World-Wide Developer Conference

Genero Browser Client - Customization
Neil J Martin

JW Marriott Cancùn Spa & Resort
September 26-29, 2017

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Intro

It's all about me

Neil Martin – neilm@4js.com

I work from the UK office.

My Roles are support / training / consultancy / development.

Currently also working on Genero Cloud.

My background is in developing 4gl applications, I have been using 4gl (InformixRDS / Four Js BDL / Genero) for over 25 years!

I do NOT consider myself a Web Developer!

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Overview - About the session

Goals of this session

- ➤ **Run GBC default with default demos**
- ➤ **Setup the GBC dev environment**
- ➤ **Run the GBC dev build with default demos**
- ➤ **Create custom build folder for the custom GBC files**
- ➤ **Setup GeneroStudio to build GBC**
- ➤ **A test Application**
- ➤ **Colors and Themes**
- ➤ **Headers and Footers**
- ➤ **Packaging and deploy GBC**
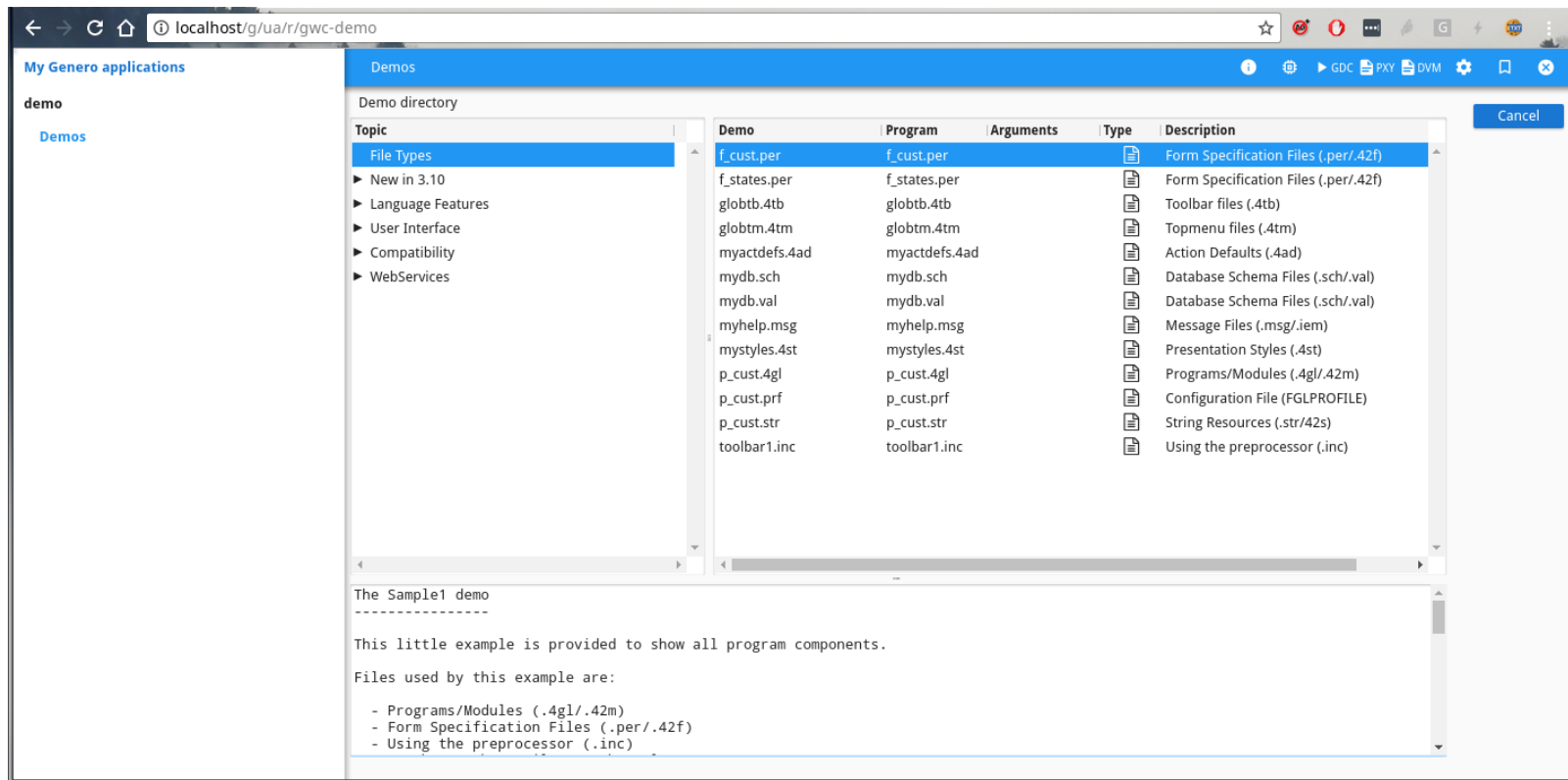- ➤ **More GBC customizations**

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GBC Default Test

Basic sanity test

Before we start, let's make sure the current default GBC is working and we can run the default Genero demos!

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Setup the GBC Dev Environment

Tools of the trade

The GBC uses various standard web development tools, these need to be installed in your development environment so you can build the GBC Runtime from the Project sources.

```
$ sudo yum install git unzip nodejs
$ wget https://nodejs.org/dist/v6.11.3/node-v6.11.3-linux-x64.tar.xz
$ tar xvJf node-v6.11.3-linux-x64.tar.xz
$ export PATH=node-v6.11.3-linux-x64/bin:$PATH
$ sudo npm install -g grunt-cli
```

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Setup the GBC Dev Environment

Our first build

Once the require packages are installed you need to set up the GBC project folder

```
$ unzip fjs-gbc-1.00.39-build201709041139-
project.zip
$ cd gbc-1.00.39/
$ npm install
$ grunt
```

When complete you should have the 'default' custom GBC built.

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Setup the GBC Dev Environment

Configure for running

Before you can test the 'default' custom GBC you need to make sure the GAS can find it.
There are a couple of ways to tell the GAS how to find your custom GBC.
One method is a symbolic link in $FGLDIR/web_utilities/gbc

```
$ ln -s $HOME/gbc-
1.00.39/dist/customization/default
$FGLDIR/web_utilities/gbc/mydef
```

Another method is to modify the as.xcf for the "res.path.gbc.user".

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GBC 'Default' Custom Run

The results of all that effort

Test the 'default' custom GBC:
http://<server>/gas/ua/r/gwc-demo?gbc=mydef)

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First Customization

First a new build

I recommend testing your application with the default Custom GBC build before doing any customizations.

Next, setup your own sources folder like this:
- Create a new folder in your sources location for your custom GBC files. (so they are part of your Source Code Control)
- Create a link in the GBC customization build folder to this 'new folder'
- Change the custom.json to build that custom folder
- Make a small change to the theme file and do your first build
- Create a link in $FGLDIR/web_utilities/gbc to this new custom build
- Run the new build in your browser.

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First Customization

Do the work

```
$ cd $HOME/gbc-1.00.39/
$ cp -r customization/default $MY_SRC_DIR/mygbc
$ ln -s $MY_SRC_DIR/mygbc/ customization/mygbc
$ vi custom.json
     change:      "customization": "customization/default"
     to this:     "customization": "customization/mygbc"
$ grunt        ( make sure we can build our new folder )
$ ln -s $HOME/gbc-1.00.39/dist/customization/mygbc
   $FGLDIR/web_utilities/gbc/mygbc
$ grunt dev    ( This will automatically build after any changes )

-> new terminal
$ cd $MY_SRC_DIR/mygbc
$ vi theme.scss.json
     do some changes & save them
```

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The 'default' Customization

Anatomy of customization

The 'default' customization folder contains these sub-folders:
- **js – JavaScript and template html files.**
- **locales – Localization files for text messages.**
- **resources – Images.**
- **sass – scss files. (syntactically awesome stylesheets!)**
- **and the 'theme.scss.json' file.**

I suggest removing most of the demo files from js and sass folders to leave only the files relating to the header.

```
js/MyHeaderBarWidget.js
js/MyHeaderBarWidget.tpl.html
js/MyMainContainerWidget.js
js/MyMainContainerWidget.tpl.html
sass/customization.scss
sass/MyMainContainerWidget.scss
```

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GBC 'Default' Custom Run

At last, our own colours!

Test the custom GBC:
http://<server>/gas/ua/r/gwc-demo?gbc=mygbc)

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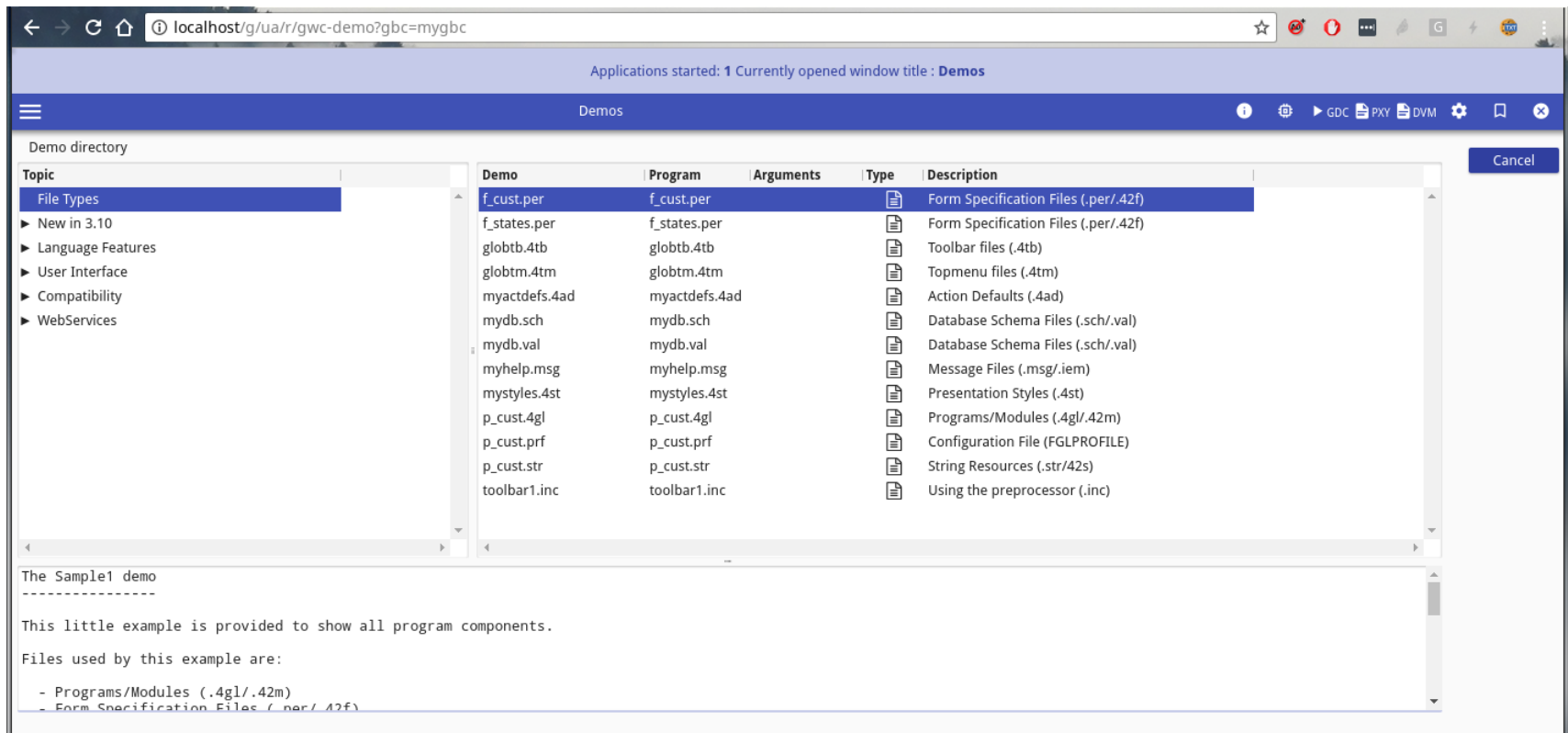
Genero Studio

Custom Builds rules

Genero Studio can also build your custom GBC.

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Genero Studio

Custom Builds rules

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Genero Studio

Custom Package rules

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Custom Package rules

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Test Application

A testing asset

A good idea is to write a small stand-alone test program to run using Custom GBC to see all your changes.

The 'Test' program should use all the GUI elements you use in a similar way to your main application, but with the advantage that you don't have to navigate through various menus and sub programs to get to see any specific UI features you may use.

Another useful feature would be if the program can open and show any of your 42f files.

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Test Application

A testing asset

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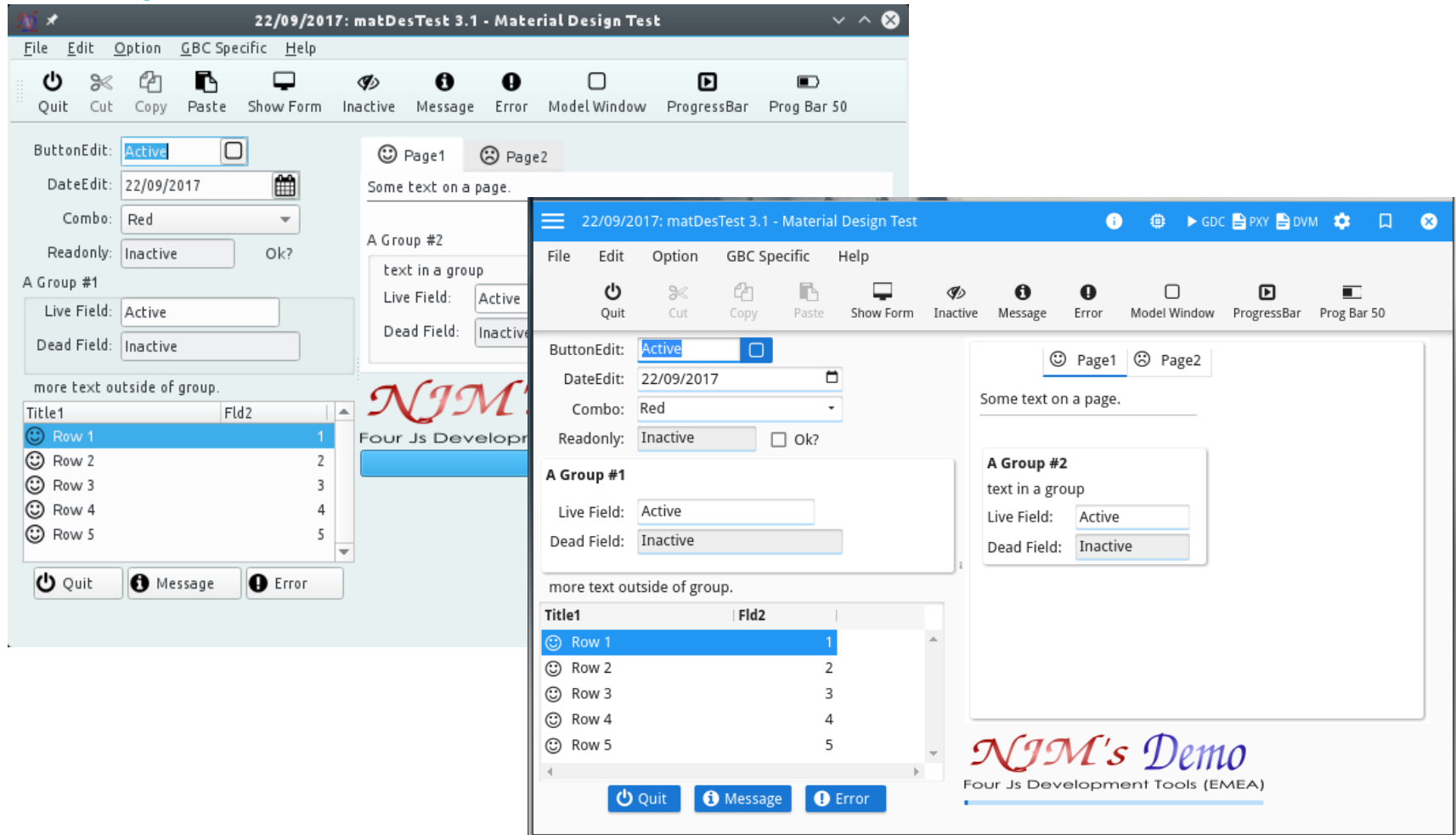
Colors (Colours)

All the colours of the rainbow

Coloring the GBC should be done by changing the theme json file. I'd recommend removing most color changes from the .4st file so the GBC can use the theme.
NOTE: The .4st colors will override the GBC theme colors.

The theme file allows us to use 'material design' color names. See:
https://material.io/guidelines/style/color.html#color-color-palette

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Colors (Colours)

All the colours of the rainbow

The theme file is a JSON file that allows you to use 'Material Design' color names. After changing this file you must rebuild the GBC using the 'grunt' command.

```
"gbc-header-color"                      : "$mt-indigo-200",
"gbc-primary-medium-color"              : "$mt-indigo-900",

"gbc-primary-background-color"          : "$mt-indigo-100",
"gbc-primary-color"                     : "$mt-indigo-600",
"gbc-primary-light-color"               : "$mt-indigo-900",

"gbc-secondary-background-color"        : "$mt-indigo-50",
"gbc-secondary-text-color"              : "$mt-white",
"gbc-secondary-color"                   : "$mt-white",

"gbc-field-disabled-background-color"   : "$mt-grey-100",
"gbc-field-disabled-background"         : "rgba(0,0,0,0.44)",
"gbc-field-background-color"            : "$mt-white",
"gbc-disabled-color"                    : "$mt-grey-300",

"gbc-separator-color"                   : "$mt-white",
"gbc-message-color"                     : "$mt-grey-800",
"gbc-error-color"                       : "$mt-red-800",
```

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Colors (Colours)

All the colours of the rainbow

Style – Color

Deep Purple		Indigo		Blue	
500	#673AB7	500	#3F51B5	500	#2196F3
50	#EDE7F6	50	#E8EAF6	50	#E3F2FD
100	#D1C4E9	100	#C5CAE9	100	#BBDEFB
200	#B39DDB	200	#9FA8DA	200	#90CAF9
300	#9575CD	300	#7986CB	300	#64B5F6
400	#7E57C2	400	#5C6BC0	400	#42A5F5
500	#673AB7	500	#3F51B5	500	#2196F3
600	#5E35B1	600	#3949AB	600	#1E88E5
700	#512DA8	700	#303F9F	700	#1976D2
800	#4527A0	800	#283593	800	#1565C0
900	#311B92	900	#1A237E	900	#0D47A1

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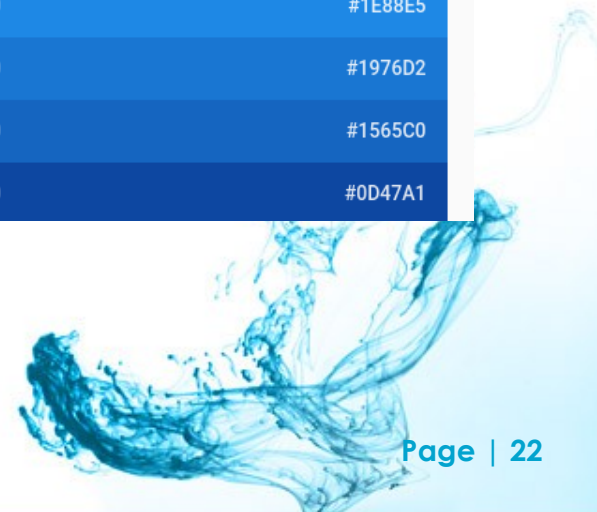
More Than Colors

All the colours of the rainbow and more

**You can override the colors and styles for any element in the GBC by editing or creating a scss file for that element.
For example, the default MyMainContainerWidget.scss
This is controlling the style of the 'header' object.**

```
> header {
    padding: 1em;
    background-color: $gbc-primary-light-color;
    color: $gbc-primary-color;
    text-align: center;
  }
```

➢ **NOTE: It's using the theme color name of** `$gbc-primary-light-color`

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Working with SaSS

Getting Sassy

When you create your .scss files you must add them to the customization.scss file so that included in the build.

```
@import "MyMainContainerWidget";
@import "MyHeaderBarWidget";
@import "main";
```

Here I've added 'MyHeaderBarWidget' and 'main' to the customization.scss file.

➢ NOTE: Any changes to these files require you to rebuild the GBC using the 'grunt' command.

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Headers

Getting a head of ourselves

One of the most common customizations is to add a header and footer that includes your company / application logo.

The GBC Manual contains instructions on doing this and the example 'default' custom theme includes a basic header and footer.

To add a header we would typically use 3 files:
- A .js file for the code required to control the header content.
- A .tpl.html for the basic layout of the heading.
- A .scss for the styles for our heading.

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Headers

Heading Layout

My Code adds the Application Text into the header as well as the form title: `js/MyHeadingBarWidget.tpl.html`:

```html
<div>
  <table width="100%">
    <tr>
      <td id="logocell" width="20%" align="left">
        <img src="./resources/img/logo.png"/>
      </td>
      <td width="60%">
        <h1 class="MyHeaderBarWidget-banner"></h1>
        <b id="MyWinTitle" class="MyHeaderBarWidget-title"></b>
      </td>
      <td width="20%" align="right">
        <b id="dyntext">none</b>
        <span style="display: none">Apps: <b class="MyHeaderBarWidget-counter"></b></span>
      </td>
    </tr>
  </table>
</div>
```
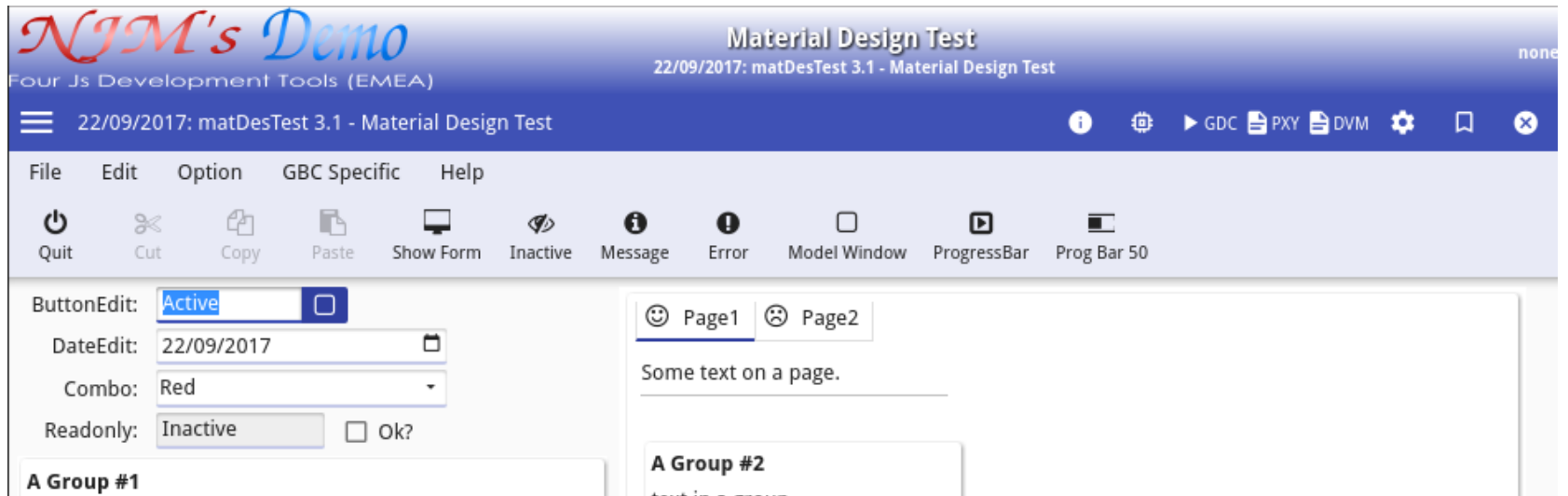
'MyHeaderBarWidget-banner' will be the Application Text
'MyHeaderBarWidget-title' will be the Window Text

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Headers

Getting a head of ourselves

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Headers

`js/MyHeadingBarWidget.js`

```javascript
cls.MyHeaderBarWidget = context.oo.Class(cls.WidgetBase, function($super) {
    return {
      __name: "MyHeaderBarWidget",
      _model: null,
      _appsCount: null,

      constructor: function() {
        $super.constructor.call(this);
        this._appsCount = 0;
        this._model = new cls.ModelHelper(this);
        this._model.addNewApplicationListener(this.onNewApplication.bind(this));
        this._model.addCloseApplicationListener(this.onCloseApplication.bind(this));
        this._model.addCurrentWindowChangeListener(this.onCurrentWindowChanged.bind(this));
        elb = this.getElement().querySelector(".MyHeaderBarWidget-banner");
      },

      onNewApplication: function(application) {

      onCloseApplication: function(application) {

      onCurrentWindowChanged: function(windowNode) {
        var elt = this.getElement().querySelector(".MyHeaderBarWidget-title");
        // Set the banner text to the value set by ui.interface.setText()
        elb.textContent = windowNode.getAncestor("UserInterface").attribute('text');
        // Set the header sub title to the window text.
        if (windowNode) {
          elt.textContent = windowNode.attribute('text');
        } else {
          elt.textContent = "<NONE>";
        }
      }
    }
```

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Headers

Heading Styles

sass/MyHeadingBarWidget.scss

```scss
.gbc_MyHeaderBarWidget {
  background: linear-gradient($gbc-field-background-color, $gbc-primary-medium-color);
  color: $gbc-secondary-text-color;

  h1 {
    text-align: center;
    font-size: 1.2em;
    margin: 0px 5px 0px 0px;
    text-shadow: 1px 1px 2px black;
  }

  b {
    font-size: 0.8em;
  }
}

.MyHeaderBarWidget-title {
  text-align: center;
}

.gbc_MyMainContainerWidget > header {
  text-align: center;
}
```
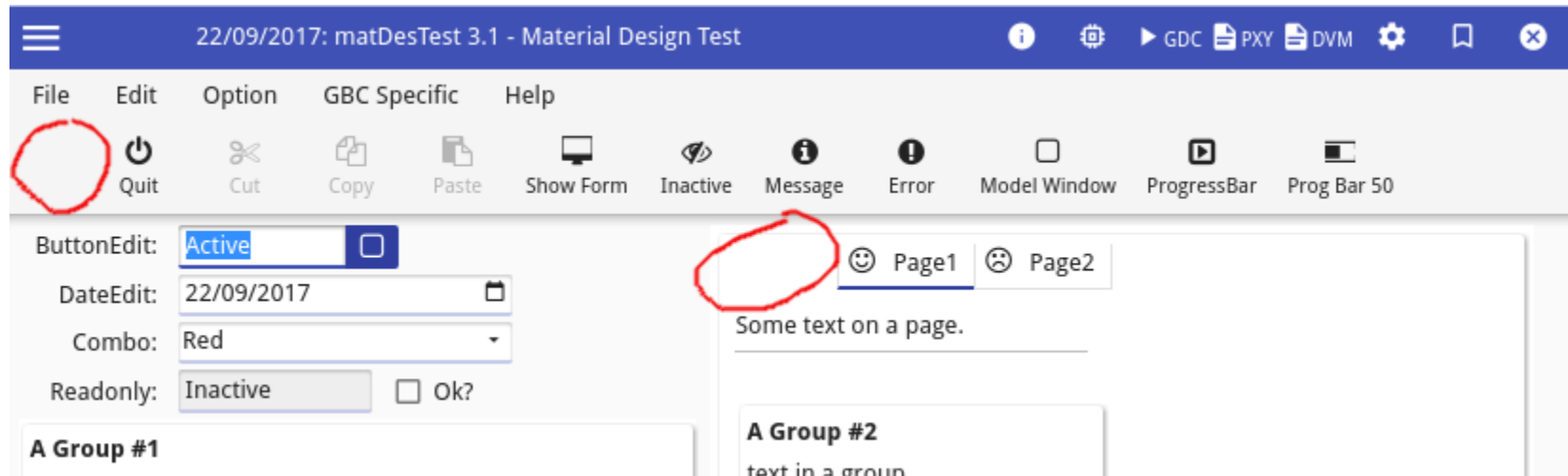
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More Customizations

Tidy upl

Here I want to remove some unwanted space that's left for next/previous arrows.

I simple add this style to my main.scss file

```
.vanished {
    display: none;
}
```

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Customization – Group Title
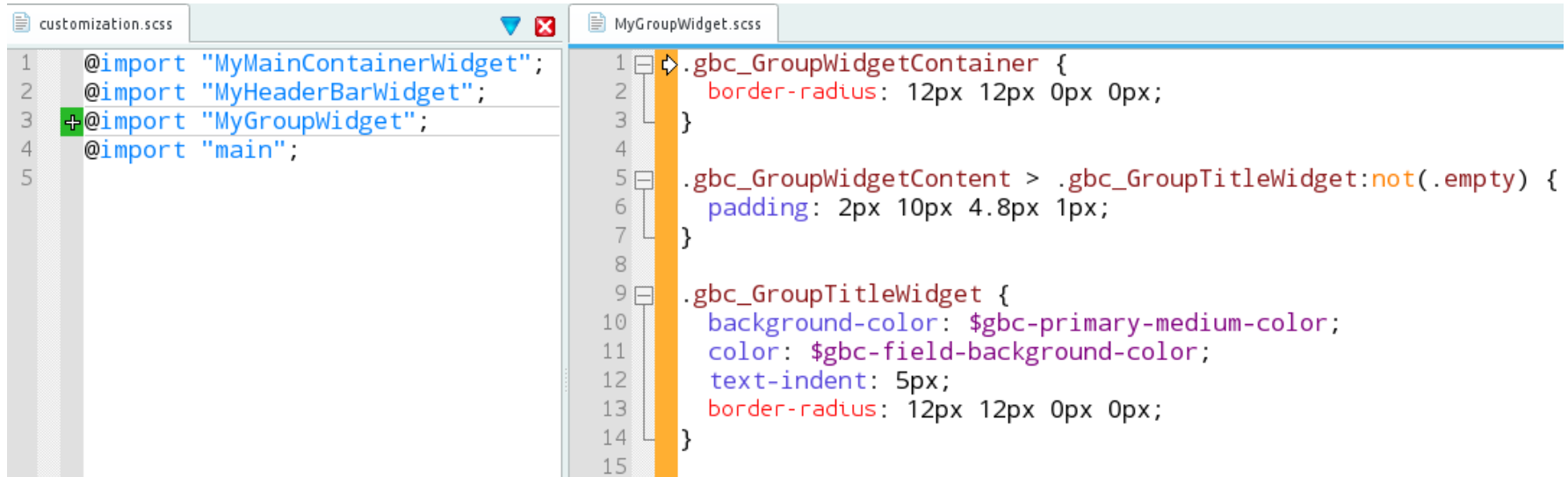
Group Titles

First we need to identify the style class names that have been used by the GBC for the GroupBox object. You use the 'inspect element' feature in Chrome.

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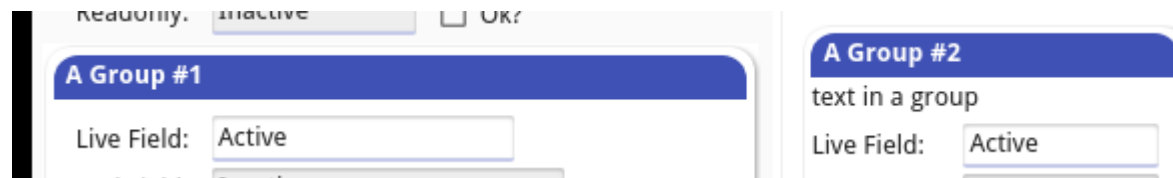JW Marriott Cancùn Resort & Spa
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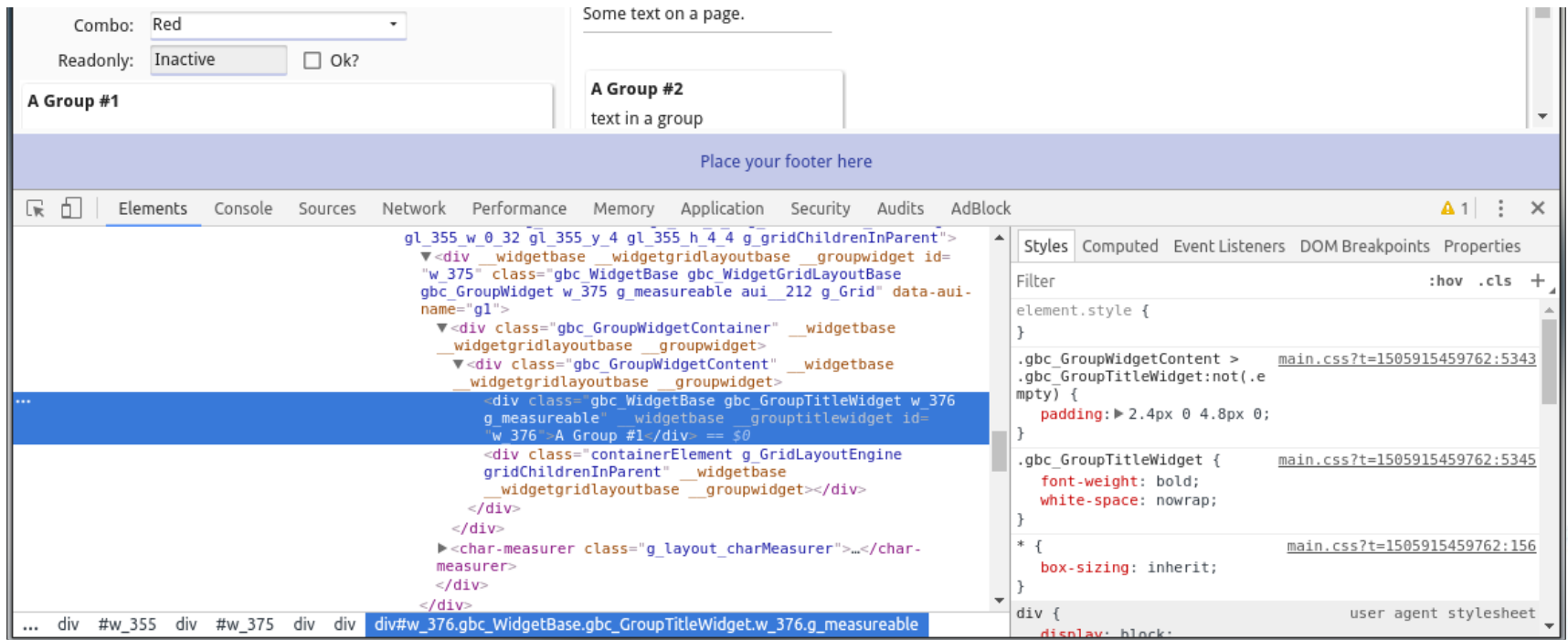
Customization – Group Title

Group Titles

To change group titles we create a new .scss file and add it to the customization.scss file. See W3Schools

```scss
customization.scss

1  @import "MyMainContainerWidget";
2  @import "MyHeaderBarWidget";
3  @import "MyGroupWidget";
4  @import "main";
5
```

```scss
MyGroupWidget.scss

1  .gbc_GroupWidgetContainer {
2      border-radius: 12px 12px 0px 0px;
3  }
4
5  .gbc_GroupWidgetContent > .gbc_GroupTitleWidget:not(.empty) {
6      padding: 2px 10px 4.8px 1px;
7  }
8
9  .gbc_GroupTitleWidget {
10     background-color: $gbc-primary-medium-color;
11     color: $gbc-field-background-color;
12     text-indent: 5px;
13     border-radius: 12px 12px 0px 0px;
14 }
15
```

Then we can 'build' the GBC and test our changes.

Readonly: Inactive ☐ OK?

A Group #1

Live Field: Active

A Group #2

text in a group

Live Field: Active

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Customizations

Our goal

Before / After our changes

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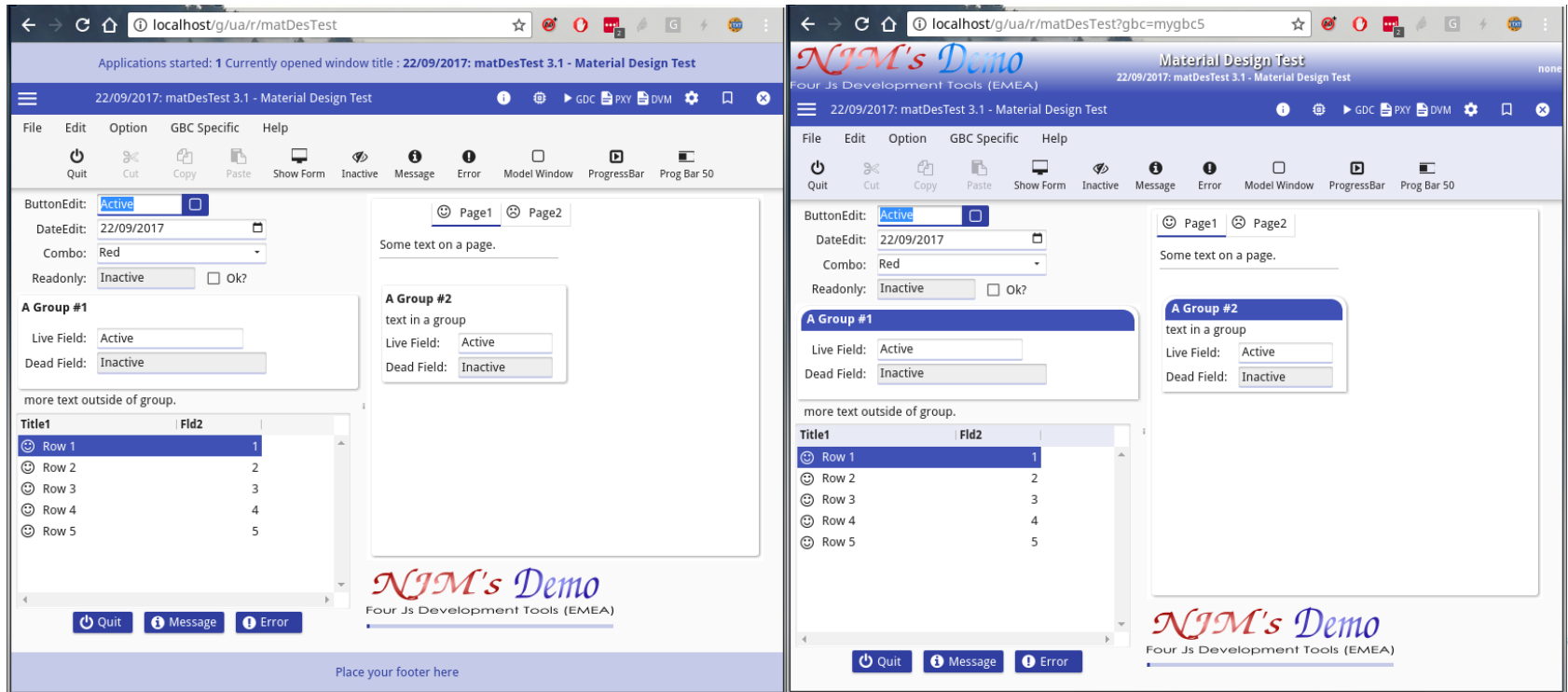
More Customizations

Multiple Themes: Blues

With basic customizations you can achieve a variety of looks.

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More Customizations

Multiple Themes: Elite

Only the 'theme' file is different from the previous slide.
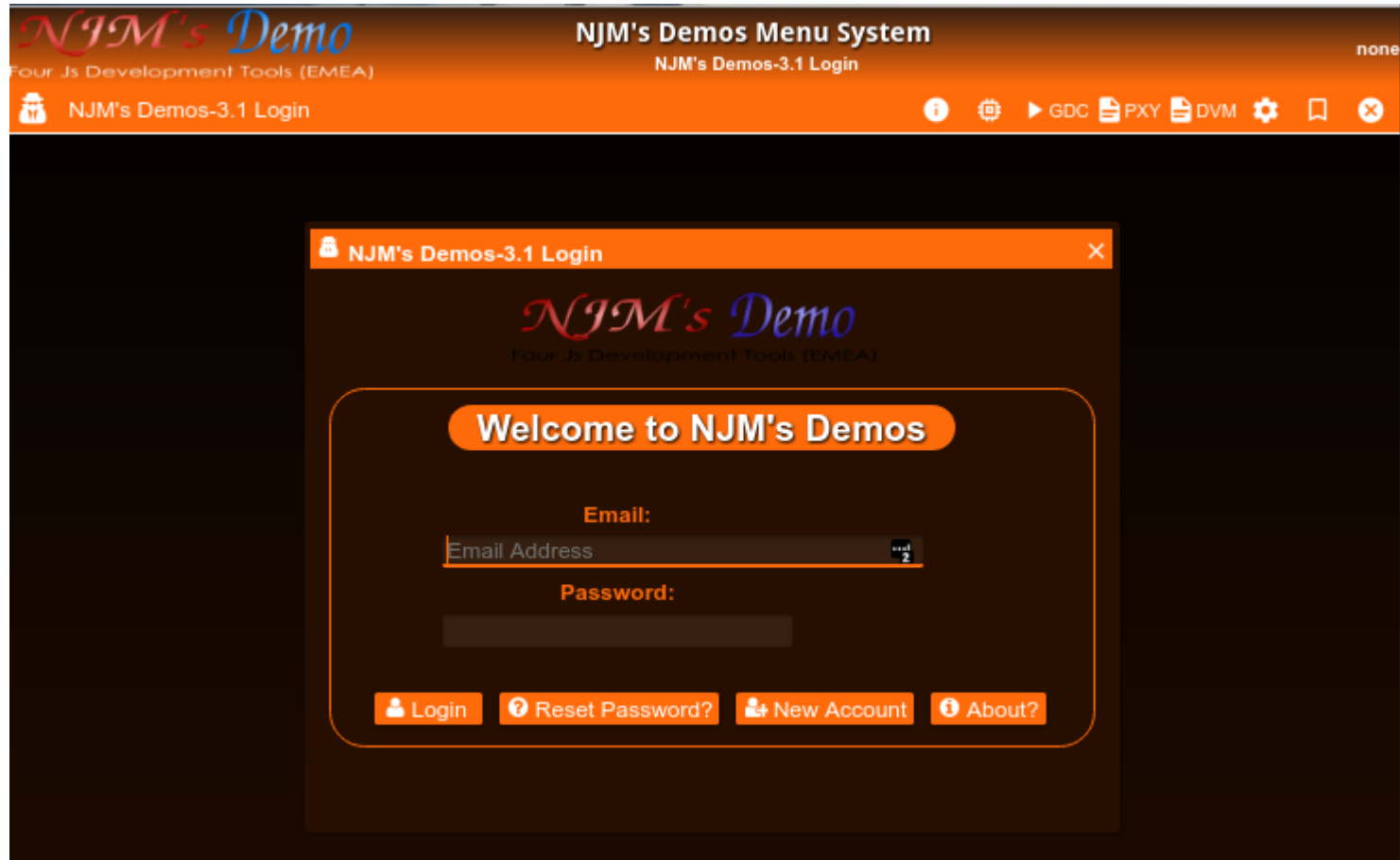
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More Customizations

Multiple Themes: Simply Purple

A very simple plain version.

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More Advanced Customizations

Custom Toolbar

This screenshot shows a custom 'ToolBar' that included a some fields from the form.

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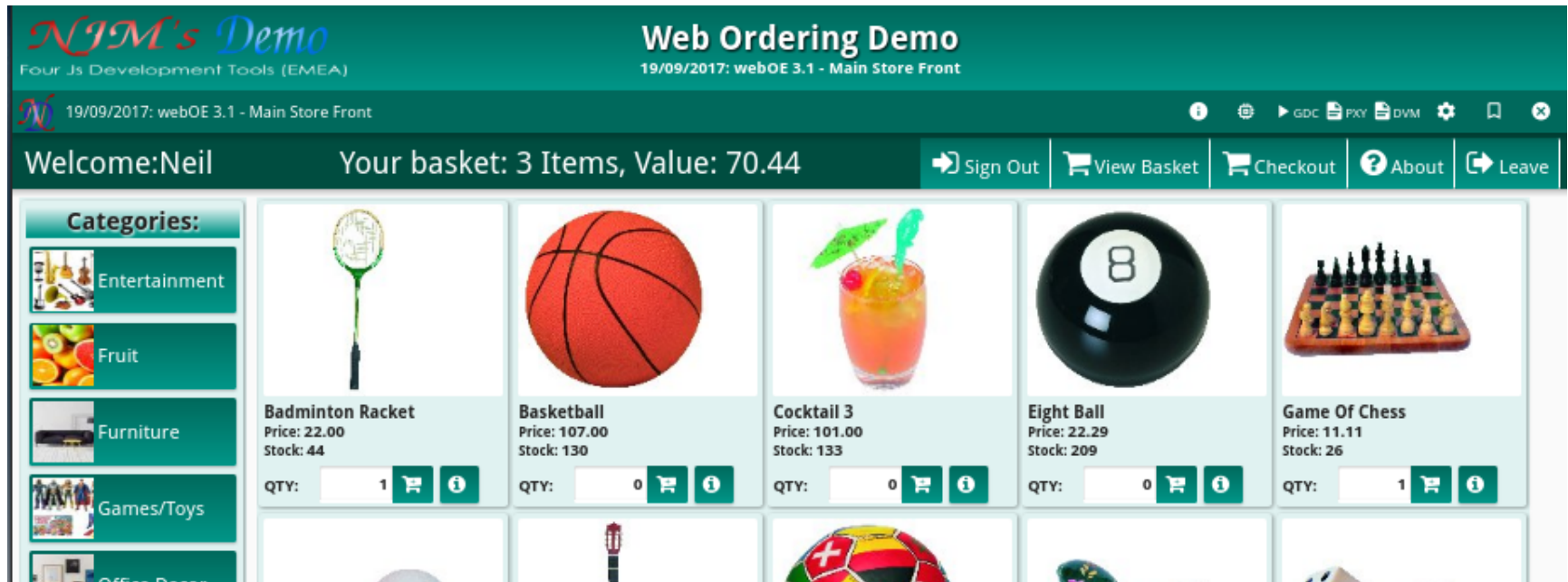
More Advanced Customizations

Paging products

There are couple ways to do a responsive design for listing 'items', this example is using JS and a dynamc form layout.

More Advanced Customizations

Paging products

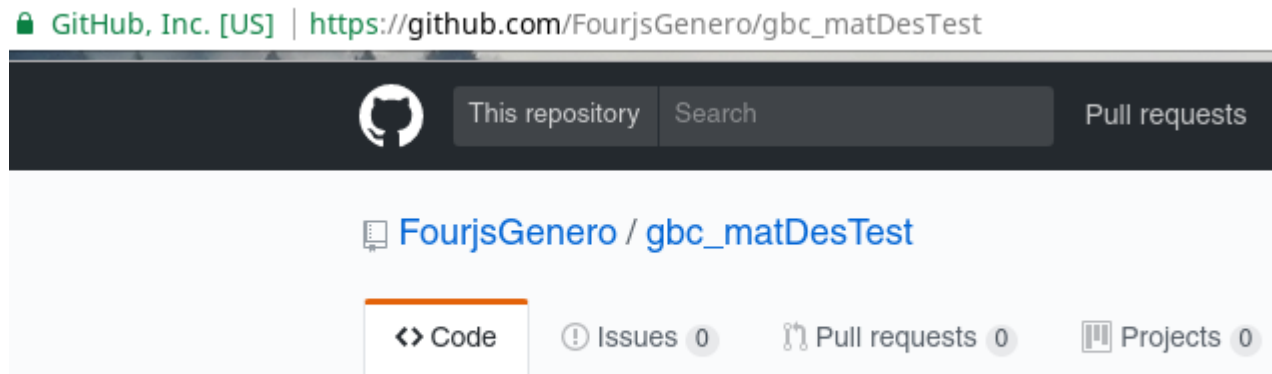## This version is using a 'simple' ScrollGrid
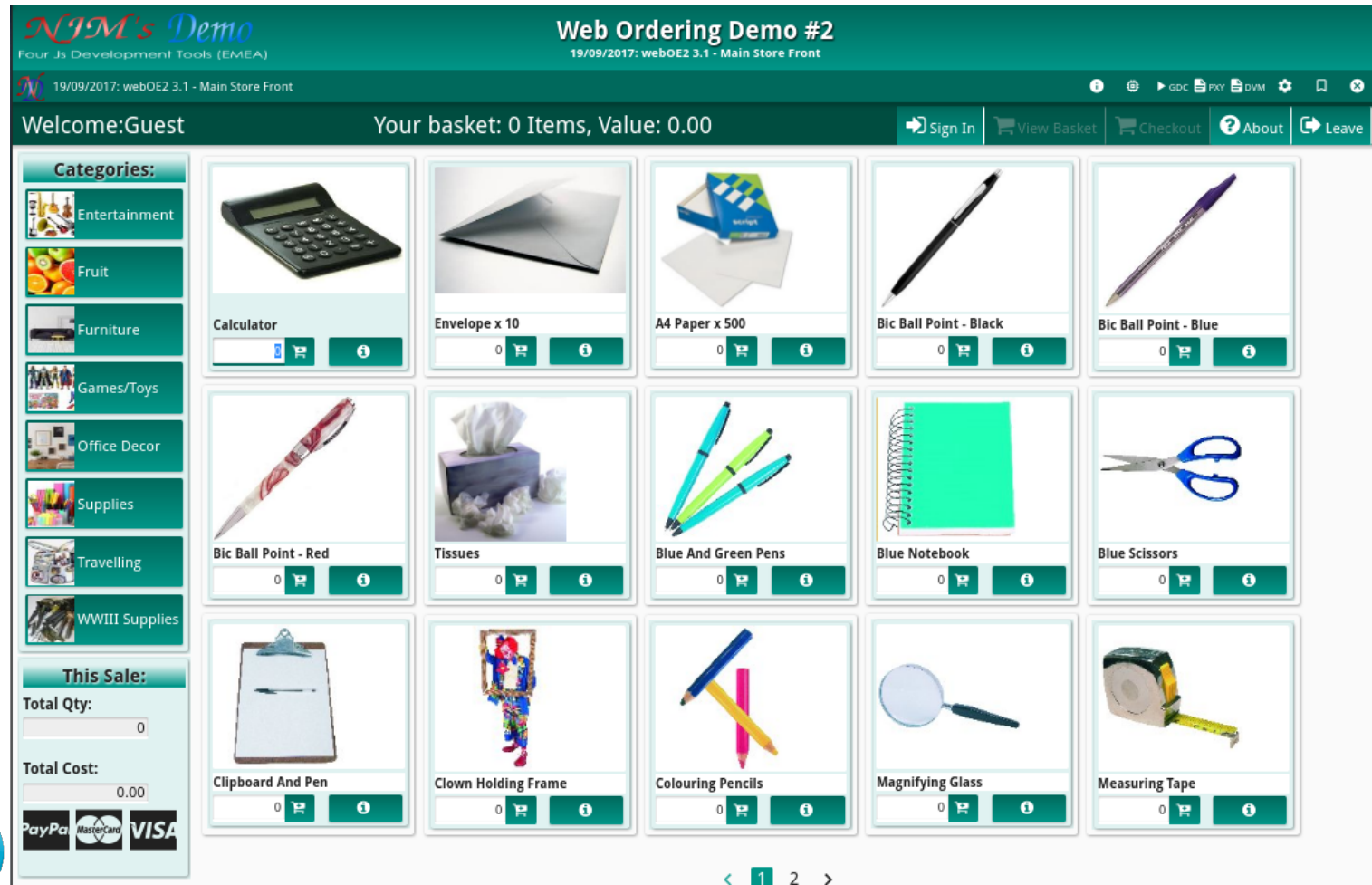
Try it for yourself

My test project

The matDesTest Genero program, Studio project and my example customized GBC are available from the Four Js github page.
https://github.com/FourjsGenero/gbc_matDesTest

🔒 GitHub, Inc. [US] │ https://github.com/FourjsGenero/gbc_matDesTest

This repository | Search | Pull requests | Is

📖 FourjsGenero / gbc_matDesTest

<> Code   ⓘ Issues 0   ⑂ Pull requests 0   ▥ Projects 0

Simple Genero Application to test custom GBC builds

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