

**PASSION
TO
INNOVATE** | **POWER
TO
CHANGE**



Science For A Better Life

How to create a mobile WebApp?

Walkthrough example including SAS output

PhUSE / 12. October 2015 / Katja Glaß



PASSION TO INNOVATE | POWER TO CHANGE

Agenda

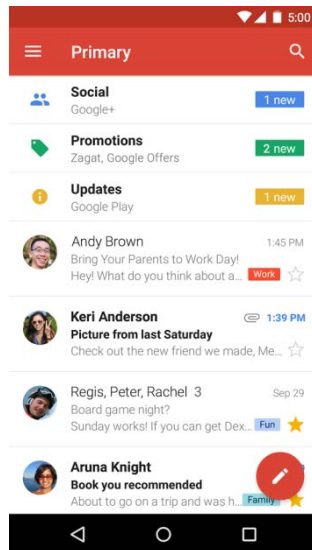
- Introduction
- Getting Started
- WebApp Creation
- Further Options
- Summary

Introduction

Apps are everywhere and pretty useful!

Why not to create an app on our own?

Mails



Chat

Weather

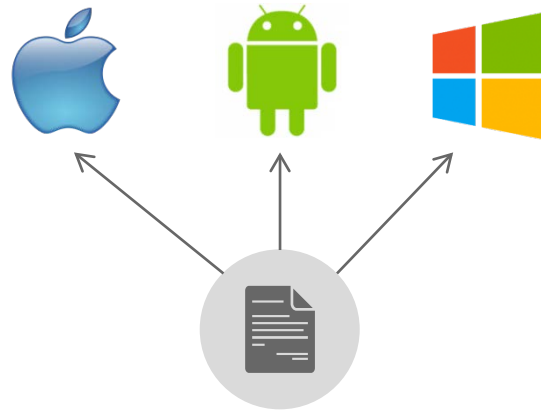


News

Getting Started

Different App Types?

- Native Apps
- Web Apps (HTML5)



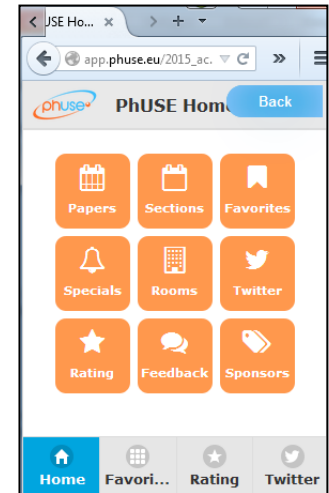
Getting Started

How can users access the App?

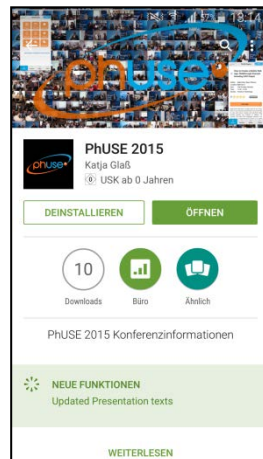
- Hosting



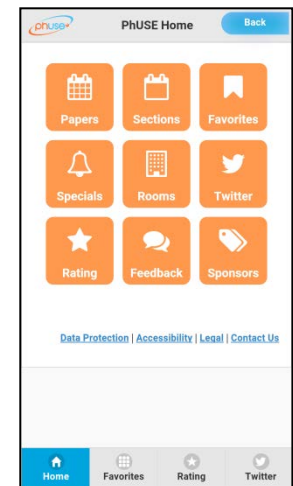
→ app.phuse.eu/2015_ac.html



- Store



→ PhUSE2015



Getting Started

What do I need for programming?

- Editor / SDE (Software Development Environment)
 - Text Editor
 - Eclipse
 - HTML-Editors



Getting Started

What do I need for programming?

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- XAMPP (optional), provide „web-services“ locally



Getting Started

What do I need for programming?

- Editor / SDE (Software Development Environment)

- Text Editor

- Eclipse

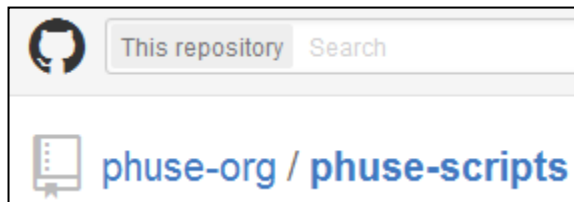
- HTML-Editors



- XAMPP (optional), provide „web-services“ locally



- Code Repositories (optional, collaboration)



WebApp Creation

Let's start! Hello World!!!

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Web App Example</title>
</head>

<body>
Hello World
</body>

</html>
```



WebApp Creation

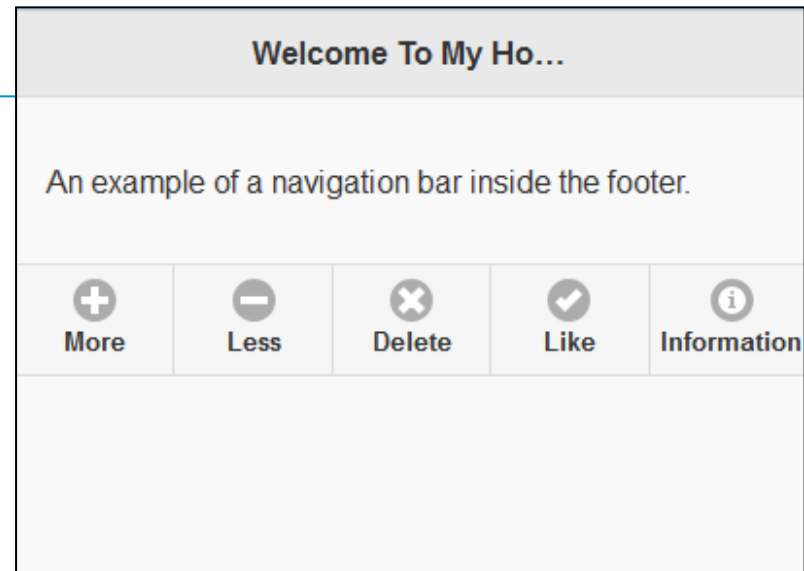
JQuery Mobile

- „Easy“ way to create WebApps
- Search for tutorial

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.css">
<script src="http://code.jquery.com/jquery-1.11.3.min.js"></script>
<script src="http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.js"></script>
</head>
<body>
<div data-role="page" id="pageone">
  <div data-role="header">
    <h1>Welcome To My Homepage</h1>
  </div>

  <div data-role="main" class="ui-content">
    <p>An example of a navigation bar inside
      the footer.</p>
  </div>

  <div data-role="footer">
    <div data-role="navbar">
      <ul>
        <li><a href="#" data-icon="plus">More</a></li>
        <li><a href="#" data-icon="minus">Less</a></li>
        <li><a href="#" data-icon="delete">Delete</a></li>
        <li><a href="#" data-icon="check">Like</a></li>
        <li><a href="#" data-icon="info">Information</a></li>
      </ul>
    </div>
  </div>
</div>
</body>
</html>
```



WebApp Creation – JQuery Mobile

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet"
href="http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.css">
<script src="http://code.jquery.com/jquery-1.11.3.min.js"> </script>
<script src="http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.js">
</script>
</head>

...

</html>
```



JQuery Mobile Style Sheet (CSS)



JQuery Java Script (JS)



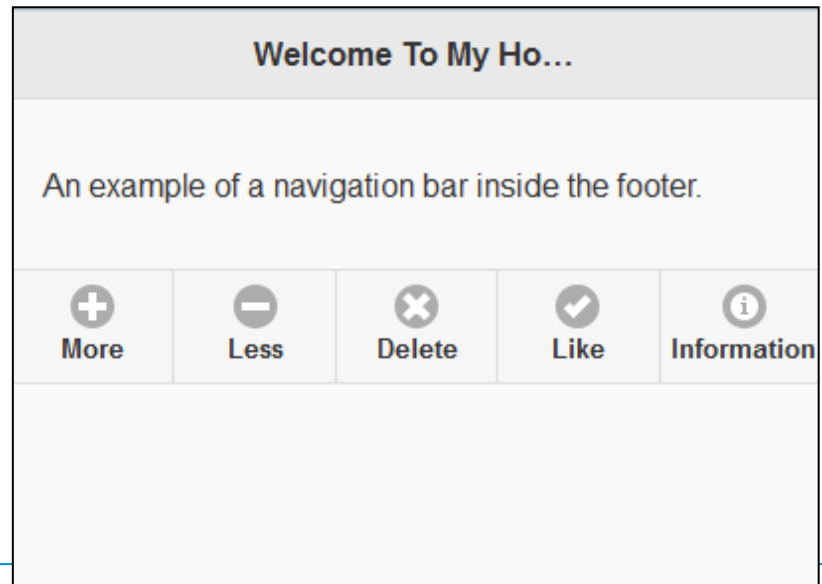
JQuery Mobile Java Script (JS)

WebApp Creation – JQuery Mobile

```
<body>
<div data-role="page" id="pageone">
  <div data-role="header">
    <h1>Welcome To My Homepage</h1>
  </div>

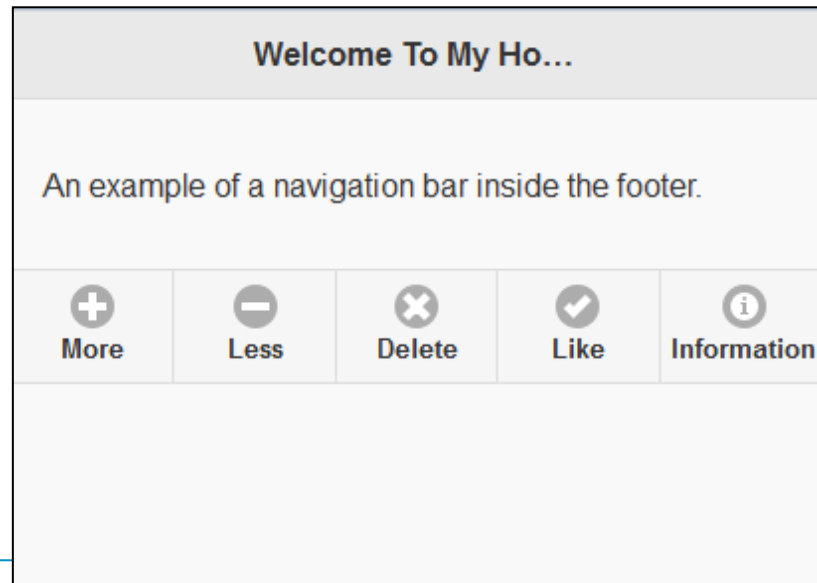
  <div data-role="main" class="ui-content">
    <p>An example of a navigation bar inside
      the footer.</p>
  </div>

  <div data-role="footer">
    ...
  </div>
</div>
</body>
```



WebApp Creation – JQuery Mobile

```
<div data-role="footer">
  <div data-role="navbar">
    <ul>
      <li><a href="#" data-icon="plus">More</a></li>
      <li><a href="#" data-icon="minus">Less</a></li>
      <li><a href="#" data-icon="delete">Delete</a></li>
      <li><a href="#" data-icon="check">Like</a></li>
      <li><a href="#" data-icon="info">Information</a></li>
    </ul>
  </div>
</div>
```



WebApp Creation

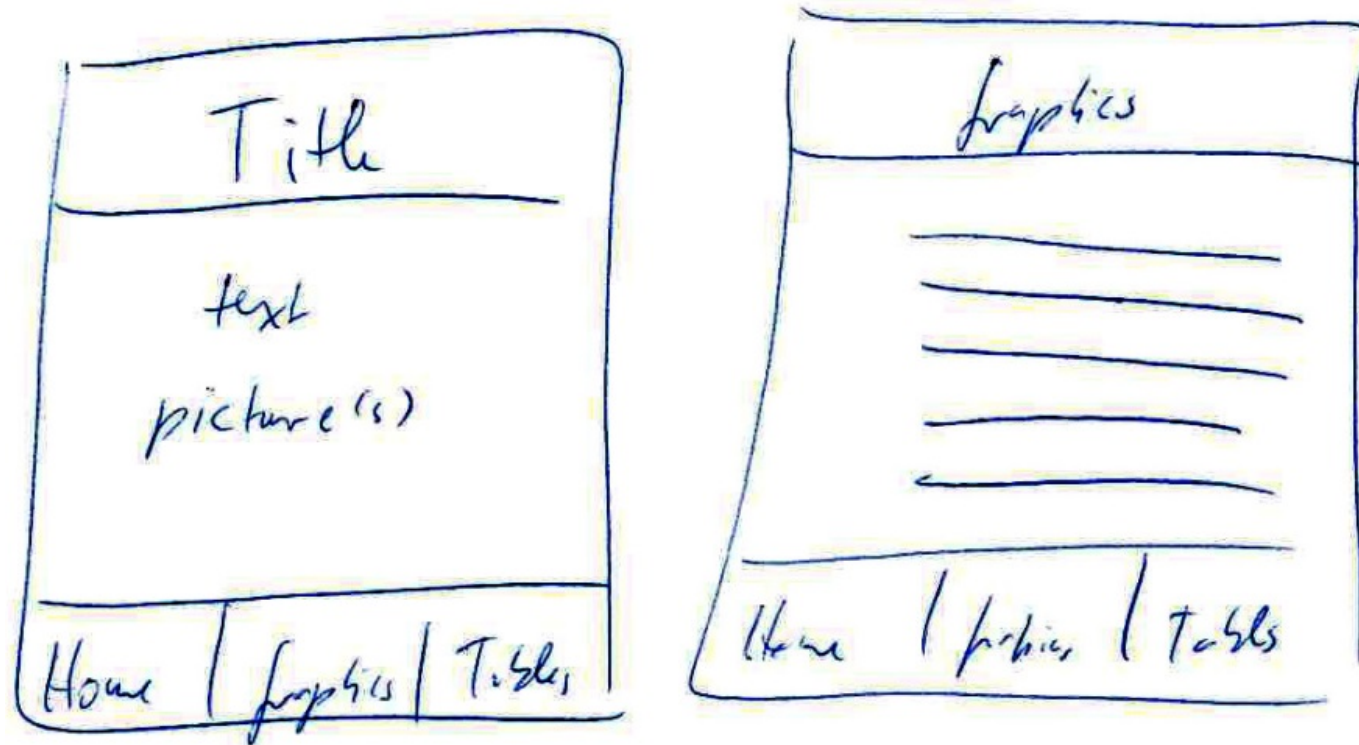
What should our app be about and look like?



WebApp Creation

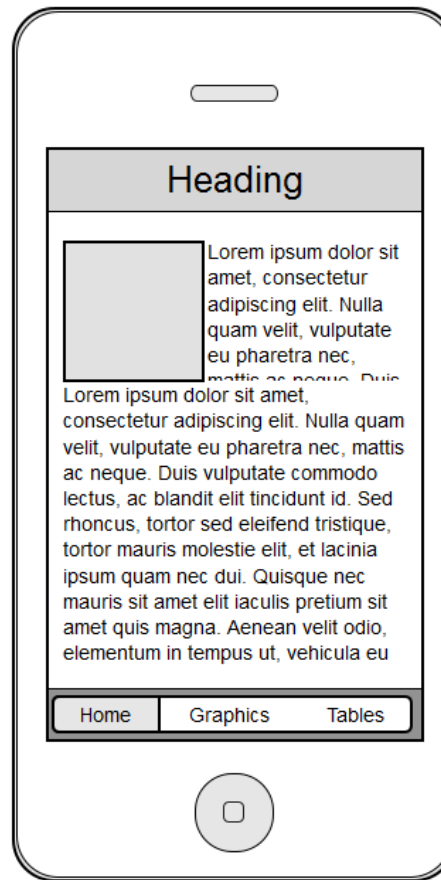
What should our app be about and look like?

- „Sketch“ the app!



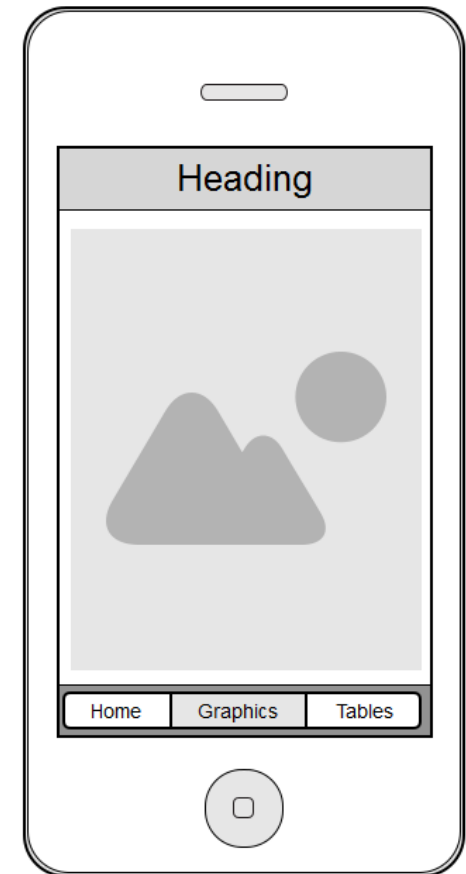
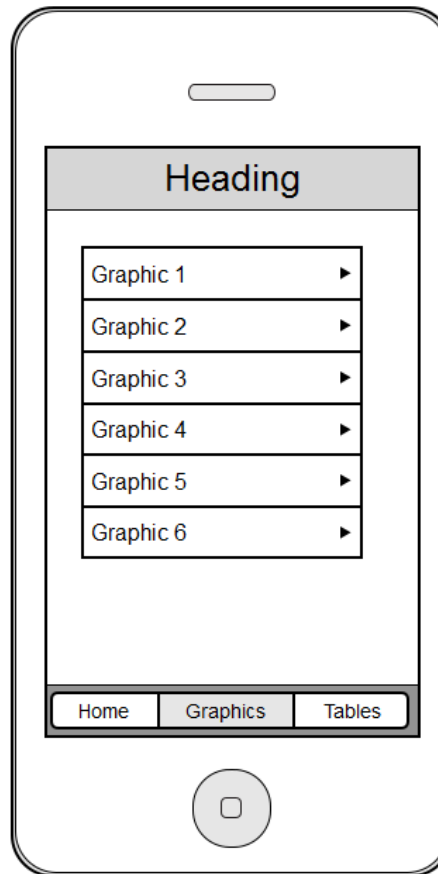
WebApp Creation - Sketch

1) Introduction



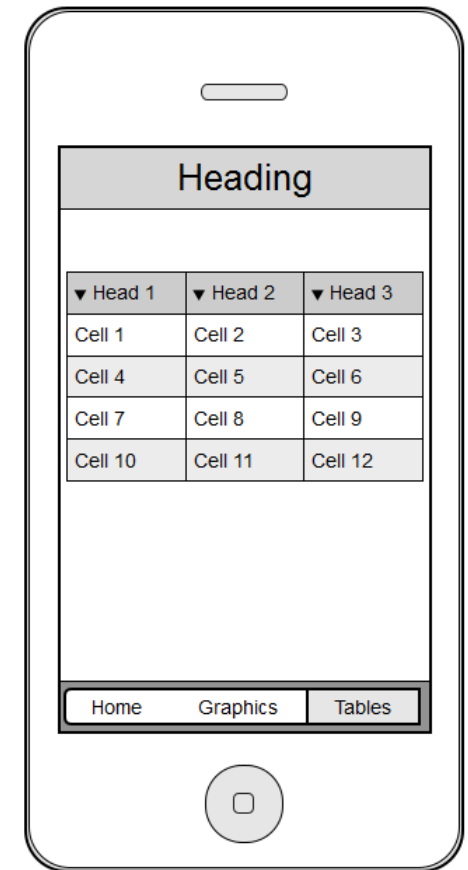
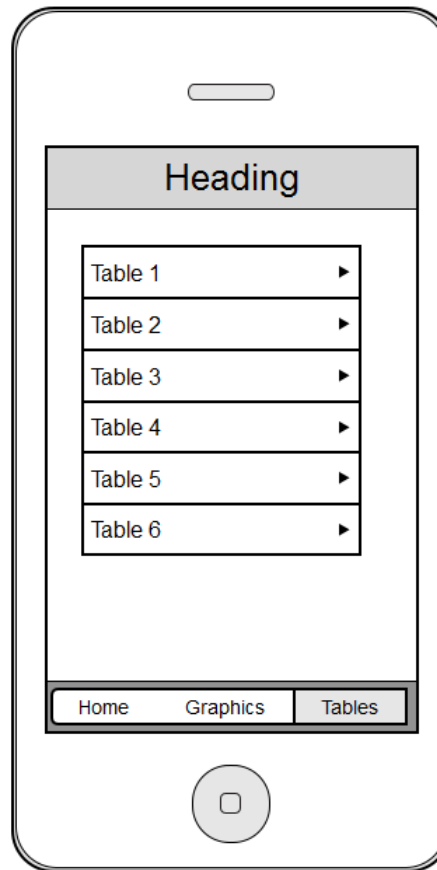
WebApp Creation - Sketch

- 1) Introduction
- 2) Graphics Overview
- 3) Graphic



WebApp Creation - Sketch

- 1) Introduction
- 2) Graphics Overview
- 3) Graphic
- 4) Tables Overview
- 5) Tables

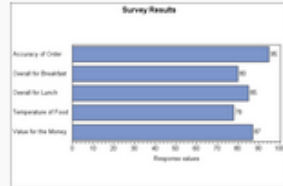


WebApp Creation

Starting the „Introduction“ page

- Adapt JQuery Mobile example
- Update Title
- Update Footer (texts & icons)
- Content includes an image and a paragraph <p>

WebApp Exam...



Survey Results

Category	Percentage
Accuracy of Order	85%
Speed for Breakfast	80%
Speed for Lunch	85%
Temperature of food	75%
Value for the Money	80%

This is an example WebApp which can be used as basis for developing further apps. This WebApp is described in detail in the PhUSE Paper "How to create a mobile WebApp? Walkthrough example including SAS output" by Katja Glaß which can be accessed through this [link](#).

Feel free to work in the PhUSE Repository to share related WebApps and also to get feedback and development support.

Home

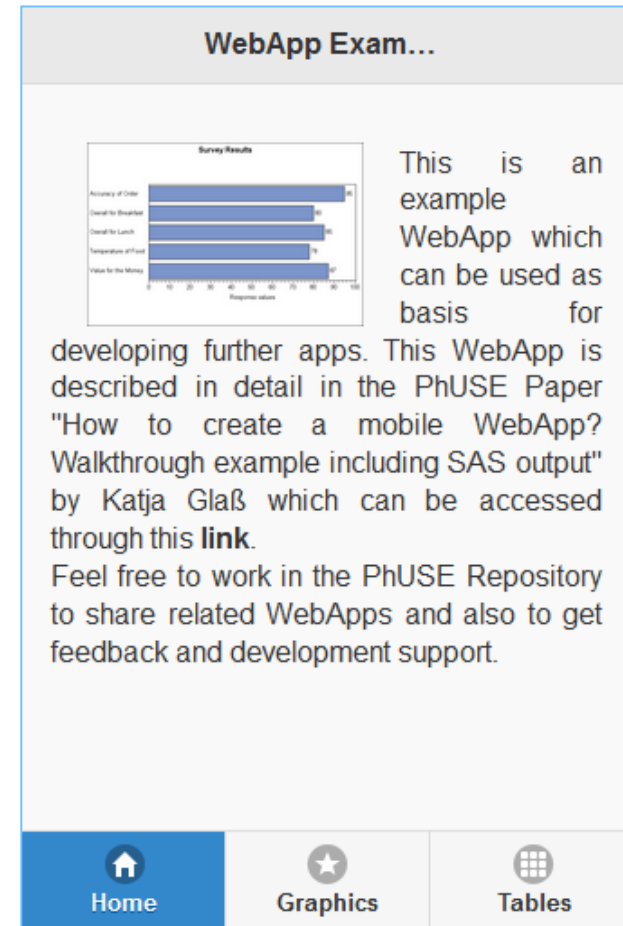
Graphics

Tables

WebApp Creation

Search for details to make it nice:

- Fixed footer at the bottom
- Mark „Home“ navigation
- Floating text around the image



WebApp Creation

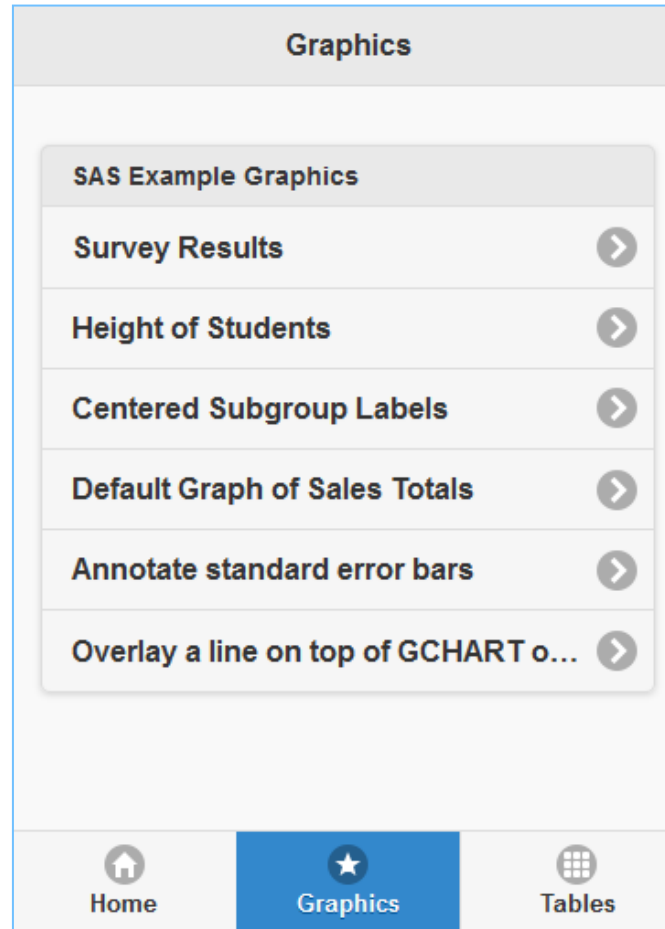
Graphics-List

- Scrolling through JQuery Mobile examples, „List View“ might be a nice option!

```
<div data-role="main" class="ui-content">
  <ul data-role="listview" data-inset="true">
    <li data-role="list-divider">SAS Example Graphics</li>
    <li><a href="#example1">Survey Results</a></li>
    <li><a href="#example2">Height of Students</a></li>
    <li><a href="#example3">Centered Subgroup Labels</a></li>
    <li><a href="#example4">Default Graph of Sales Totals</a></li>
    <li><a href="#example5">Annotate standard error bars</a></li>
    <li><a href="#example6">Overlay a line on top of GCHART ...</a></li>
  </ul>
</div>
```

WebApp Creation

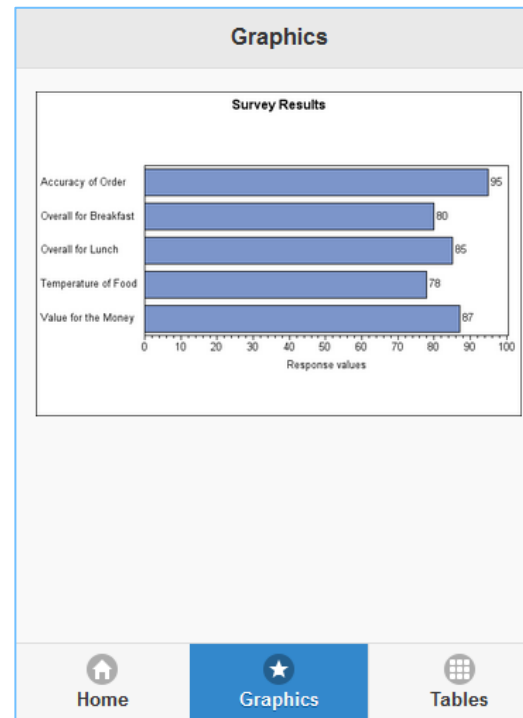
List View



WebApp Creation

Graphic Image

- HTML Tag
- width = 100%



```
<div data-role="main" class="ui-content">
  </img>
</div>
```

WebApp Creation

Table Overview Page

- use List View as for graphics

Table Display

- SAS output format?
 - Listing (text output)
 - PDF
 - RTF
 - HTML

**Sales for the Southeast Sector
for 27JUL15**

Manager	Department	Sales
Smith	Paper	\$50.00
Smith	Meat/Dairy	\$100.00
Smith	Canned	\$120.00
Smith	Produce	\$80.00
Jones	Paper	\$40.00
Jones	Meat/Dairy	\$300.00
Jones	Canned	\$220.00
Jones	Produce	\$70.00
		\$980.00

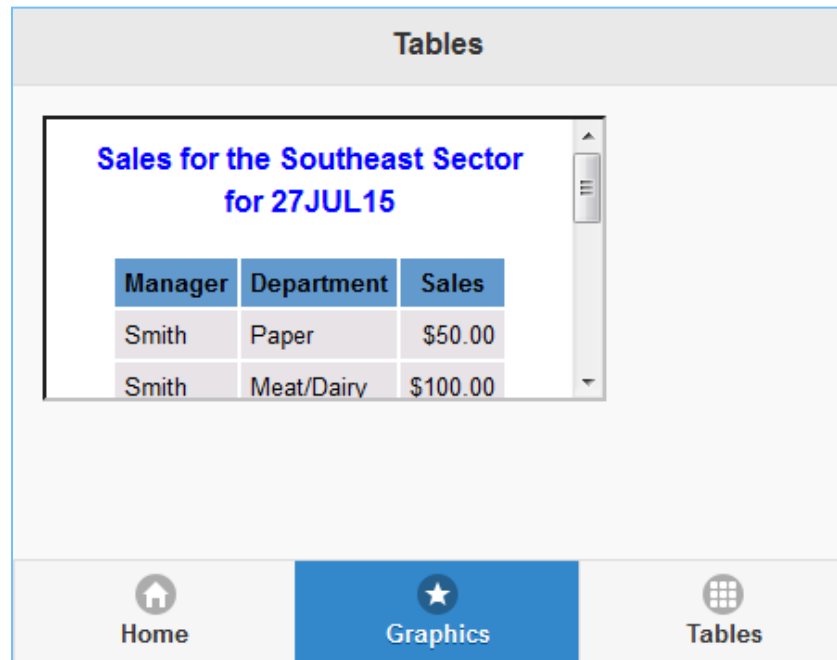
Embedding HTML in HTML?

- <IFRAME>

WebApp Creation

IFRAME

```
<div data-role="main" class="ui-content">  
  <iframe src="../../../sas_output/example1.html"></iframe>  
</div>
```



The screenshot shows a web application interface with a title bar 'Tables'. Inside, there is a window titled 'Sales for the Southeast Sector for 27JUL15' containing a table with three columns: Manager, Department, and Sales. The table has two rows of data. Below the table is a navigation bar with three buttons: Home, Graphics (which is highlighted in blue), and Tables.

Manager	Department	Sales
Smith	Paper	\$50.00
Smith	Meat/Dairy	\$100.00

WebApp Creation

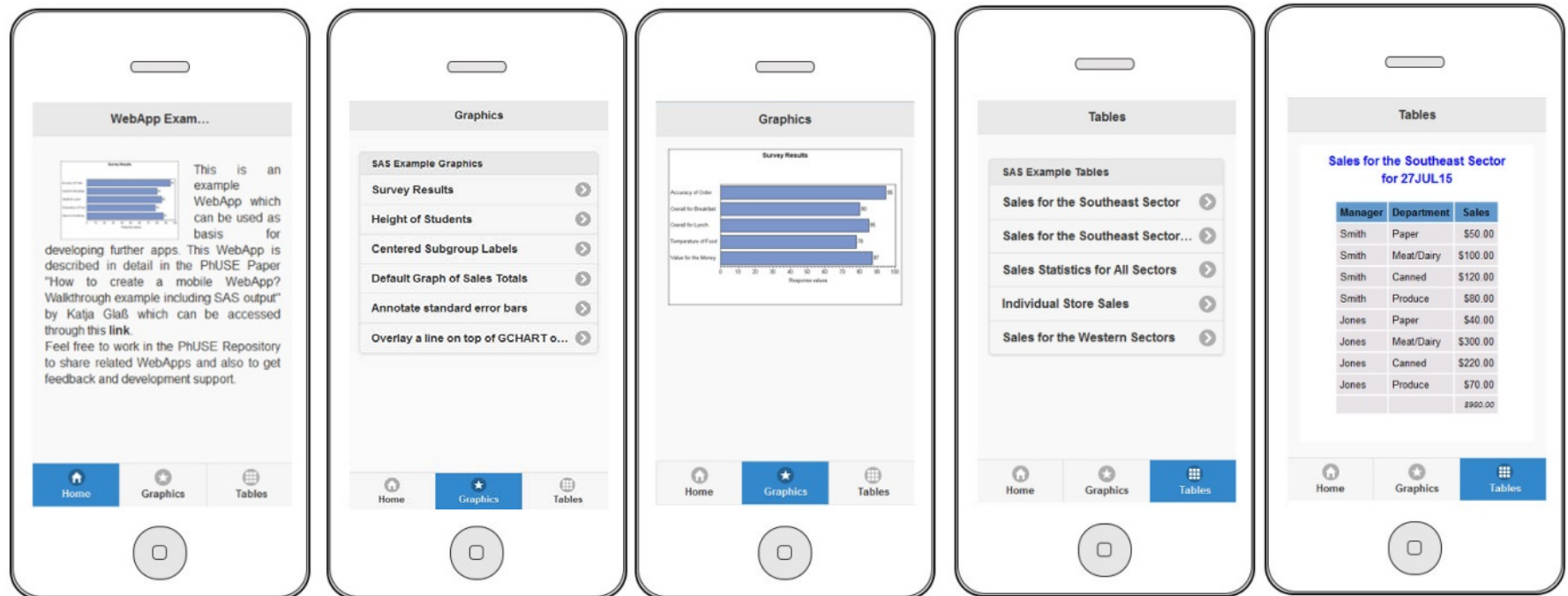
IFRAME

```
<div data-role="main" class="ui-content">
  <iframe id="iframe_1" src="../../sas_output/example1.html"
    width="100%" frameborder="0">
  </iframe>
</div>
<script type="text/javascript">
  $('#t_example1').on("pageshow", function () {
    document.getElementById("iframe_1").height =
      ($(window).height()) - 140;
  });
</script>
```

Tables		
Sales for the Southeast Sector for 27JUL15		
Manager	Department	Sales
Smith	Paper	\$50.00
Smith	Meat/Dairy	\$100.00
Smith	Canned	\$120.00
Smith	Produce	\$80.00
Jones	Paper	\$40.00
Jones	Meat/Dairy	\$300.00
Jones	Canned	\$220.00
Jones	Produce	\$70.00
		\$980.00

WebApp Creation

Wow! Our WebApp is done!!!



Further Options

So what is next?

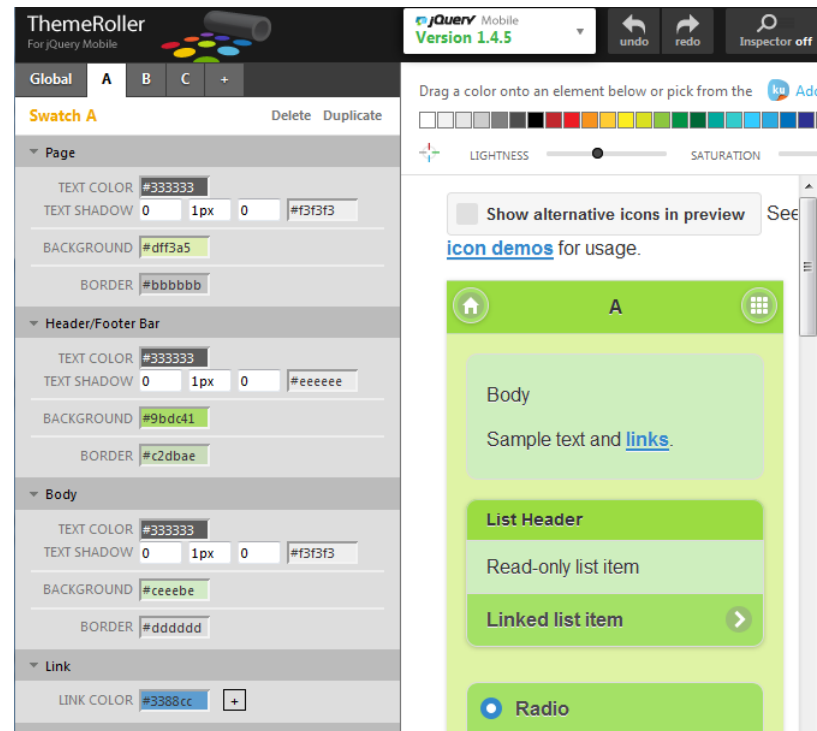
Getting dynamic - one page per graphic required?

- No, use JavaScript!
 - Change the HTML to use variables or
 - Use external configuration file, e.g. JSON (similar to XML)
- Use this also to fill the tables and to create the lists dynamically

Further Options

Give it a style!

- Non-standard style is much better
- CSS can be used to modify the default style
- CSS is quite complex
- Use tools! ThemeRoller!!!



Further Options

Media Queries

- Different Layout for smartphones and tablets

The Pulpit Rock

The Drive

The Walk

The Return

The End

The Walk

The walk to the Pulpit Rock will take you approximately two hours, give or take an hour depending on the weather conditions and your physical shape.

Pulpit rock

What?

The Pulpit Rock is a part of a mountain that looks like a pulpit.

The Pulpit Rock

The Drive

The Walk

The Return

The End

The Walk

The walk to the Pulpit Rock will take you approximately two hours, give or take an hour depending on the weather conditions and your physical shape.

Pulpit rock

What?

The Pulpit Rock is a part of a mountain that looks like a pulpit.

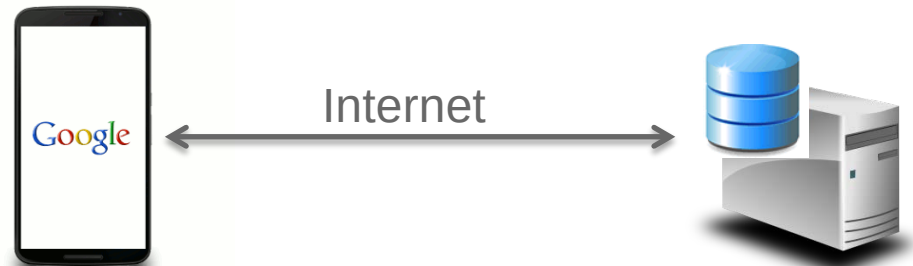
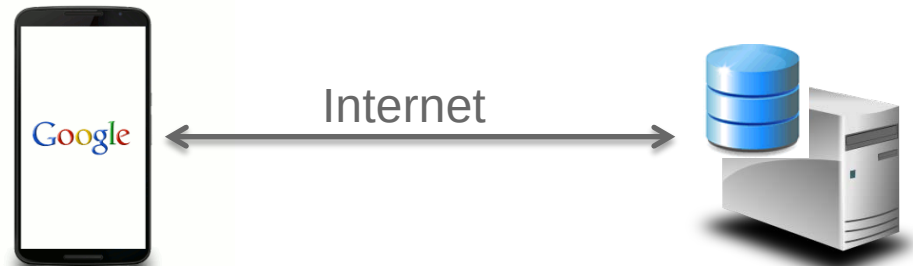
Where?

The Pulpit Rock is in

Further Options

Getting Interaction

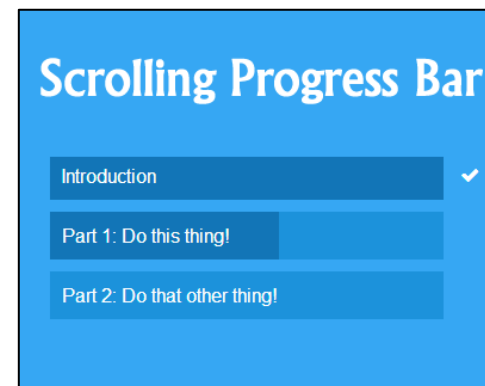
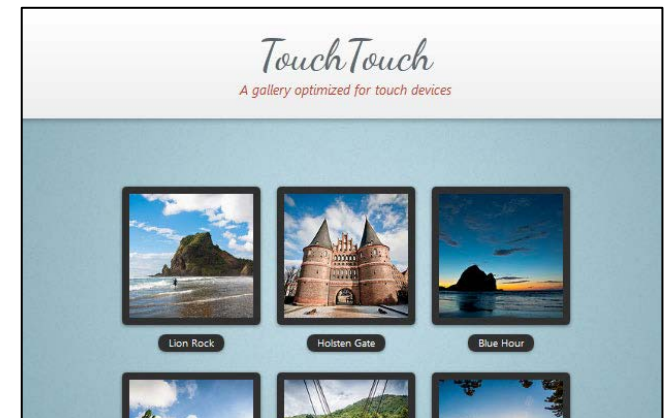
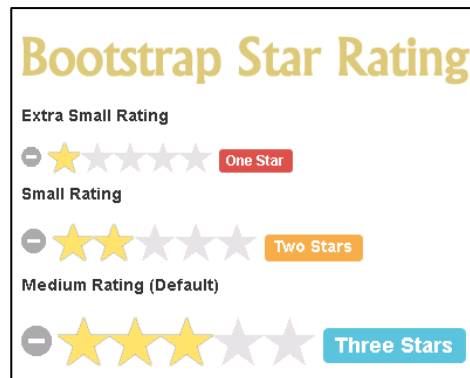
- LocalStorage
- Database connection
- SAS Connect /
SAS Stored Processes



Further Options

Extension

- JQuery Mobile
- Gallery Extension
- Star Rating
- Progress Bars



Summary

Create a WebApp? Easy!

- 1) Investigate what you want
- 2) Search for the right examples
- 3) Adapt example to your needs

That's it!

Unfortunately some installation and process background knowledge is required, especially when the WebApp should be migrated to native apps for stores.



Summary

This presentation provides you an overview of how to get started and what you can search for.

Become a WebApp developer!

Join the PhUSE Script Repository and enhance our app!



Science For A Better Life

Thank you!

PhUSE / 12. October 2015 / Katja Glaß

Bayer HealthCare