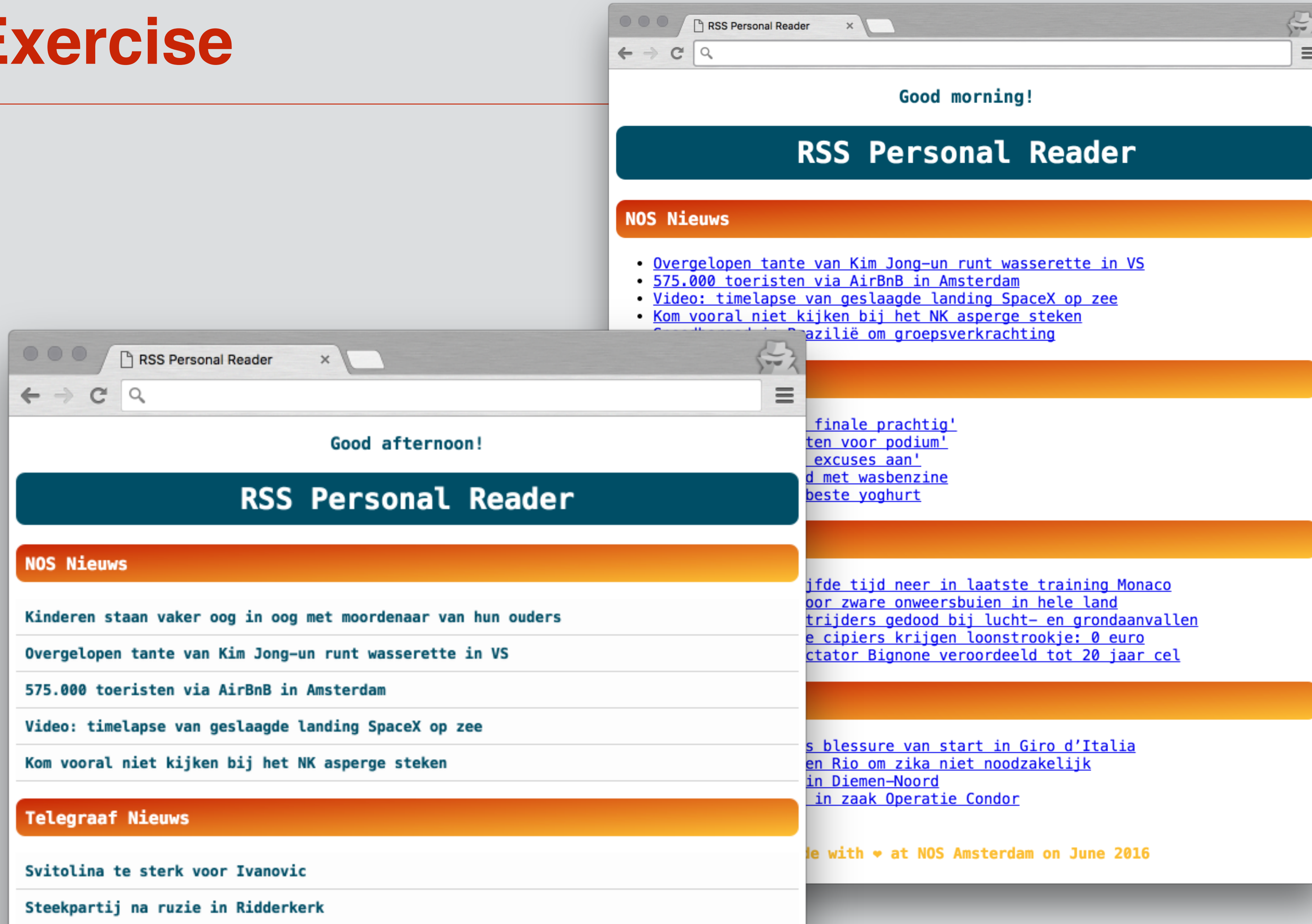
Rendering links and titles

Render a list item including a link to each of the articles for every site site.

Make it so that every link opens in a new tab in your browser.



Exercise



Good morning!

RSS Personal Reader

NOS Nieuws

- [Overgelopen tante van Kim Jong-un runt wasserette in VS](#)
- [575.000 toeristen via AirBnB in Amsterdam](#)
- [Video: timelapse van geslaagde landing SpaceX op zee](#)
- [Kom vooral niet kijken bij het NK asperge steken](#)
- [Gedetineerde in Brazilië om groepsverkrachting](#)

Good afternoon!

RSS Personal Reader

NOS Nieuws

- [Kinderen staan vaker oog in oog met moordenaar van hun ouders](#)
- [Overgelopen tante van Kim Jong-un runt wasserette in VS](#)
- [575.000 toeristen via AirBnB in Amsterdam](#)
- [Video: timelapse van geslaagde landing SpaceX op zee](#)
- [Kom vooral niet kijken bij het NK asperge steken](#)

Telegraaf Nieuws

- [Svitolina te sterk voor Ivanovic](#)
- [Steekpartij na ruzie in Ridderkerk](#)

le with ♥ at NOS Amsterdam on June 2016

