

World-Wide Developer Conference

Genero Browser Client - Customization

Neil J Martin

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



FOUR Js
The Power of Simplicity



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!



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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**



FOUR Js
The Power of Simplicity

WWDC 17

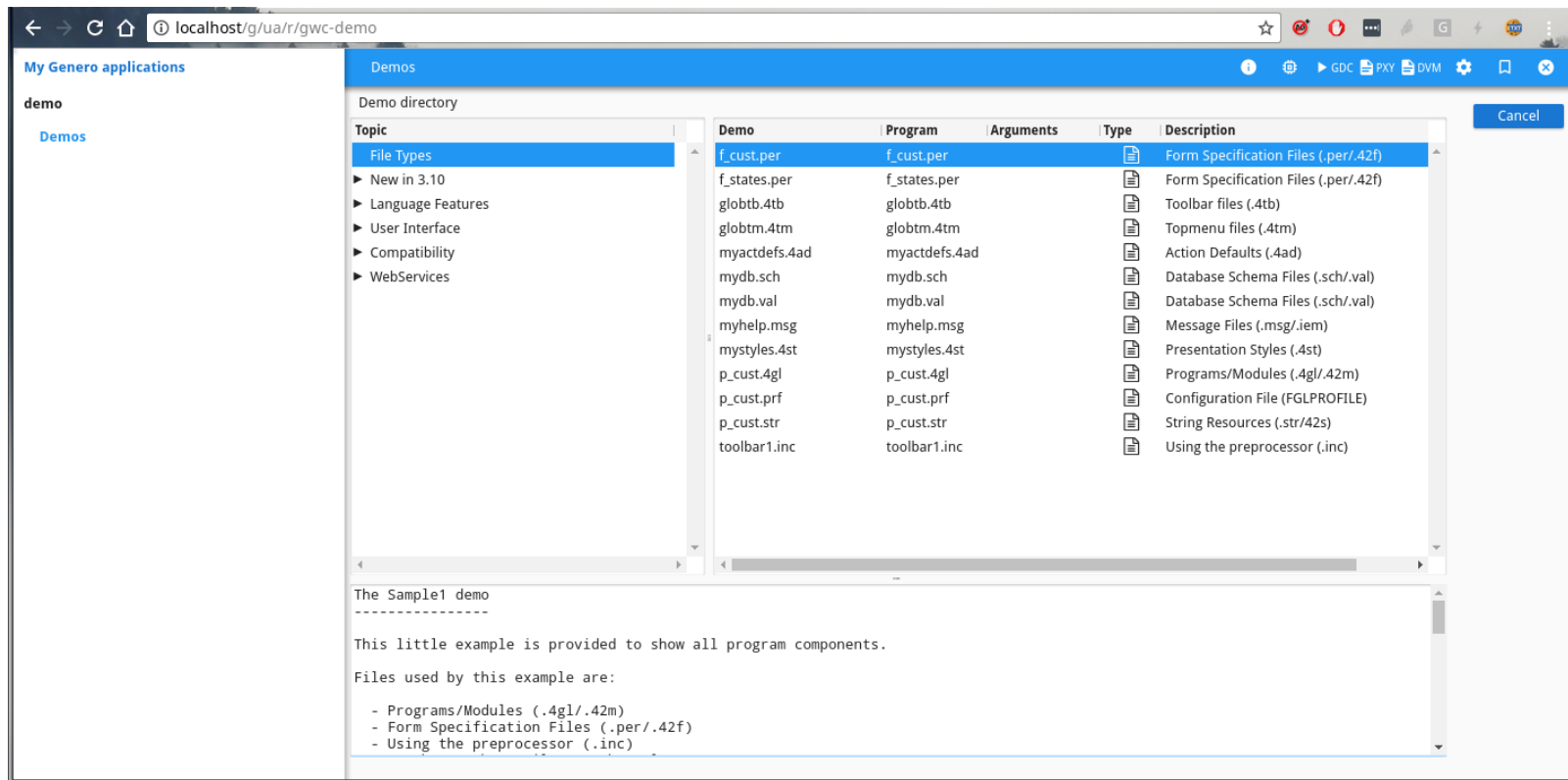
JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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!



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
```



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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.



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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".



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



GBC 'Default' Custom Run

The results of all that effort

Test the 'default' custom GBC:

`http://<server>/gas/ua/r/gwc-demo?gbc=mydef`

The screenshot shows a web browser window with the address bar displaying `localhost/g/ua/r/gwc-demo?gbc=mydef`. The application interface has a blue header bar with the text "Applications started: 1 Currently opened window title : Demos". On the left, a sidebar titled "My Genero applications" shows a tree view with "demo" expanded and "Demos" selected. The main content area is titled "Demos" and contains a "Demo directory" section with a table of files. Below the table is a section titled "The Sample1 demo" with a description and a list of files used by the example.

Topic	Demo	Program	Arguments	Type	Description
File Types	f_cust.per	f_cust.per			Form Specification Files (.per/.42f)
► New in 3.10	f_states.per	f_states.per			Form Specification Files (.per/.42f)
► Language Features	globtb.4tb	globtb.4tb			Toolbar files (.4tb)
► User Interface	globtm.4tm	globtm.4tm			Topmenu files (.4tm)
► Compatibility	myactdefs.4ad	myactdefs.4ad			Action Defaults (.4ad)
► WebServices	mydb.sch	mydb.sch			Database Schema Files (.sch/.val)
	mydb.val	mydb.val			Database Schema Files (.sch/.val)
	myhelp.msg	myhelp.msg			Message Files (.msg/.iem)
	mystyles.4st	mystyles.4st			Presentation Styles (.4st)
	p_cust.4gl	p_cust.4gl			Programs/Modules (.4gl/.42m)
	p_cust.prf	p_cust.prf			Configuration File (FGLPROFILE)
	p_cust.str	p_cust.str			String Resources (.str/.42s)
	toolbar1.inc	toolbar1.inc			Using the preprocessor (.inc)

The Sample1 demo

This little example is provided to show all program components.
Files used by this example are:
- Programs/Modules (.4gl/.42m)
- Form Specification Files (.per/.42f)

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 \$FGLEDIR/web_utilities/gbc to this new custom build**
- **Run the new build in your browser.**



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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
```



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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
```

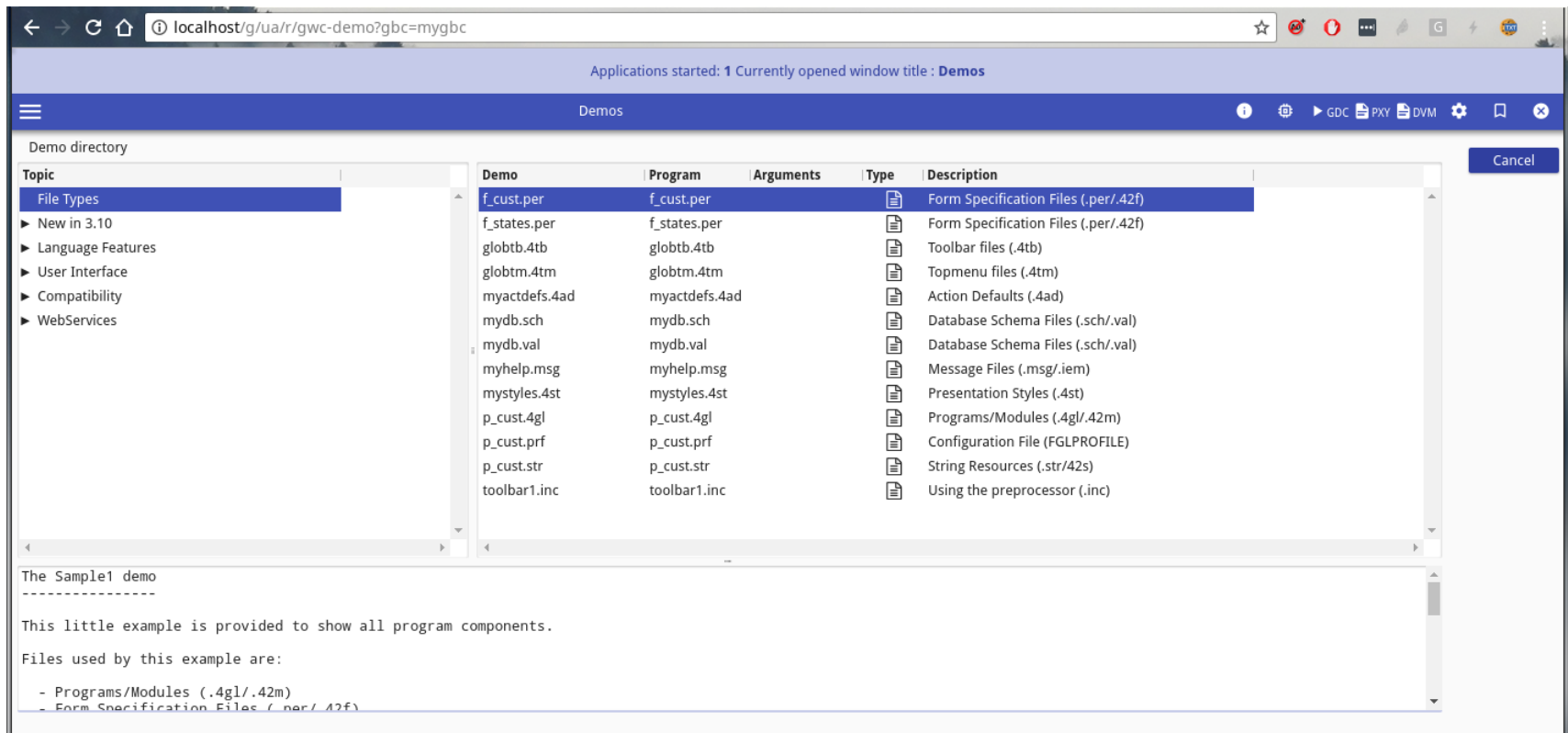


GBC 'Default' Custom Run

At last, our own colours!

Test the custom GBC:

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



Genero Studio

Custom Builds rules

Genero Studio can also build your custom GBC.

Genero configuration management for local host

Configuration Name | Status

3.10.07 Desktop	✓
3.10.07 Web	✓
3.10.07 Web_NJM	✓
3.10.07 Web_MYGBC	✓
3.10.07 Web_Apache	✓
3.10.07 Android	✓
3.10.07 iOS Dev Client	✓
3.10.06 Desktop	✓
3.10.06 Web	✓
3.10.06 Android	✓
3.10.06 iOS Dev Client	✓
3.00 Desktop	✓
3.00 Web	✓
3.00.09 Web (deprecated)	✓
3.00.09 Android (ARM)	✓
3.00.09 Android (x86)	✓
3.00.09 iOS Dev Client	✓
1.20.05 GMA_ARM	✓
1.20.06 GMA_ARM	✓
1.20.06 GMA_ARM_DEBUG	✓
3.00.10 Android (ARM) - 1....	✓
2.50 Desktop	✓

Compiler / Runtime

Genero Installation : FGL 3.10.07 Show License

Environment Sets

Report Writer 2.50
DBDATE
NODEBUG
GMA-1.30.03
GMA-1.30.02
GMA-1.20.15
GMA-1.30.04
GMA-1.30.05
GMA-1.30.06
✓ GBC_Project

Environment Variables

Type	Name	Value
Directory	GBCPROJDIR	/opt/fourjs/gbc-current-project

Display

☐ None

☐ Use Text Mode

☐ Use Display Client : <Choose a Display Client>

☒ Use Application Server : GAS 3.10.07_MYGBC



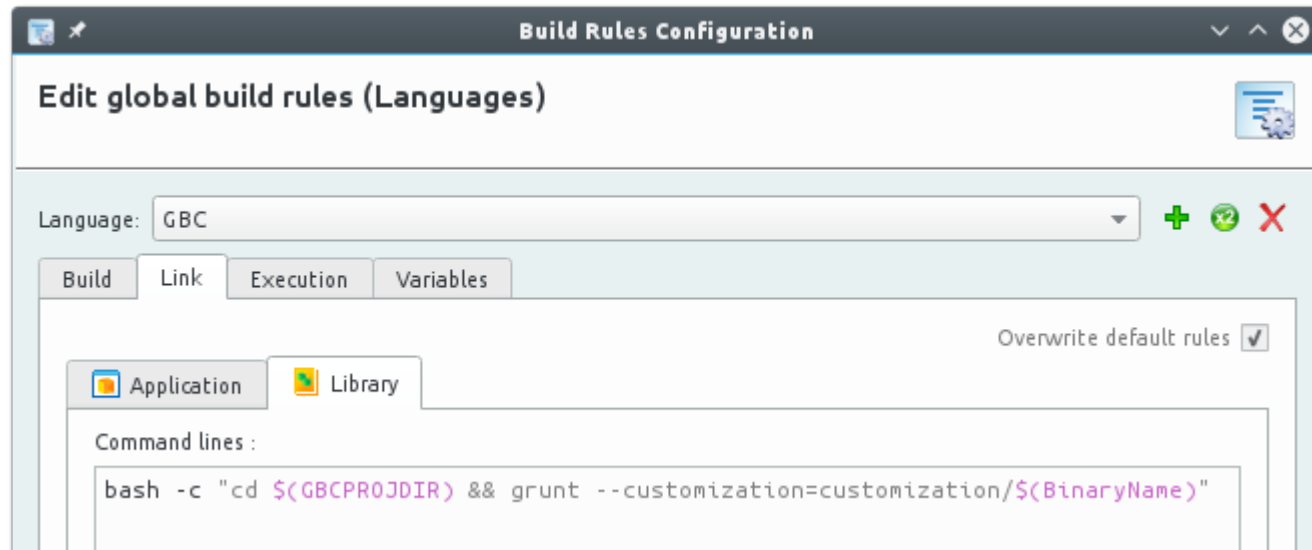
FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017

Genero Studio

Custom Builds rules



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



Genero Studio

The screenshot displays the Genero Studio 3.10.06 interface for a project named 'gbc-training.4pw'. The interface includes a menu bar (File, Edit, View, Items, Projects, Build, Debug, Database, SCM, Tools, Window, Help), a toolbar, and several panels:

- Projects Panel:** Shows a tree view of the project structure. The 'mygbc' directory is selected, containing a 'js' subdirectory with files like 'MyHeaderBarWidget.js', 'MyHeaderBarWidget.tpl.html', and 'MyMainContainerWidget.js'.
- Code Editor:** Displays the 'main.scss' file with the following content:

```
1  
2 body {  
3   background: black;  
4 }  
5  
6 .gbc_ApplicationHostMenuWidget.mt-toolb  
7   z-index: 0;  
8   display: none;  
9 }  
10  
11 header {  
12   background: linear-gradient($gbc-fiel  
13     color: $gbc-secondary-text-color;  
14 }  
15  
16 .gbc_FormWidget {  
17   background: linear-gradient($gbc-head  
18 }  
19  
20 .vanished {  
21   display: none;  
22 }
```
- Properties Panel:** Shows the 'Project' properties for the selected file. The 'Source directory' is set to '\$(ProjectDir)/mygbc' and the 'Target directory' is '\$(ProjectDir)/distbin'. The 'Language' is set to 'GBC'.
- Output Panel:** Displays the execution time and progress for various tasks. The total execution time is 2.9s. The progress bar shows the following tasks and their completion percentages:

Task	Time	Progress
loading tasks	60ms	21%
copy:resources	52ms	2%
templates2js:compile	66ms	2%
sass:development	1.6s	54%
autoprefixer:css	238ms	8%
sass:inlinevars	38ms	1%
concat:cdevgbc	119ms	4%
replace:version	74ms	3%
replace:prod	35ms	1%
Total	2.9s	



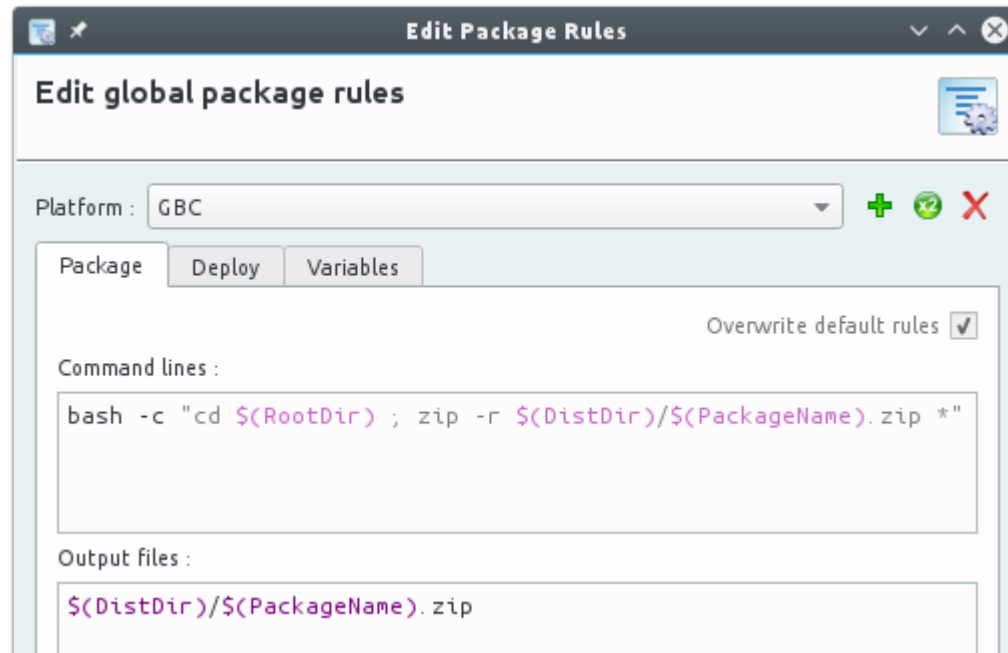
FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017

Genero Studio

Custom Package rules



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



Genero Studio

Custom Package rules

The screenshot displays the Genero Studio 3.10.06 interface. The main editor shows the file 'MyMainContainerWidget.tpl.html' with the following content:

```
1 <!--
2 FOURJS_START_COPYRIGHT(D,2016)
3 Property of Four Js*
4 (c) Copyright Four Js 2016, 20
5 * Trademark of Four Js Develop
6 in the United States and els
7
8 This file can be modified by 1
9 product manual.
10 FOURJS_END_COPYRIGHT
11 -->
12 <div>
13 <header>
14 </header>
15 <!-- GBC will be rendered in
16 <div class="containerElement"
17 </div>
18
```

The Properties panel on the right shows the following settings:

Name	Value
Project	
Description	
Exclude from build	<input type="checkbox"/>
Settings	
Platform	GBC
Distribution directory	\$(ProjectDir)/distbin
Root directory	\$(GBCPROJDIR)/dist/customization/mygbc
Package	
ID	
Label	
Version	1
Android	
iOS	

The Output panel at the bottom shows the following log:

```
adding: resources/img/logo_light.png (stored 0%)
adding: resources/img/logo.png (stored 0%)
adding: resources/img/emptytabbed.png (deflated 20%)
adding: resources/img/wheel.gif (deflated 24%)
adding: resources/img/logo-notext.png (stored 0%)
adding: VERSION (stored 0%)
*** Success [17:21:31] ***
```



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017

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.



FOUR Js
The Power of Simplicity

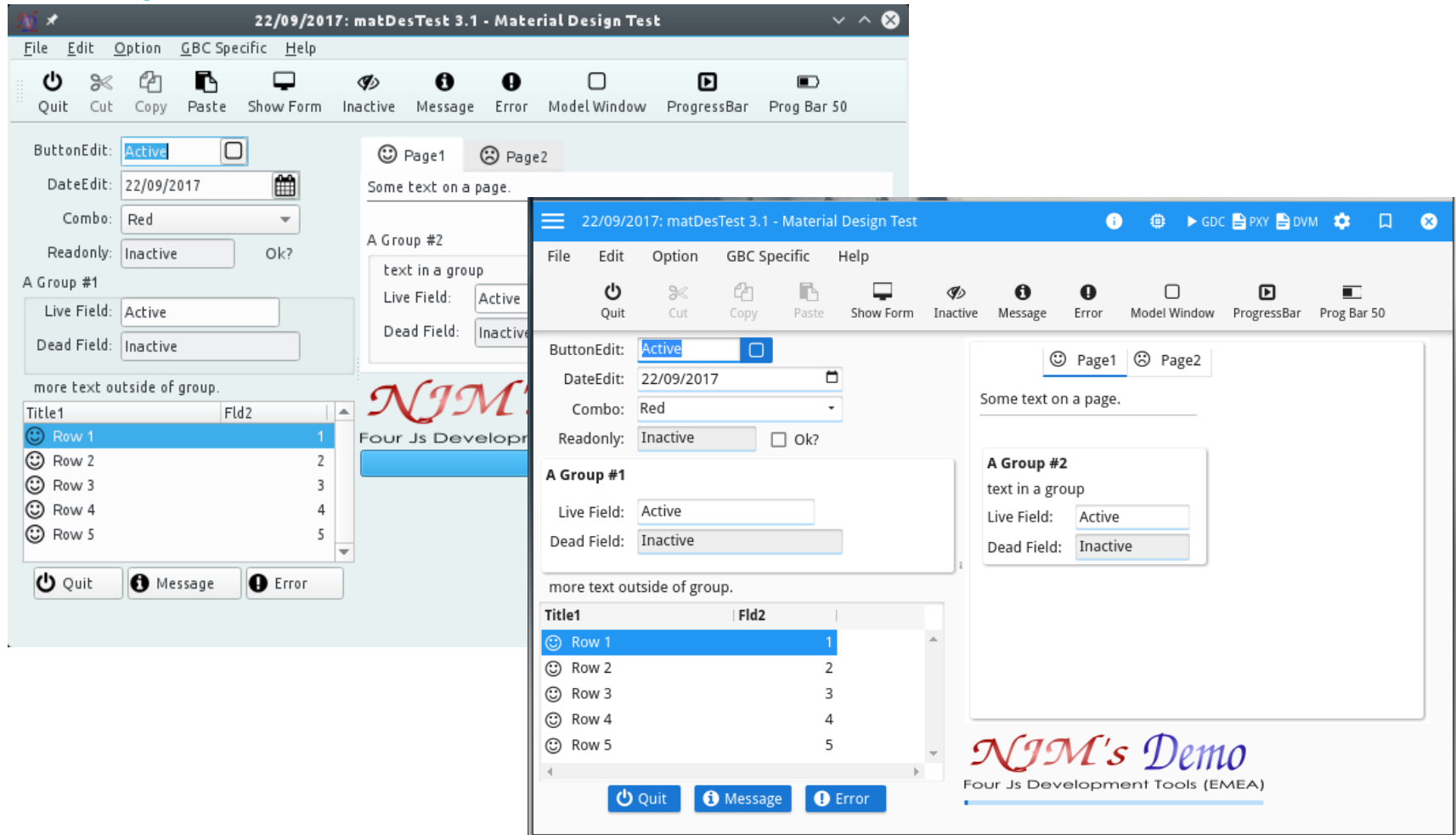
WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



Test Application

A testing asset



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017

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>



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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",
```



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



Colors (Colours)

All the colours of the rainbow

Style – Color

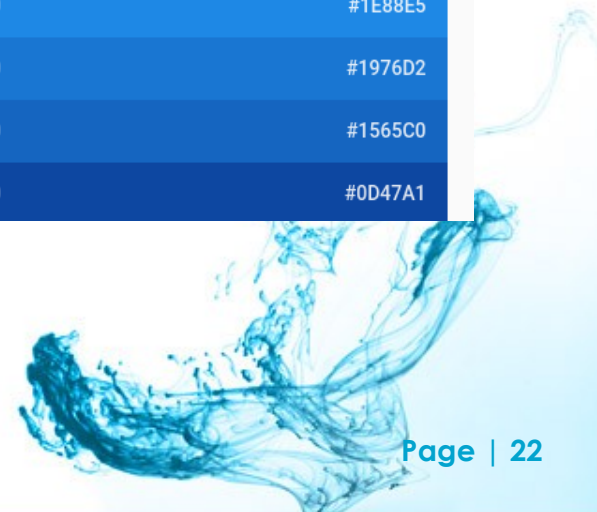
Deep Purple		Indigo		Blue	
500	#673AB7	500	#3F51B5	500	#2196F3
50	#EDE7F6	50	#E8EAF6	50	#E3F2FD
100	#D1C4E9	100	#C5CAE9	100	#BBDEFB
200	#B39DDB	200	#9FA8DA	200	#90CAF9
300	#9575CD	300	#7986CB	300	#64B5F6
400	#7E57C2	400	#5C6BC0	400	#42A5F5
500	#673AB7	500	#3F51B5	500	#2196F3
600	#5E35B1	600	#3949AB	600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



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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`



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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.



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



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.**



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



Headers

Heading Layout

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

```
<div>
  <table width="100%">
    <tr>
      <td id="logocell" width="20%" align="left">
        
      </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>
```

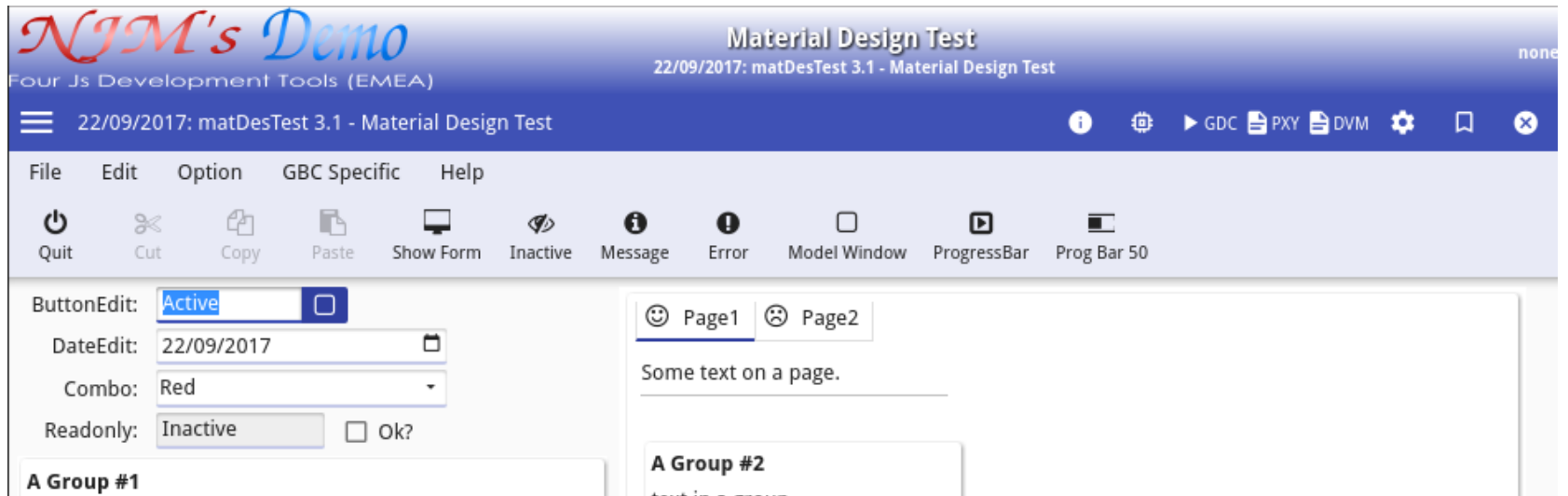
‘MyHeaderBarWidget-banner’ will be the Application Text

‘MyHeaderBarWidget-title’ will be the Window Text



Headers

Getting a head of ourselves



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



Headers

js/MyHeadingBarWidget.js

```
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>";  
            }  
        }  
    }  
});
```



Headers

Heading Styles

sass/MyHeadingBarWidget.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;
}

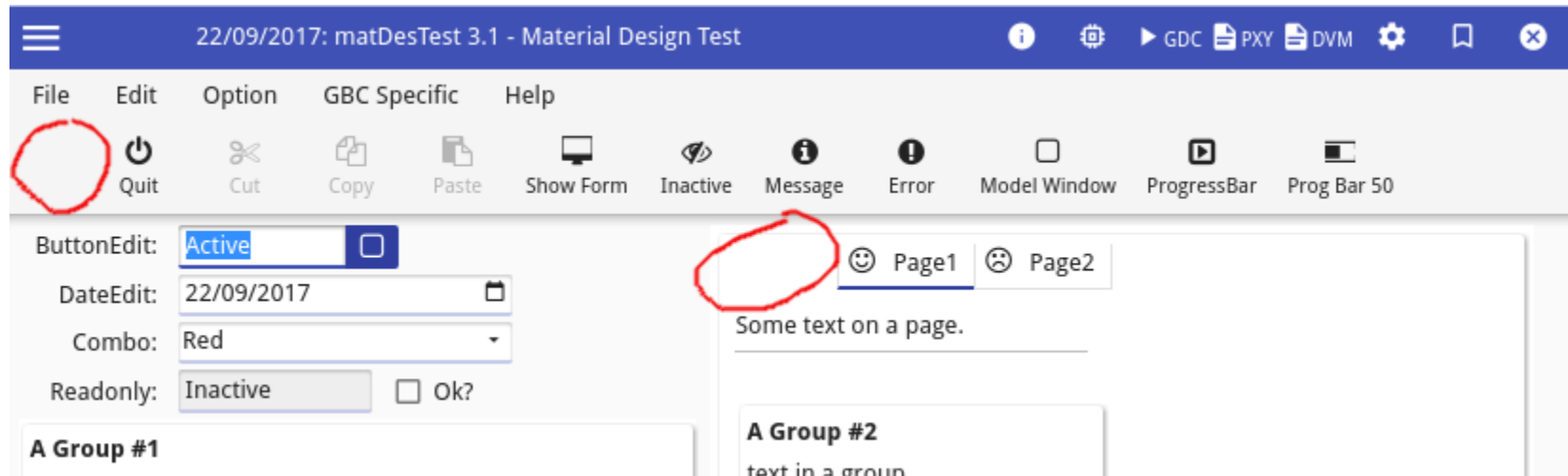
.gbc_MyMainContainerWidget > header {
  text-align: center;
}
```



More Customizations

Tidy up!

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;  
}
```



FOUR Js
The Power of Simplicity

WWDC 17

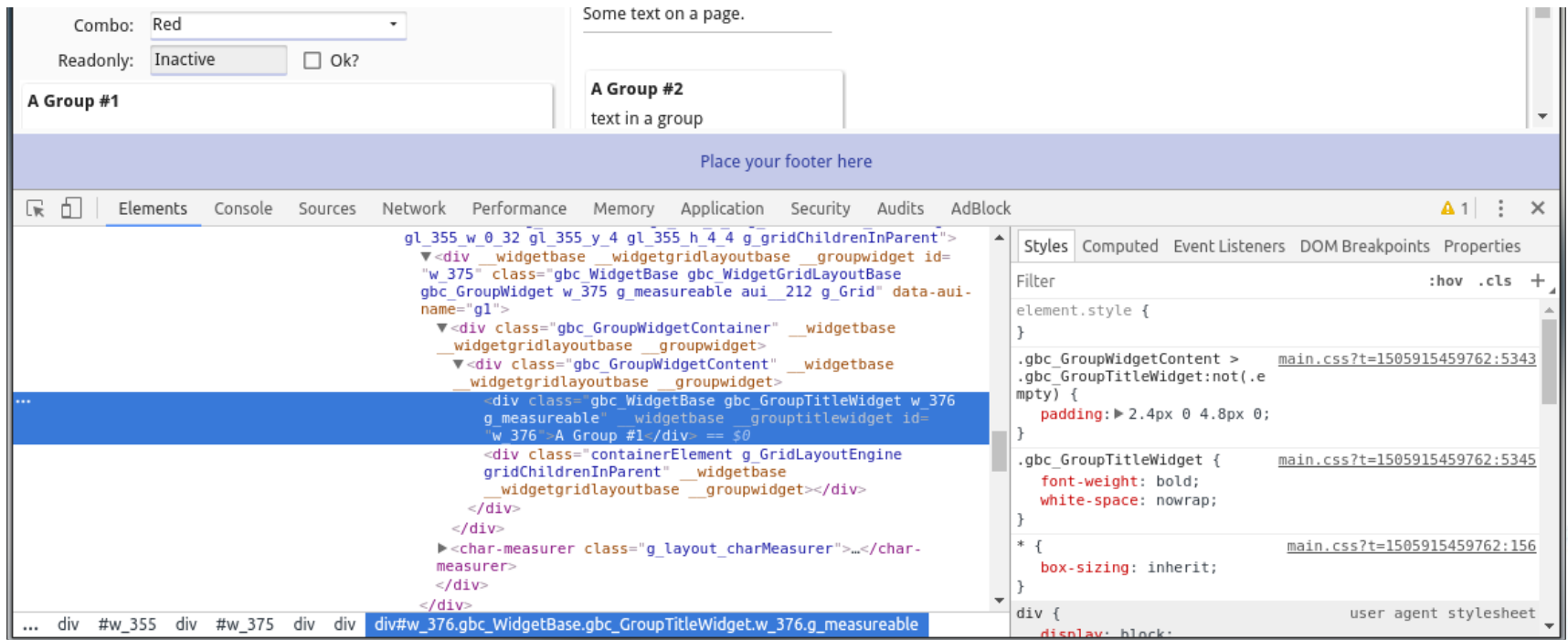
JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017



Customization – Group Title

Group Titles

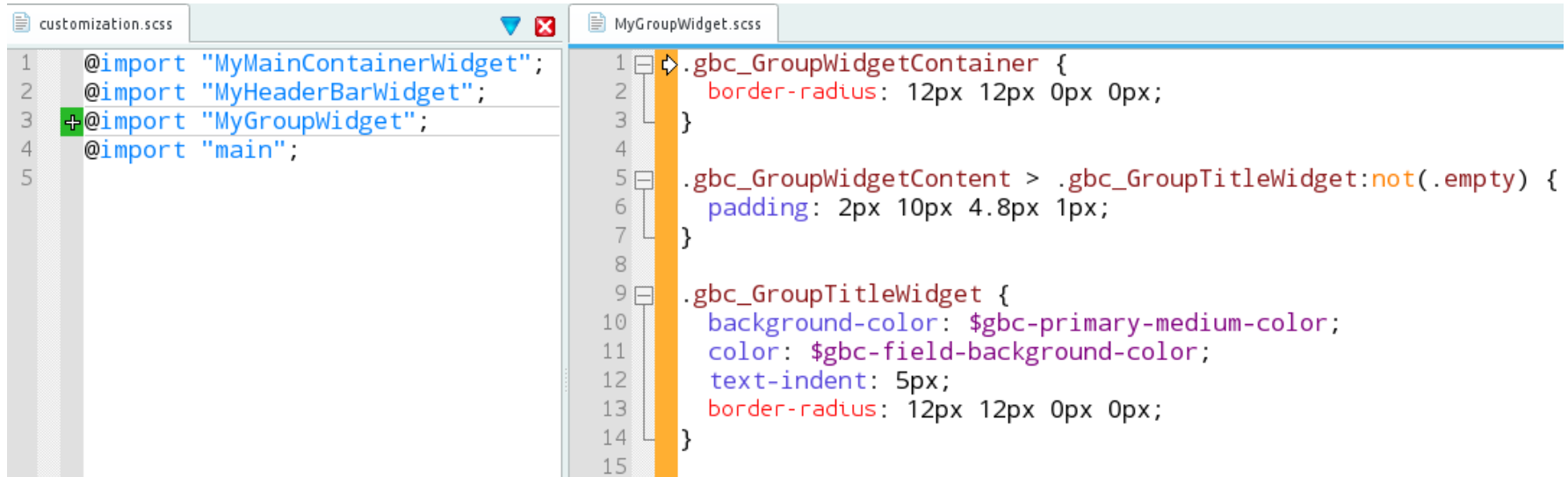
First we need to identify the style class names that have been used by the GBC for the GroupBox object. You use the ‘inspect element’ feature in Chrome.



Customization – Group Title

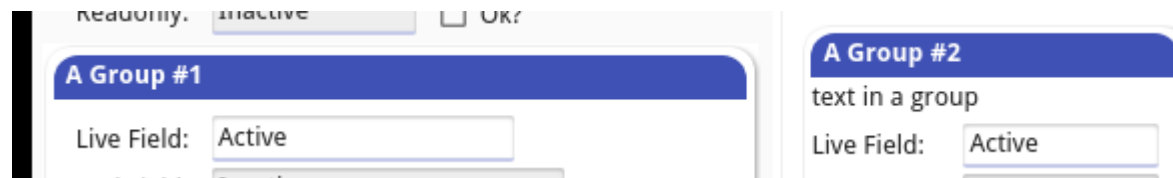
Group Titles

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



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



FOUR Js
The Power of Simplicity

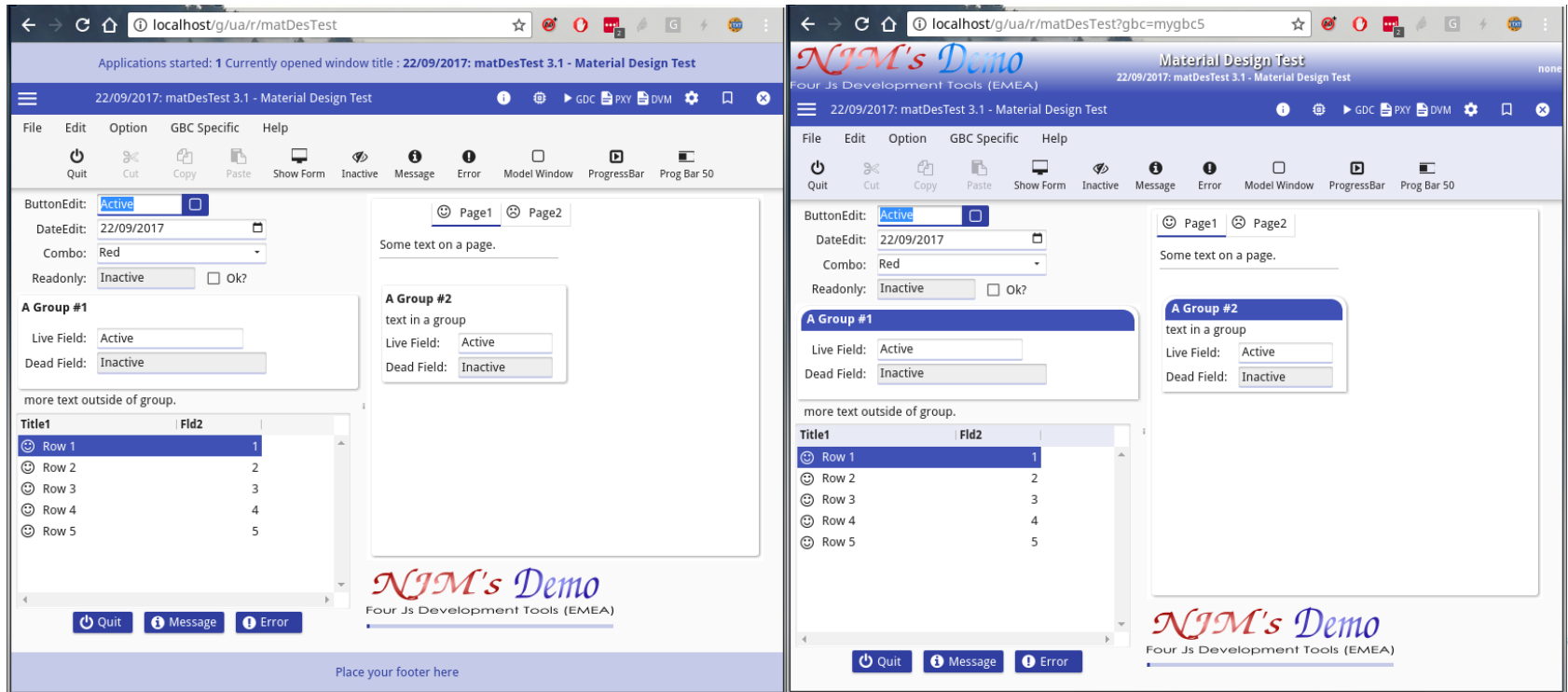
WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017

Customizations

Our goal

Before / After our changes



More Customizations

Multiple Themes: Blues

With basic customizations you can achieve a variety of looks.



FOUR Js
The Power of Simplicity

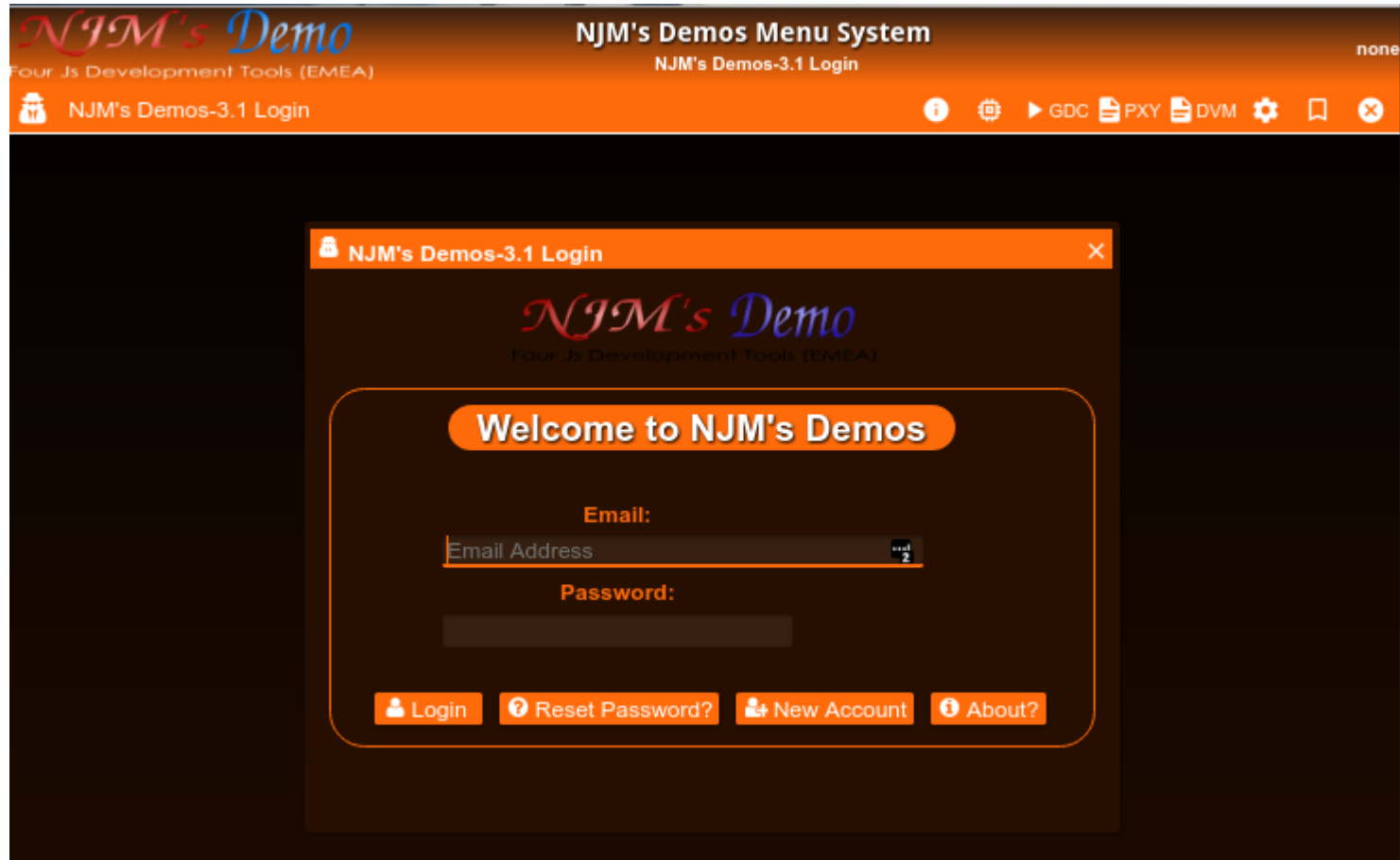
WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017

More Customizations

Multiple Themes: Elite

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



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017

More Customizations

Multiple Themes: Simply Purple

A very simple plain version.

A screenshot of a web browser window titled "NJM's Demos-3.1 Login". The page has a purple header with the text "NJM's Demo" in a stylized font, followed by "Four Js Development Tools (EMEA)". Below this is a "Welcome to NJM's Demos" message. The login form consists of an "Email:" label, an "Email Address" input field, a "Password:" label, and a password input field. At the bottom, there are four buttons: "Login", "Reset Password?", "New Account", and "About?". The entire form is enclosed in a white border with a purple shadow.

FOUR Js
The Power of Simplicity

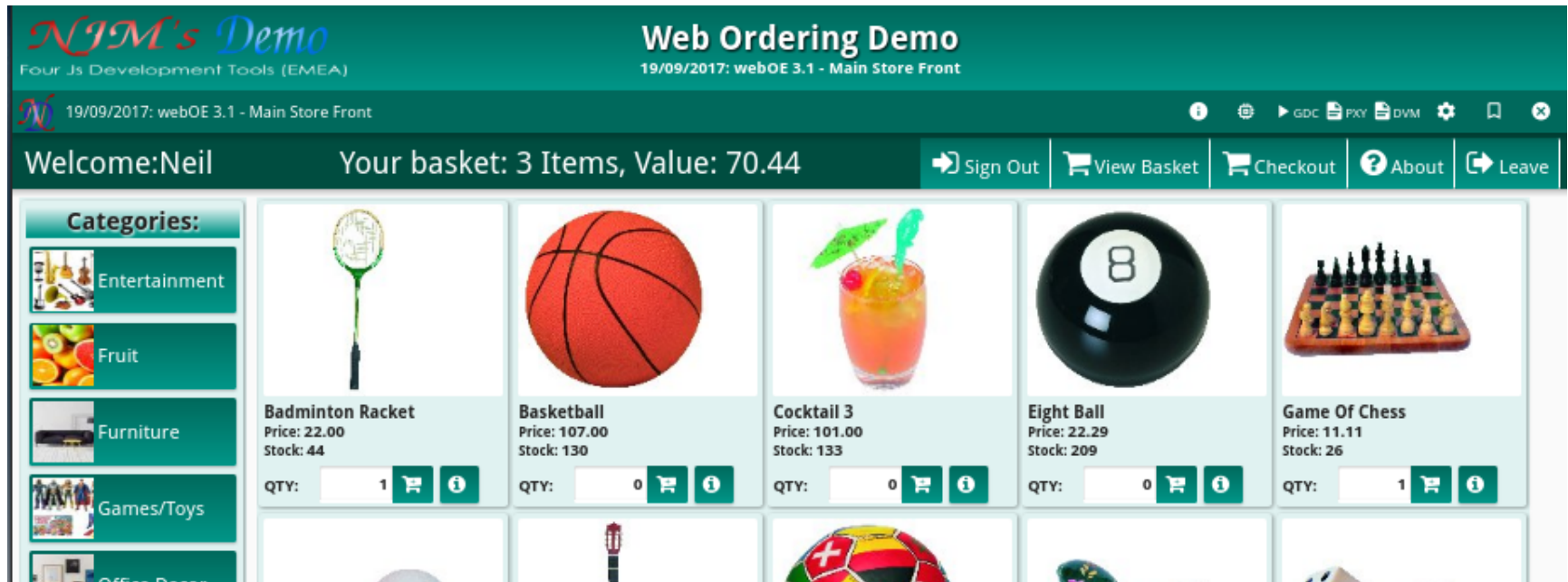
WWDC 17

JW Marriott Cancun Resort & Spa
Cancun, Mexico. Sept 26-29, 2017

More Advanced Customizations

Custom Toolbar

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



More Advanced Customizations

Paging products

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

The screenshot displays a web application titled "Web Ordering Demo" with a green header. The header includes the text "NJM's Demo" and "Four Js Development Tools (EMEA)". Below the header, a navigation bar shows the date "19/09/2017: webOE 3.1 - Main Store Front" and a user status "Welcome:Guest". The basket status is "Your basket: 0 Items, Value: 0.00". Navigation links include "Sign In", "View Basket", "Checkout", "About", and "Leave".

The main content area features a grid of 15 product items, each with an image, name, price, stock, and a quantity selector. The products are:

- Badminton Racket: Price: 22.00, Stock: 44
- Basketball: Price: 107.00, Stock: 130
- Cocktail 3: Price: 101.00, Stock: 133
- Eight Ball: Price: 22.29, Stock: 209
- Game Of Chess: Price: 11.11, Stock: 26
- Golf Ball And Tee: Price: 14.50, Stock: 126
- Guitar 2: Price: 37.33, Stock: 129
- International Football: Price: 21.67, Stock: 129
- Maracas: Price: 3.00, Stock: 167
- Playing Dice: Price: 25.00, Stock: 44
- Scuba Diving Flippers: Price: 31.00, Stock: 182
- Table Tennis Bats And Ball: Price: 4.00, Stock: 175
- Toy Bi Plane: Price: 17.29, Stock: 191

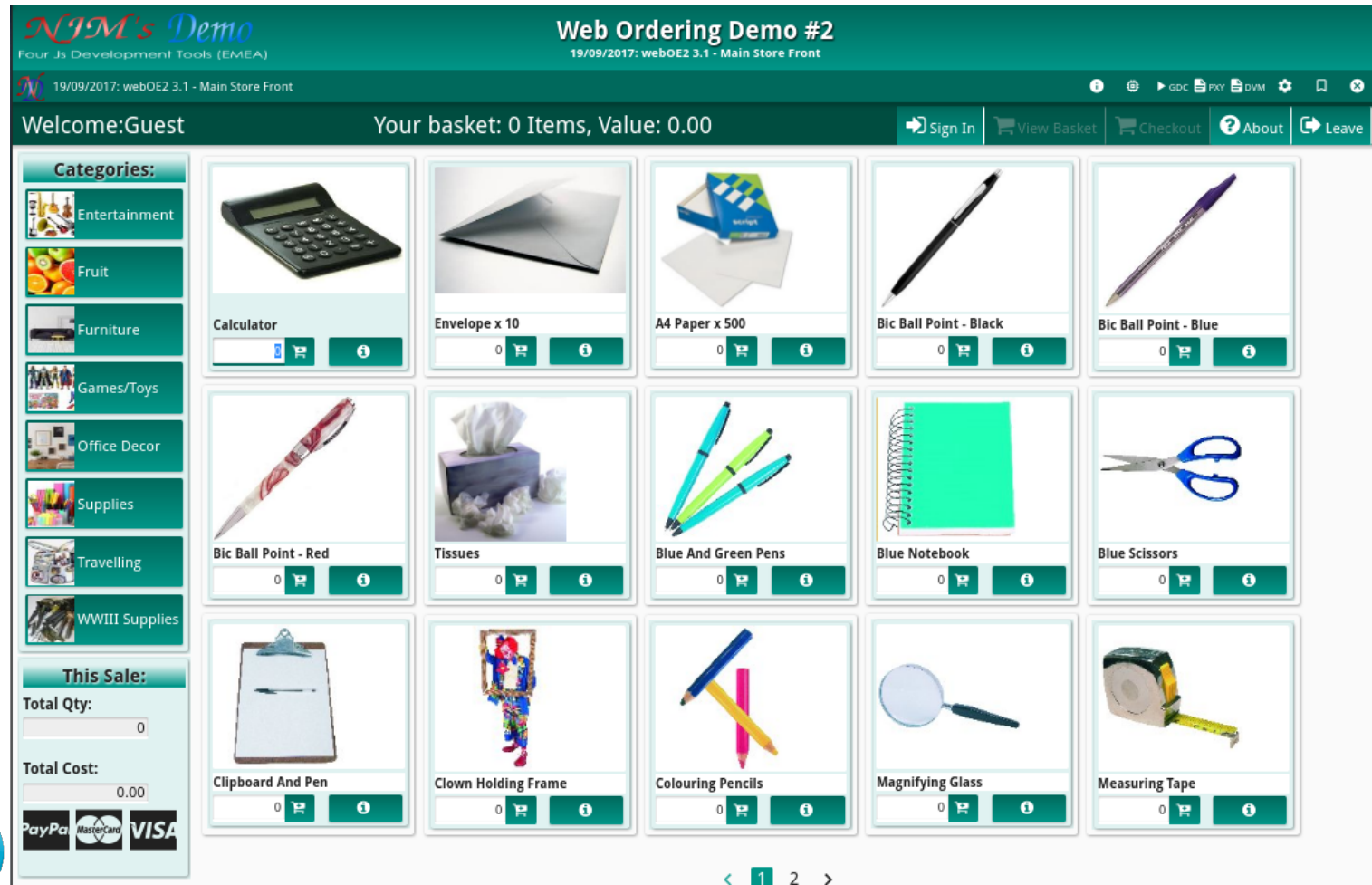
The left sidebar contains a "Categories" section with links to Entertainment, Fruit, Furniture, Games/Toys, Office Decor, Supplies, Travelling, and WWII Supplies. Below this is a "This Sale:" section showing "Total Qty: 0" and "Total Cost: 0.00". At the bottom of the sidebar are logos for PayPal, MasterCard, and VISA.



More Advanced Customizations

Paging products

This version is using a 'simple' ScrollGrid

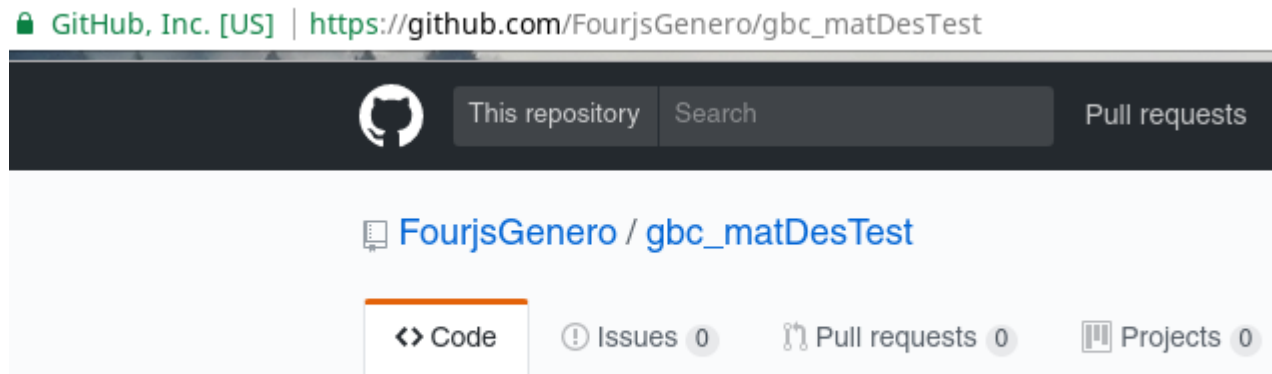


Try it for yourself

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



FOUR Js
The Power of Simplicity

WWDC 17

JW Marriott Cancùn Resort & Spa
Cancun, Mexico. Sept 26-29, 2017