

# 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 working on Genero Cloud.**

**My background is in developing 4gl applications and I have been using 4gl ( Informix / 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 our GBC files**
- **Change the colours of the GBC and test it**
- **Setup GeneroStudio to build GBC**
- **A test Application**
- **Headers and Footers**
- **Packaging and deploy GBC**
- **More GBC customizations**



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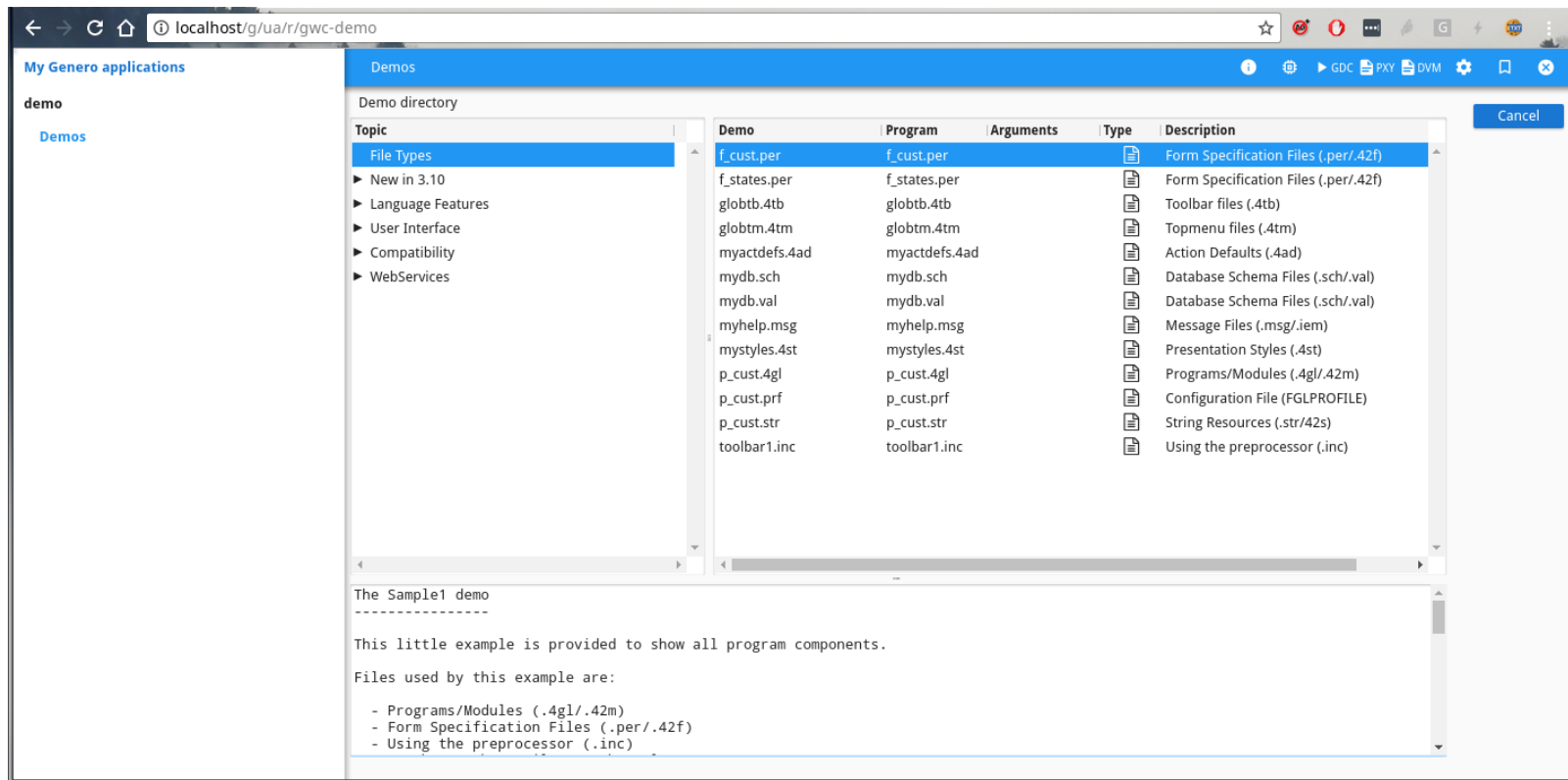
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# GBC Default Test

Basic sanity test

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



# 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 where 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
```

Once complete you should have a 'default' custom GBC built.



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# Setup the GBC Dev Environment

Configure for running

**Next, before you can test the 'default' custom GBC you need to make sure the GAS can find it.**

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

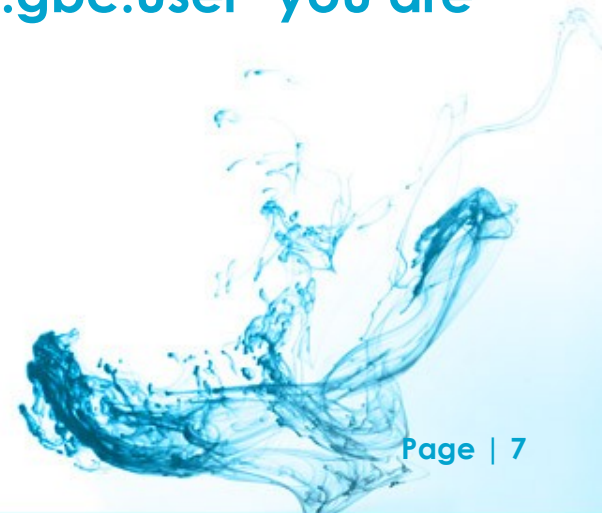
**Once you have a link in FGLDIR web\_utilities gbc folder or you've modified the as.xcf for the "res.path.gbc.user" you are ready to test your build.**



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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>

The screenshot shows a web browser window at `localhost/g/ua/r/gwc-demo?gbc=mydef`. The application interface has a sidebar on the left titled "My Genero applications" with a "demo" section containing a "Demos" link. The main area is titled "Demos" and contains a "Demo directory" section with a tree view showing "File Types" and a list of demo files. Below this is a table of demo files with columns: Demo, Program, Arguments, Type, and Description. At the bottom, there is a text area titled "The Sample1 demo" containing a description and a list of files used by the example.

Demo	Program	Arguments	Type	Description
f_cust.per	f_cust.per			Form Specification Files (.per/.42f)
f_states.per	f_states.per			Form Specification Files (.per/.42f)
globtb.4tb	globtb.4tb			Toolbar files (.4tb)
globtm.4tm	globtm.4tm			Topmenu files (.4tm)
myactdefs.4ad	myactdefs.4ad			Action Defaults (.4ad)
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

Once the 'default' Custom GBC build process works and you can run it you should setup your own sources folder like this:

- Create a new folder in your sources location for your custom GBC files.
- 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.



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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          ( to 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
```

-> new terminal

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



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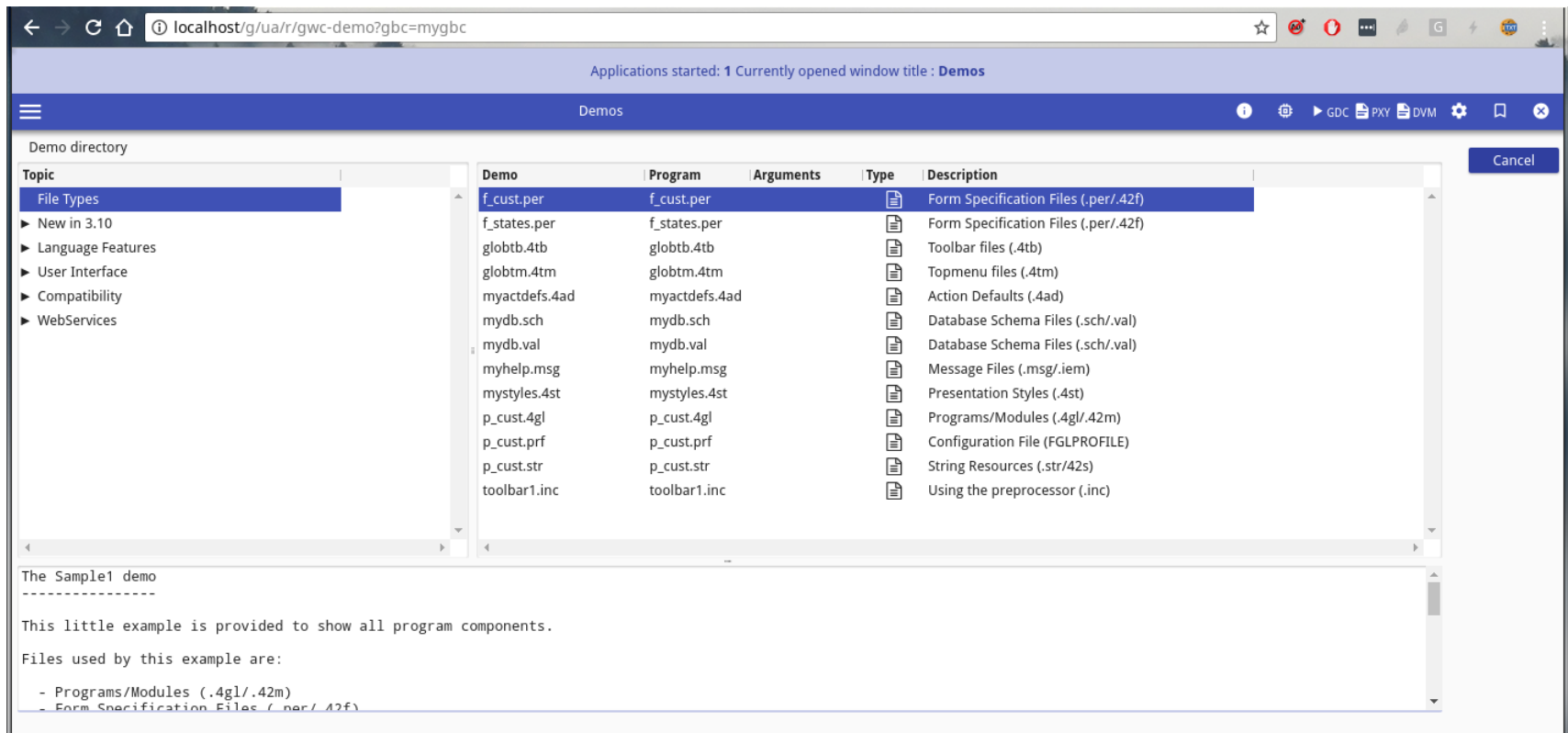


# GBC 'Default' Custom Run

At last, our own colours!

Test the custom GBC:

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



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# 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 it's theme.

**NOTE:** The 4st colors will override the theme colors.

The theme file allows us to change the colors for a 'material design'. See:

<https://material.io/guidelines/style/color.html#color-color-palette>



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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

# Colors ( Colours )

All the colours of the rainbow

The theme file is actually a JSON file and allows you to use the '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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# Genero Studio

Custom rules

**Genero Studio as many useful features that make it worth spending some time to configure so you can also use it to work on your custom GBC.**



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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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# Headers

Getting a head of ourselves

Once we are happy with our basic colours, we can add a heading with a sensible title and logo.



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# Headers

Getting a head of ourselves

**My Code adds a the Application Text into the header.  
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>
```



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# Headers

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



# More Customizations

Closer to our goal

Here there are few more subtle changed to the styles to limit the size, change group titles, remove some unwanted spaces



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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.

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 set against a light purple background within the browser window.

NJM's Demos-3.1 Login

*NJM's Demo*  
Four Js Development Tools (EMEA)

Welcome to NJM's Demos

Email:

Email Address

Password:

Login Reset Password? New Account About?



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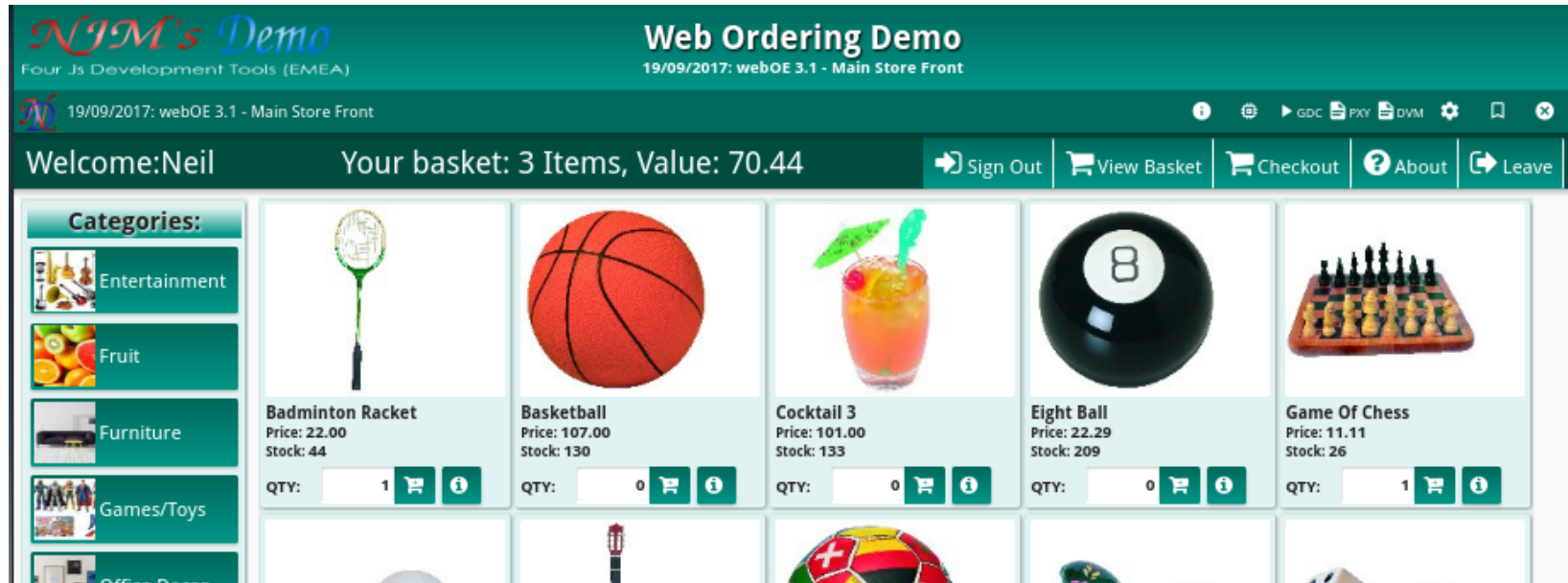
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# More Advanced Customizations

## 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 JavaScript and a dynamic form layout.

**NJM's Demo**  
Four Js Development Tools (EMEA)

**Web Ordering Demo**  
19/09/2017: webOE 3.1 - Main Store Front

19/09/2017: webOE 3.1 - Main Store Front

Welcome: Guest Your basket: 0 Items, Value: 0.00 Sign In View Basket Checkout About Leave

**Categories:**

- Entertainment
- Fruit
- Furniture
- Games/Toys
- Office Decor
- Supplies
- Travelling
- WWIII Supplies

**This Sale:**

Total Qty: 0

Total Cost: 0.00

PayPal MasterCard VISA

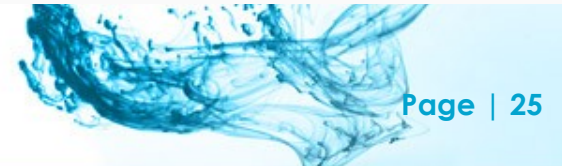
 <b>Badminton Racket</b> Price: 22.00 Stock: 44 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Basketball</b> Price: 107.00 Stock: 130 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Cocktail 3</b> Price: 101.00 Stock: 133 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Eight Ball</b> Price: 22.29 Stock: 209 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Game Of Chess</b> Price: 11.11 Stock: 26 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>
 <b>Golf Ball And Tee</b> Price: 14.50 Stock: 179 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Guitar 2</b> Price: 37.33 Stock: 126 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>International Football</b> Price: 21.67 Stock: 129 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Maracas</b> Price: 3.00 Stock: 167 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Playing Dice</b> Price: 25.00 Stock: 44 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>
 <b>Scuba Diving Flippers</b> Price: 31.00 Stock: 182 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Table Tennis Bats And Ball</b> Price: 4.00 Stock: 175 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>	 <b>Toy Bi Plane</b> Price: 17.29 Stock: 191 QTY: <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Remove"/>		



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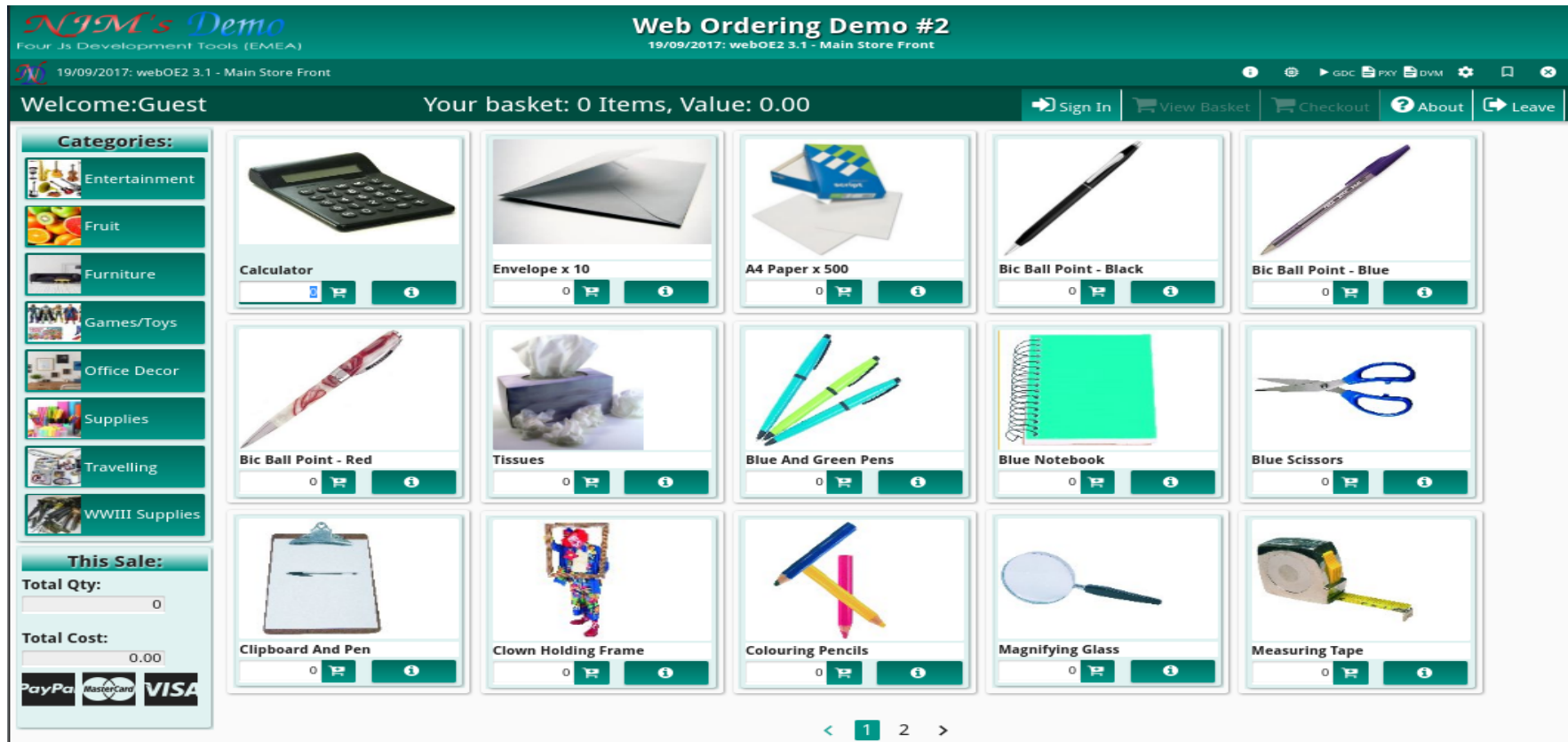
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# More Advanced Customizations

Paging products

This version is using a 'simple' ScrollGrid



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