Building a Webpage with HTTP nodes in Node-RED

Hands-On Lab

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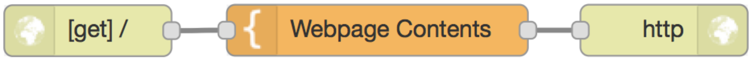
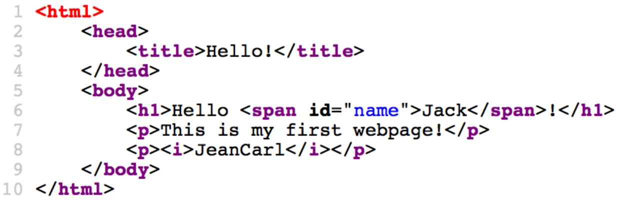
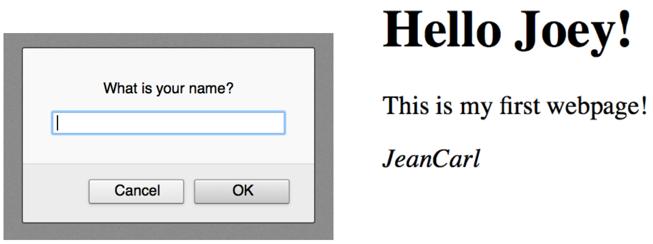


Create a static webpage
(see *Add a Webpage in Node-RED*)



```
<html>
    <head>
        <title>Hello!</title>
    </head>
    <body>
        <h1>Hello <span id="name">Jack</span>!</h1>
        <p>This is my first webpage!</p>
        <p><i>JeanCarl</i></p>
    </body>
</html>
```

Use a URL parameter value in the webpage and to control logic
(see *Use URL parameters in your Node-RED webpage*)



What is your name?

Hello Joey!

This is my first webpage!

JeanCarl

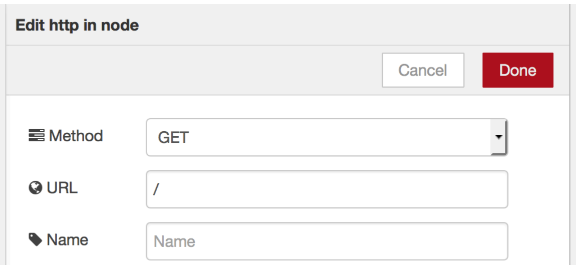
Add JavaScript to make the webpage interactive
(see *Add JavaScript to HTML in Node-RED*)

A digital copy of this lab and code snippets can be found at:
`http://ibm.biz/node-red-webpage`

Add a Webpage in Node-RED

Adding a webpage with HTML, images, and JavaScript is an easy task in Node-RED. Since Node-RED already runs on top of Node.js with a webserver, we can add an endpoint where our webpage will be accessible and return some content to the browser to display.

1. Add a http node to the Node-RED canvas. Double click and customize with the following settings:



Edit http in node

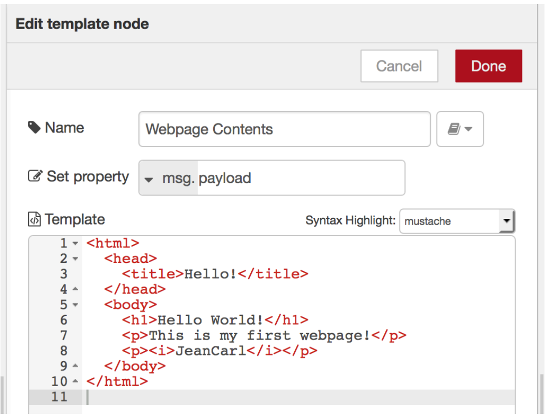
Cancel | Done

Method: GET

URL: /

Name: Name

2. Add a template node. Double click on the node and enter the following HTML. Customize the text within the HTML tags, including your name and perhaps a personal message. Wrap text within HTML tags shown in the table below to format the text.



Edit template node

Cancel | Done

Name: Webpage Contents

Set property: msg. payload

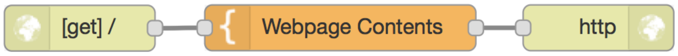
Template — Syntax Highlight: mustache

```
<html>
  <head>
    <title>Hello!</title>
  </head>
  <body>
    <h1>Hello World!</h1>
    <p>This is my first webpage!</p>
    <p><i>JeanCarl</i></p>
  </body>
</html>
```

Get the code:
ibm.biz/Bd4vVr

Style	Bold	*Italic*	Underline	Smaller Ttext	Bigger Text	Large Header	Small Header
HTML tag	<b> </b>	<i> </i>	<u> </u>	<small> </small>	<big> </big>	<h1> </h1>	<h6> </h6>

3. Add a http response node. Connect the nodes together as follows:



4. Click on the Deploy button in the top right corner of the page to save and deploy the changes.

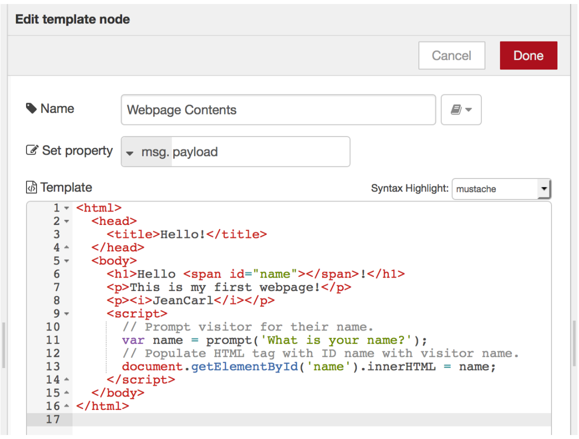
5. Open a new browser tab and visit your application's URL:

```
http://<my-app>.mybluemix.net/
```

Add JavaScript to HTML in Node-RED

A static webpage isn't very exciting. Let's add some JavaScript to make our new webpage a little more interactive. Using the same flow created in the previous section, we'll modify the node named Webpage Contents to include JavaScript inside <script>…</script> tags.

1. Double click on the { template node named Webpage Contents and change the HTML to the following:



Name: Webpage Contents

Set property: msg. payload

Template

Syntax Highlight: mustache

```
<html>
  <head>
    <title>Hello!</title>
  </head>
  <body>
    <h1>Hello <span id="name"></span>!</h1>
    <p>This is my first webpage!</p>
    <p><i>JeanCarl</i></p>
    <script>
      // Prompt visitor for their name.
      var name = prompt('What is your name?');
      // Populate HTML tag with ID name with visitor name.
      document.getElementById('name').innerHTML = name;
    </script>
  </body>
</html>

```

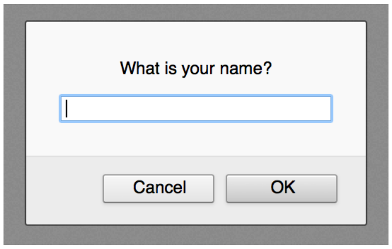
Get the code:
`ibm.biz/Bd4vVj`

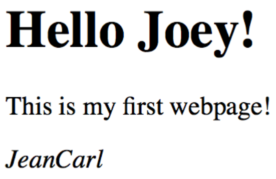
2. Click on the Deploy button in the top right corner of the page to save and deploy the changes.

3. Open a new browser tab and visit your application's URL:

```
http://<my-app>.mybluemix.net/
```

4. When the webpage loads, the JavaScript code in the <script> tag will be interpreted and run. The webpage prompts the visitor for their name. The value entered will be placed in the HTML span tag with the ID name. Entering the name Joey populates the webpage as shown below.





Hello Joey!

This is my first webpage!

JeanCarl

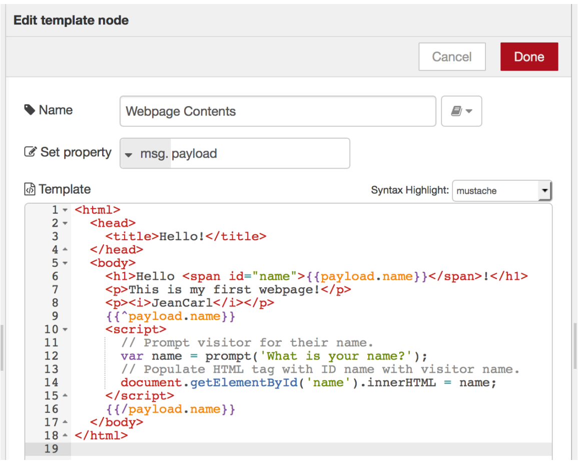
You can include and write more complex JavaScript using frameworks and libraries. Here are some common libraries to search for:

- jQuery
- AngularJS
- ReactJS

Use URL parameters in your Node-RED webpage

Sometimes it's useful to use values from the URL in our webpage to customize the content of the webpage. In this section, we will use the value from the URL parameter named name, if present; otherwise, we'll prompt the user for their name.

1. Continuing with the flow we created previously, double click on the template node named Webpage Contents.
   - Add `{{payload.name}}` inside the span with ID name (line 6)
   - Wrap the <script> tags with `{{^payload.name}}` and `{{/payload.name}}` to conditionally include the code (line 9 & 17)



Name: Webpage Contents

Set property: msg. payload

Template — Syntax Highlight: mustache

```
1  <html>
2    <head>
3      <title>Hello!</title>
4    </head>
5    <body>
6      <h1>Hello <span id="name">{{payload.name}}</span>!</h1>
7      <p>This is my first webpage!</p>
8      <p><i>JeanCarl</i></p>
9      {{^payload.name}}
10     <script>
11       // Prompt visitor for their name.
12       var name = prompt('What is your name?');
13       // Populate HTML tag with ID name with visitor name.
14       document.getElementById('name').innerHTML = name;
15     </script>
16     {{/payload.name}}
17   </body>
18 </html>
19
```

Get the code:
ibm.biz/Bd4vV2

The `{{^payload.name}}` tag checks for a value in the name parameter. If parameter is **NOT** present (or empty), the code is outputted, and the browser interprets and runs the code prompting the user for their name. Otherwise, the JavaScript isn't included and instead the span tag with ID name is populated with the value from the URL parameter named name.

2. Click on the Deploy button in the top right corner of the page to save and deploy the changes.

3. Open a new browser tab and visit your application's URL:

   `http://<my-app>.mybluemix.net/?name=Jack`

4. When a name is present in the URL, the JavaScript code isn't included in the source of the webpage. Right-click on the webpage and select View Page Source. You can see the difference when the name parameter is present/absent in the URL:

`http://<my-app>.mybluemix.net/?name=Jack`

```
<html>
    <head>
        <title>Hello!</title>
    </head>
    <body>
        <h1>Hello <span id="name">Jack</span>!</h1>
        <p>This is my first webpage!</p>
        <p><i>JeanCarl</i></p>
    </body>
</html>
```

`http://<my-app>.mybluemix.net/`

```
<html>
    <head>
        <title>Hello!</title>
    </head>
    <body>
        <h1>Hello <span id="name"></span>!</h1>
        <p>This is my first webpage!</p>
        <p><i>JeanCarl</i></p>
        <script>
            // Prompt visitor for their name.
            var name = prompt('What is your name?');

            // Populate HTML tag with ID name with visitor name.
            document.getElementById('name').innerHTML = name;
        </script>
    </body>
</html>
```

For more information on the mustache syntax, one of the markups used in the Node-RED template node, please visit: `http://ibm.biz/node-red-mustache`