Train the Trainer:
Implementing Self-Service Banner 9
Banner Extensibility – Page Builder
February 2023
Agenda

• When should you implement 9.x SSB?
• How to get help?
• Where is the documentation?
• Page Builder Overview
• Live Demo
• Ask your peers
• More training sessions coming soon
When should you implement 9.x SSB?

• **Do it now!**
  • All 8.x SSB entered **Maintenance Support** for at least 12 months beginning July 1, 2022
    – Continue to receive regulatory and severity 1 change request updates, including security fixes

• **From Ellucian: Update on Banner 8 Self-Service Maintenance Support**
  – Maintenance Support through at least March 31, 2024

• Don’t wait for Sustaining Support
  – No releases of any kind, including security fixes
When should you implement 9.x SSB?

### Summary of Support Statuses

<table>
<thead>
<tr>
<th>Type of Support</th>
<th>Active</th>
<th>Maintenance</th>
<th>Sustaining</th>
<th>End of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to submit software enhancement requests or ‘ideas’ for the next version</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to add a low severity change request</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional enhancements to the product are released</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New releases and related documentation</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New hot fixes or updates for severity 1 issues</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulatory updates</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support from Cloud technical resources and Action Line analysts via the Ellucian Support Center, email or phone</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Access to previously supplied hot fixes and regulatory updates</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Full access to online content such as knowledge base articles, product documentation, eCommunities forums, and product downloads</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
</tbody>
</table>

- Ellucian Article 000041256 - What is the support status of Self Service Banner 8.x (SSB 8.x)?
- Ellucian Article 000038478 - Ellucian Support Assurance – Support status table
- Ellucian Article 000050967 - What is the support status and future of Self Service Banner 8.x Admissions?
How to get help?

• ITS Helpdesk ticket for GeorgiaBEST team
• If Ellucian expertise required, we will open an Ellucian Customer Center case
Where is the documentation?

- **GeorgiaBEST website**
Where is the documentation?

• Need an Ellucian Customer Center account?
  – [https://login.ellucian.com/](https://login.ellucian.com/)
  – Click “Sign up for an account”

• **Ellucian Customer Center > Resources > Documentation > All Products** to access Ellucian Documentation, then use Product A-Z to filter for Banner

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**Extensibility**

Customize parts of Banner to support targeted business processes.

**Download it!**
Where is the documentation?

- Banner Extensibility - Overview
  - Page Builder
    - Security model
    - Pages
    - Manage custom stylesheets
    - Virtual Domain
    - Source code management and application packaging
    - Maintain security
    - Developer guidelines for Accessibility
  - Banner Theme Editor
  - Text Manager
  - Build a Page Builder Validation Page
  - Page Builder Patterns and Interactions

<table>
<thead>
<tr>
<th>Component Type</th>
<th>Required Attributes</th>
<th>Optional Attributes</th>
<th>Event handler and method ($method)</th>
<th>Optional Child Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>grid</td>
<td>type</td>
<td>label</td>
<td>onSave select</td>
<td></td>
<td>Grid data table to display and edit multiple rows in a tabular layout.</td>
</tr>
<tr>
<td></td>
<td>name</td>
<td>style</td>
<td>onSaveSuccess data</td>
<td></td>
<td>Supports Column reordering, Column hide/show and multiple column sorting.</td>
</tr>
<tr>
<td></td>
<td>model</td>
<td>parameters</td>
<td>onError display</td>
<td></td>
<td>Note: The onLoad function of the child components does not execute when they are inside a grid.</td>
</tr>
<tr>
<td></td>
<td>allowNew</td>
<td>$load</td>
<td>text</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>allowModify</td>
<td>$save</td>
<td>textArea</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>allowDelete</td>
<td>number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>allowReload</td>
<td>datetime</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pageSize</td>
<td>email</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>loadInitially</td>
<td>tel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>newRecordLabel</td>
<td>link</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>deleteRecordLabel</td>
<td>boolean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>saveDataLabel</td>
<td>literal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>refreshDataLabel</td>
<td>hidden</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Where is the documentation?

- Article 000040629 – List of Articles

000040629

List of Articles containing tips, tricks, and demos for Page Builder
3mo ago • 5227 Views • ★★★★★

Description of Issue

Here is a list of Articles containing tips, tricks, and examples for clients who are creating custom pages using Page Builder:

- Article 37494: Where can we find Banner Extensibility - Page Builder examples?
- Article 37089: Page Builder-Simple test to build a web page against the GTVEMAL table
- Article 42362: Steps to assign GSASECR security rules to a Page Builder page
- Article 45710: Debugging Oracle table permissions in Page Builder
- Article KB000500219: Page Builder Example: Displaying a person's name after an ID has been entered
- Article 46759: Page Builder Example: Radio Button
- Article 38662: Page Builder Example: Master / Detail Page
- Article 47461: Page Builder Example: Display an image file stored in database BLOB field
- Article 44442: How does the "Extends" feature work with Page Builder visual pages?
Where is the documentation?

• **Self-Service Banner 9.x Transformation Workbook**
  – Includes overview, best practice guidance, and how to migrate between environments

**Banner Extensibility and Page Builder Access**

**Banner Extensibility**

The majority of steps detailed in this workbook will require access to your institution’s Banner Extensibility site. Access to this site is dependent upon the Banner user, security object, and role requirements described below.

**MANAGED SERVICES NOTE:** Due to the design of baseline 9.x Self-Service functionality, Page Builder artifacts cannot be installed in Banner Managed Services environments by ITS GeorgiaBEST staff. Managed Services institutions must follow the steps in this workbook to import Page Builder artifacts.

**Page Builder users**

There are 3 types of Page Builder users:

- **Administrators** – Acts as Banner Extensibility super user and has Developer access
- **Developers** – Uses Banner Extensibility to create and maintain Page Builder pages
- **Page users** – Logs into Banner Self-Service to access pages as a Student, Faculty, Advisor, etc. based on existing Banner Self-Service 8.x role security
Page Builder Overview

What is Page Builder?

Page Builder is a tool to develop and run custom Banner 9 Self-Service Single Page applications in an intuitive and interactive manner.
The Page Builder application is built on the Banner 9 Self-Service framework, using the same user interface components and other common plugins that are shared across the Banner 9 Self-Service applications.

The security model has three distinct roles

- Users
- Developers
- Administrators
Page Builder Security Roles

Users
• End users who will utilize the pages (student, faculty, etc.)
• Access controlled by Application Page role security

Developers
• Able to create/modify/delete Page Builder artifacts
• Access granted on GSASECR by security object GPBADMN

Administrators
• Developer access plus access to the Security Configurations page
• Access granted on GSASECR by security object GPBADMA
Security Configuration

Page Builder Configurations

Type
- Select

- Production mode (Page Builder developers read-only)
- Prevent import by Page Builder Developers
- Enable Page Builder security

- Page
- Virtual Domain
- CSS
Virtual Domains
- Interacts with the Database
- Query/Delete/Insert/Update SQL Statements
- Requires Grants to BAN_DEFAULT_PAGEBUILDER_M

Page
- Interacts with the User
- Display information and Retrieve input
- LOTS of component types
  - Blocks, Literals, Grid, Select, Button...

Custom Style Sheets (CSS)
- Helps to customize what is displayed
- Allows for impactful changes with little code effort
Export and Import

• Export
  – Generates JSON file for each artifact
  – Export Current Permissions

• Import
  – Reads existing JSON file to generate the artifact
  – Copy Owner on Import
  – Copy all Developers permissions on import
• Page Builder
# Banner Security

## Roles

<table>
<thead>
<tr>
<th>Role Name</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAN_DEFAULT_PAGEBUILDER_M</td>
<td>Insert: No, Delete: No, Copy: No, Filter: No</td>
</tr>
</tbody>
</table>

## Role Privileges

### Owner
- BANSEC

### Comments

### Privileges

<table>
<thead>
<tr>
<th>Object Name</th>
<th>Owner</th>
<th>Object Type</th>
<th>Select</th>
<th>Insert</th>
<th>Update</th>
<th>Delete</th>
<th>Execute</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS_STUDENT_DATA</td>
<td>BANINST1</td>
<td>VIEW</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>BIN532F7ZAGXWPUGUIZYGJAJ4G==S0</td>
<td>GASIS</td>
<td></td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>BIN56JZ75PJMFGUIZYGAGKTA==S0</td>
<td>GASIS</td>
<td></td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>CSS</td>
<td>SSPBMGR</td>
<td>TABLE</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>DBA_SYNONYMS</td>
<td>SYS</td>
<td>VIEW</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>F_FORMAT_NAME</td>
<td>BANINST1</td>
<td>FUNCTION</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>F_GET_8GBSTDN_ROWID</td>
<td>BANINST1</td>
<td>FUNCTION</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>F_LATEST_TERM_FNC</td>
<td>BANINST1</td>
<td>FUNCTION</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>F_REGISTERED_THIS_TERM</td>
<td>BANINST1</td>
<td>FUNCTION</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>GBRCSEC</td>
<td>GENERAL</td>
<td>TABLE</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>GBRPSEC</td>
<td>GENERAL</td>
<td>TABLE</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>GBRVSEC</td>
<td>GENERAL</td>
<td>TABLE</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>GB_COMMON</td>
<td>BANINST1</td>
<td>PACKAGE</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
</tbody>
</table>
# Page Builder Main Page

## Virtual Domain Composer
- Export Domains
- Domain Roles

## Visual Page Composer
- Export Pages
- Page Roles

## CSS Manager
- Export CSS Stylesheets

## Import
- Developer Security

### Application Pages
- **DEMO_Subj_Term_Counts**
  - Last Updated: Feb 6, 2023 2:15:49 PM
- **EcafGenerateNewRequestPage**
  - Last Updated: Jan 20, 2023 3:14:39 PM
- **PersonalInformationAndEmergencyContactsTemplate**
  - Last Updated: Jan 20, 2023 3:14:39 PM

### Search Pages
- **AIPAdditionalInfoEUR**
  - Last Updated: Jan 20, 2023 3:14:56 PM
- **AIPAddressDetailsEUR**
  - Last Updated: Jan 20, 2023 3:14:56 PM
- **AIPConfirmEnrolmentEUR**
  - Last Updated: Jan 20, 2023 3:14:56 PM
Security Configuration

Page Builder Configurations

Type

- Select
- Page
- Virtual Domain
- CSS

- Production mode (Page Builder developers read-only)
- Prevent import by Page Builder Developers
- Enable Page Builder security
Virtual Domains

Define or modify virtual domain definition

<table>
<thead>
<tr>
<th>Load Virtual Domain Definition</th>
<th>Save Virtual Domain Definition</th>
<th>Delete Virtual Domain Definition</th>
<th>Domain Roles</th>
<th>Developer Security</th>
<th>Virtual Domain Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>usgTransArtic_levList</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>VMORALES</td>
</tr>
</tbody>
</table>

Query Statement

```
SELECT DISTINCT SHBTATC_TLVL_CODE, GTVSDAX_DESC
FROM STVLEVEL STVTAST, SHBTATC, GTVSDAX
WHERE SHBTATC_TAST_CODE = STVTAST_CODE
AND STVTAST_STATUS_IND = 'A'
AND SHBTATC_SBG_L CODE = sbglun
AND SHBTATC_TLVL_CODE = STVLEVEL_CODE
AND SHBTATC_TLVL_CODE = GTVSDAX_EXTERNAL_CODE
AND GTVSDAX_INTERNAL_CODE = LEV
```

Delete Statement

```

```

Post/Create/Save Statement

```

Put/Update Statement

```

Query result

Parameters: sbglun=1801

```
["ROW_NUMBER":1,"SHBTATC_TLVL_CODE":"US","GTVSDAX_DESC":"Undergraduate"]
```
### Virtual Domain Roles

#### Edit Roles for selected virtual domain

<table>
<thead>
<tr>
<th>Role</th>
<th>Allow All</th>
<th>Allow Get</th>
<th>Allow Post</th>
<th>Allow Put</th>
<th>Allow Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Page Builder Developer Tools</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Faculty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web Tailor Administrator</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

[Virtual Domain Composer]
Visual Page Composer
Component Options

- USGTransferArticulation [Page]
- Audit_Trail [Literal]
- Audit_Trail_9_23 [Literal]
- PAGEHEADER [Block]
- cur_state_list [Resource]
- cur_nation_list [Resource]
- cur_school_list [Resource]
- cur_subj_list [Resource]
- cur_levl_list [Resource]
- cur_term_list [Resource]
- cur_twgrinfo [Resource]

Move component up
### Page Roles

**Page Roles**

Page Roles for selected page

<table>
<thead>
<tr>
<th>Role</th>
<th>Allow Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Builder Developer Tools</td>
<td>☑</td>
</tr>
<tr>
<td>Faculty</td>
<td>☑</td>
</tr>
<tr>
<td>Student</td>
<td>☑</td>
</tr>
<tr>
<td>Web Tailor Administrator</td>
<td>☑</td>
</tr>
</tbody>
</table>

**Applied Page roles**

URL /customPage/page/USGTransferArticulation/**

**Spring Security Attributes** ROLE_GPBADMIN_BAN_DEFAULT_PAGEBUILDER_M, ROLE_SELFSERVICE-FACULTY_BAN_DEFAULT_M, ROLE_SELFSERVICE-STUDENT_BAN_DEFAULT_M, ROLE_SELFSERVICE-WTAILORADMIN_BAN_DEFAULT_M
CSS Manager

Load Stylesheet: USGStandardCSS

Select a name for publishing: USGStandardCSS
Enter a description: AUDIT TRAIL: 9.23 10/2022 KEG Initial release

Stylesheet Source:

```css
#brandingDiv { height:0; }
.HeaderBlock { border-bottom:5px solid #000; padding-bottom:10px; margin-bottom:20px; }
.ReleaseNum { font-size:14px; font-weight: bold; border-top:5px solid #000; padding-bottom:10px; }
```
Export Virtual Domains

Name Filter

usgtrans

Used by page like

Page...

Filtered Virtual Domains

Export Target

- Server File System
- Download to client

Select all for export

Virtual domains to export

The table below shows the Page Builder virtual domains matching the Virtual domain Filter above (use % (any character sequence) and _ (any character) as wild card). You can select the items you like to export and then press the Export Button.

<table>
<thead>
<tr>
<th>Name</th>
<th>Last update</th>
<th>Virtual Domain Owner</th>
<th>Timestamp File</th>
<th>Select for Export</th>
<th>Download</th>
<th>Export Current Per...</th>
</tr>
</thead>
<tbody>
<tr>
<td>usgTransArtic_class</td>
<td>08/16/2022</td>
<td>MMORALES</td>
<td></td>
<td></td>
<td>Click to download this virtual</td>
<td></td>
</tr>
<tr>
<td>usgTransArtic_class</td>
<td>08/16/2022</td>
<td>MMORALES</td>
<td></td>
<td></td>
<td>Click to download this virtual</td>
<td></td>
</tr>
<tr>
<td>usgTransArtic_home</td>
<td>08/14/2022</td>
<td>MMORALES</td>
<td></td>
<td></td>
<td>Click to download this virtual</td>
<td></td>
</tr>
<tr>
<td>usgTransArtic_levl</td>
<td>08/10/2022</td>
<td>MMORALES</td>
<td></td>
<td></td>
<td>Click to download this virtual</td>
<td></td>
</tr>
<tr>
<td>usgTransArtic_nation</td>
<td>08/10/2022</td>
<td>MMORALES</td>
<td></td>
<td></td>
<td>Click to download this virtual</td>
<td></td>
</tr>
</tbody>
</table>
The table below shows the Page Builder pages matching the Page Filter above (use % (any character sequence) and _ (any character) as wild card). You can select the items you like to export and then press the Export Button.

<table>
<thead>
<tr>
<th>Name</th>
<th>Last update</th>
<th>Page Owner</th>
<th>Timestamp File</th>
<th>Select for Export</th>
<th>Download</th>
<th>Export Current Per...</th>
</tr>
</thead>
<tbody>
<tr>
<td>LM_USGTransferArticulo11/15/2022</td>
<td>11/15/2022</td>
<td>LMETCALF</td>
<td></td>
<td></td>
<td>Click to download this page</td>
<td></td>
</tr>
<tr>
<td>USGTransferArticulo11/18/2022</td>
<td></td>
<td>LMETCALF</td>
<td></td>
<td></td>
<td>Click to download this page</td>
<td></td>
</tr>
<tr>
<td>USGTransferArticulo09/19/2022</td>
<td></td>
<td>KGRAY</td>
<td></td>
<td></td>
<td>Click to download this page</td>
<td></td>
</tr>
</tbody>
</table>
Import Page Builder Artifacts from local directory

Select Artifact permissions

Check copy owner box to copy the owner from exported artifact. To set the user to current user, uncheck box.

- Copy Owner on Import

Check copy Developer permission box to copy the developer permission from the exported artifact. To copy no permission, uncheck box.

- Copy all Developers permissions on import

Select files from local directories for import

Choose Files | No file chosen

Uploaded Files

<table>
<thead>
<tr>
<th>File Name</th>
<th>Owner</th>
<th>Modified</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Import
• Have user select a Term

• Display results in a Grid of Student Enrollment Counts by Subject

• Give appearance of multiple pages
Banner Tables

- STVTERM (List of Terms to select)
- SFRSTCR (Student Course Registration)
- SSBSECT (Subject Information)
- STVRSTS (Registration Status Code)
- STVSUBJ (Subject Description)
Banner Tables

1. `grant select on SATURN.STVTERM TO BAN_DEFAULT_PAGEBUILDER_M;`
2. `grant select on SATURN.SFRSTCR TO BAN_DEFAULT_PAGEBUILDER_M;`
3. `grant select on SATURN.SSBSECT TO BAN_DEFAULT_PAGEBUILDER_M;`
4. `grant select on SATURN.STVRSTS TO BAN_DEFAULT_PAGEBUILDER_M;`
5. `grant select on SATURN.STVSUBJ TO BAN_DEFAULT_PAGEBUILDER_M;`
Create Virtual Domain

Define or modify virtual domain definition

Load Virtual Domain Definition: DEMO_Term_List

Save Virtual Domain Definition: DEMO_Term_List

Save Virtual Domain Definition

Delete Virtual Domain Definition

Domain Roles

Developer Security

Virtual Domain Owner: MMORALES

Query Statement

select stvterm_code, stvterm_desc from stvterm
where stvterm_start_date >= '01-JAN-' || to_number(to_char(SYSDATE, 'YYYY')-10);

Delete Statement

Post/Create/Save Statement

Put/Update Statement

Query result

Virtual Domain Roles

Edit Roles for selected virtual domain

<table>
<thead>
<tr>
<th>Role</th>
<th>Allow All</th>
<th>Allow Get</th>
<th>Allow Post</th>
<th>Allow Put</th>
<th>Allow Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Page Builder Developer</td>
<td></td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td></td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web Tailor Administrator</td>
<td></td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Virtual Domain: DEMO_Term_List
## Virtual Domain Roles

### Edit Roles for selected virtual domain

<table>
<thead>
<tr>
<th>Role</th>
<th>Allow All</th>
<th>Allow Get</th>
<th>Allow Post</th>
<th>Allow Put</th>
<th>Allow Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Page Builder Developer</em></td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Faculty</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Web Tailor Administrator</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

---

*Virtual Domain: DEMO_Subj_Counts*
Create New Page

Page View

Component Property View

- Type: Page
- Name: DEMO_Subj_Term_Counts
- Documentation: 
- Title: Counts by Subject
- Label: Subject Counts
- Style: 
- Import Custom Stylesheets: 
- Object Name: 
- Home URL: 

MMORALES

Page Owner

Load Page: DEMO_Subj_Term_Counts
Extends: 
New Page
Save As
Compile and Save
Reload
Preview
Delete
Page Roles
Developer Security
You are not authorized to view this page.
# Page Roles

**Edit Roles for selected page**

<table>
<thead>
<tr>
<th>Role</th>
<th>Allow Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Page Builder Developer Tools</td>
<td>✔️ ✔️</td>
</tr>
<tr>
<td>Faculty</td>
<td>✔️ ✔️</td>
</tr>
<tr>
<td>Web Tailor Administrator</td>
<td>✔️ ✔️</td>
</tr>
</tbody>
</table>

Apply page roles

Applied Page roles
Apply Page Roles

Page Roles

Page: DEMO_Subj_Term_Counts

Edit Roles for selected page

<table>
<thead>
<tr>
<th>Role</th>
<th>Allow Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Page Builder Developer Tools</td>
<td>✔</td>
</tr>
<tr>
<td>Faculty</td>
<td>✔</td>
</tr>
<tr>
<td>Web Tailor Administrator</td>
<td>✔</td>
</tr>
</tbody>
</table>

Applied Page roles

URL /customPage/page/DEMO_Subj_Term_Counts/**

Spring Security Attributes: ROLE_GPBADMN_BAN_DEFAULT_PAGEBUILDER_M, ROLE_SELFSERVICE-FACULTY_BAN_DEFAULT_M, ROLE_SELFSERVICE-WTAILORADMIN_BAN_DEFAULT_M

Roles applied
Subject Counts
Link to Virtual Domain
Add Resource and Link to VD
Add Block for Term

Select a component type

- Block
- Flow
- Form
- Block
- Grid
- HTML Table
- Detail
- Select
- Radio
- List
- Data
- Resource
- Literal
- Display
- Text
- TextArea
- Number
- DateTime
- E-mail
- Telephone
- Link

Create Component
Cancel Creation
Append Child Component to Block
Add Select to Block

Select a component type

- Block
- Flow
- Form
- Block
- Grid
- Html Table
- Detail

Create Component  Cancel Creation
Add Select Details

Load Page: DEMO_Subj.Term_Counts
Extends:

Page View

Component Property View

Type*: Select
Name*: SelectTermList
Source Model*: cur.TermList
Label Key*: STVTERM.DESC
Value Key*: STVTERM_CODE
Documentation
Label: Select a Term
Style
Label Style
Value Style
Source Parameters: ()
Model
Required
Placeholder
Value
On Update
On Load
On Error
Load Initially
Add Button to Block

Select a component type

- Block
- Form
- Grid
- Html Table
- Detail
- Select
- Radio
- List
- Data
- Literal
- Display
- Text
- TextArea
- Number
- DateTime
- E-mail
- Telephone
- Link
- Boolean

Create Component
Edit On Click for "SubmitTermBtn"

//temp code

OK
Subject Counts

Select a Term

View Totals
Add Second Block
Add Grid Details
Add Display to Grid

Select a component type

- Select
- Data
- Display
- Text
- TextArea
- Number
- Datetime
- E-mail
- Telephone
- Link
- Boolean
- Literal
- Hidden

Create Component
Add Third Display

Page View

- DEMO_Subj_Term_Counts [Page]
  - cur_TermList [Resource]
  - cur_SubjCounts [Resource]
  - TermListBlock [Block]
    - SelectList [Select]
    - SubmitTermBtn [Button]
  - SubjCountsBlock [Block]
    - SubjCountsGrid [Grid]
      - SubjCountsGrid_SSBSECT_SUBJ_CODE [Display]
      - SubjCountsGrid_STVSUBJ_DESC [Display]
      - SubjCountsGrid_STU_COUNT [Display]
## Subject Counts

Select a Term

View Totals

### Subject Student Counts

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
<th>Student Count</th>
</tr>
</thead>
</table>

Page 1 of 0

Records Found: 0
Add Functionality

• Capture the User input
• Display results in the Grid
• Hide/Show Blocks
• Add Button on Second Block
On Click for SubmitTermBtn

Edit On Click for "SubmitTermBtn"

```javascript
if ($SelectTermList == null) {
    alert('Please select a Term.);
}
else {
    // Set Variables
    $termSelected = $SelectTermList;
    console.log("Term Selected: " + $termSelected);

    // Show or Hide blocks as needed
    $TermListBlock.$style = "hidden";
    $SubjCountsBlock.$style = "show";

    // Load data grids as needed
    $SubjCountsGrid.$load({clearCache:true},true);
```

I
Edit Parameters for SubjCountsGrid

Key       Value
---       ------
term_in   $termSelected -

New Key
New Value
Select new value type:
○ Text ○ Number ○ Boolean
Enter new value:
Add

OK
Add Button to Second Block

- Load Page: DEMO_Subj_Term_Counts
- Extends: 
- Component Property View:
  - Type*: Button
  - Name*: ResetTermBtn
  - Label*: Select Another Term
  - On Click*: SubmitTermBtn
  - Documentation:
  - Style:
  - Value Style:
Edit On Click for "ResetTermBtn"

//Set Variables
$termSelected = "";

//Show or Hide Blocks as needed
$TermListBlock.$style = "show";
$SubjCountsBlock.$style = "hidden";

OK
Move the Button above the Grid

- SubjCountsBlock [Block]
- SubjCountsGrid [Grid]
  - SubjCountsGrid_SSBSECT_SUBJ_CODE [Display]
  - SubjCountsGrid_STVSUBJ_DESC [Display]
  - SubjCountsGrid_STU_COUNT [Display]
- ResetTermBtn [Button]

Move component up

- SubjCountsBlock [Block]
  - ResetTermBtn [Button]
- SubjCountsGrid [Grid]
  - SubjCountsGrid_SSBSECT_SUBJ_CODE [Display]
  - SubjCountsGrid_STVSUBJ_DESC [Display]
  - SubjCountsGrid_STU_COUNT [Display]
Style Hidden for Second Block
Subject Counts

Select a Term: Spring Semester 2019

View Totals
### Subject Counts

**Select Another Term**

#### Subject Student Counts

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
<th>Student Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT</td>
<td>Accounting</td>
<td>316</td>
</tr>
<tr>
<td>ACSK</td>
<td>Academic Skills</td>
<td>15</td>
</tr>
<tr>
<td>ARHS</td>
<td>Art History</td>
<td>5</td>
</tr>
<tr>
<td>ARST</td>
<td>Art Studio</td>
<td>47</td>
</tr>
<tr>
<td>ARTC</td>
<td>Art Appreciation</td>
<td>39</td>
</tr>
<tr>
<td>ARTF</td>
<td>Art Area F</td>
<td>23</td>
</tr>
<tr>
<td>ARTS</td>
<td>Art Seminar Study</td>
<td>19</td>
</tr>
<tr>
<td>ARTX</td>
<td>Art</td>
<td>6</td>
</tr>
<tr>
<td>BIOL</td>
<td>Biology</td>
<td>330</td>
</tr>
<tr>
<td>BUSA</td>
<td>Business Administration</td>
<td>462</td>
</tr>
<tr>
<td>CHEM</td>
<td>Chemistry</td>
<td>115</td>
</tr>
<tr>
<td>CHIN</td>
<td>Chinese</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>Information Technology</td>
<td>223</td>
</tr>
<tr>
<td>COMM</td>
<td>Communications</td>
<td>109</td>
</tr>
<tr>
<td>CRJU</td>
<td>Criminal Justice</td>
<td>65</td>
</tr>
</tbody>
</table>

Records Found: 56
• Add Spacing between buttons
• Style buttons
Add Literal to Page
Literal Value and Move under Select

Page View

Component Property View

Type: Literal
Name: BRTag1
Value: <br>
Documentation
Label
Style
Label Style
Value Style
Second Literal After ResetTermBtn
Subject Counts

Select a Term: Fall Semester 2022

View Totals
Subject Counts

Subject Student Counts

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
<th>Student Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT</td>
<td>Accounting</td>
<td>360</td>
</tr>
<tr>
<td>ACSK</td>
<td>Academic Skills</td>
<td>22</td>
</tr>
<tr>
<td>ARHS</td>
<td>Art History</td>
<td>9</td>
</tr>
<tr>
<td>ARST</td>
<td>Art Studio</td>
<td>31</td>
</tr>
<tr>
<td>ARTC</td>
<td>Art Appreciation</td>
<td>29</td>
</tr>
<tr>
<td>ARTF</td>
<td>Art Area F</td>
<td>23</td>
</tr>
<tr>
<td>ARTS</td>
<td>Art Seminar Study</td>
<td>16</td>
</tr>
<tr>
<td>ARTX</td>
<td>Art</td>
<td>2</td>
</tr>
<tr>
<td>BIOL</td>
<td>Biology</td>
<td>351</td>
</tr>
<tr>
<td>BUSA</td>
<td>Business Administration</td>
<td>504</td>
</tr>
<tr>
<td>CHEM</td>
<td>Chemistry</td>
<td>100</td>
</tr>
<tr>
<td>CHIN</td>
<td>Chinese</td>
<td>17</td>
</tr>
<tr>
<td>CIS</td>
<td>Information Technology</td>
<td>184</td>
</tr>
<tr>
<td>COMM</td>
<td>Communications</td>
<td>121</td>
</tr>
<tr>
<td>CRJU</td>
<td>Criminal Justice</td>
<td>70</td>
</tr>
</tbody>
</table>
What Term was selected?

- Add Description of Term Selected to Grid Label
if ($SelectTermList == null) {
    alert('Please select a Term.');
} else {
    //Set Variables
    $termSelected = $SelectTermList;
    $termDesc = $SelectTermList.$selected.STVTERM_DESC;
    console.log("Term Selected: " + $termSelected);
    console.log("Term Desc: " + $termDesc);

    //Show or Hide blocks as needed
    $TermListBlock.$style = "hidden";
    $SubjCountsBlock.$style = "show";

    //Load data grids as needed
    $SubjCountsGrid.$load({clearCache:true},true);
}
Add to Grid Label

Type: Grid
Name: SubjCountsGrid
Model: cur_SubjCounts

Label: Object Student Counts for $termDesc

Parameters: {"term_in": "$termSelect..."

Allow New: 
Allow Modify: 
Allow Delete: 
Allow Reload: 

Page Size: 15
On Click: 

Page View

Page Tree View

DEMOSubjTermCounts [Page]
  cur_TermList [Resource]
  cur_SubjCounts [Resource]

TermListBlock [Block]
  SelectTermList [Select]
  BRTag1 [Literal]
  SubmitTermBtn [Button]

SubjCountsBlock [Block]
  ResetTermBtn [Button]
  BRTag2 [Literal]

SubjCountsGrid [Grid]
  SubjCountsGrid_SSBECT_SUBJ_CODE [Display]
  SubjCountsGrid_STVSUBJ_DESC [Display]
  SubjCountsGrid_STU_COUNT [Display]
Reset Variable

Edit On Click for "ResetTermBtn"

//Set Variables
$termSelected = "";
$termDesc = "";

//Show or Hide Blocks as needed
$TermListBlock.$style = "show";
$SubjCountsBlock.$style = "hidden";
## Subject Counts

**Select Another Term**

### Subject Student Counts for Spring Semester 2022

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
<th>Student Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT</td>
<td>Accounting</td>
<td>241</td>
</tr>
<tr>
<td>ACSK</td>
<td>Academic Skills</td>
<td>5</td>
</tr>
<tr>
<td>ARHS</td>
<td>Art History</td>
<td>9</td>
</tr>
<tr>
<td>ARST</td>
<td>Art Studio</td>
<td>38</td>
</tr>
<tr>
<td>ARTC</td>
<td>Art Appreciation</td>
<td>29</td>
</tr>
<tr>
<td>ARTF</td>
<td>Art Area F</td>
<td>14</td>
</tr>
<tr>
<td>ARTS</td>
<td>Art Seminar Study</td>
<td>14</td>
</tr>
<tr>
<td>ARTX</td>
<td>Art</td>
<td>8</td>
</tr>
<tr>
<td>BIOL</td>
<td>Biology</td>
<td>329</td>
</tr>
<tr>
<td>BUSA</td>
<td>Business Administration</td>
<td>424</td>
</tr>
<tr>
<td>CHEM</td>
<td>Chemistry</td>
<td>64</td>
</tr>
<tr>
<td>CHIN</td>
<td>Chinese</td>
<td>3</td>
</tr>
<tr>
<td>CIS</td>
<td>Information Technology</td>
<td>99</td>
</tr>
<tr>
<td>CMCC</td>
<td>Case Management &amp; Care Coor</td>
<td>19</td>
</tr>
<tr>
<td>COMM</td>
<td>Communications</td>
<td>146</td>
</tr>
</tbody>
</table>
Subject Counts

Select a Term: Spring Semester 2022

View Totals
Add PageFooterBlock
Add Literal to PageFooterBlock

- Type: Literal
- Name: ReleaseNumber
- Value: Local Enhancement 1.0

Page Tree View:
- DEMOSubjTermCounts [Page]
  - cur_TermList [Resource]
  - cur_SubjCounts [Resource]
- TermListBlock [Block]
  - SelectTermList [Select]
  - BRTag1 [Literal]
  - SubmitTermBtn [Button]
- SubjCountsBlock [Block]
  - ResetTermBtn [Button]
  - BRTag2 [Literal]
- SubjCountsGrid [Grid]
  - SubjCountsGrid_SBSECT_SUBJ_CODE [Display]
  - SubjCountsGrid_STV_SUBJ_DESC [Display]
  - SubjCountsGrid_STU_COUNT [Display]
- PageFooterBlock [Block]
  - ReleaseNumber [Literal]
Subject Counts

Select a Term

View Totals

Local Enhancement 1.0
## Subject Counts

[Select Another Term]

### Subject Student Counts for Summer Term 2022

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
<th>Student Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT</td>
<td>Accounting</td>
<td>86</td>
</tr>
<tr>
<td>ARTC</td>
<td>Art Appreciation</td>
<td>12</td>
</tr>
<tr>
<td>BIOL</td>
<td>Biology</td>
<td>40</td>
</tr>
<tr>
<td>BUSA</td>
<td>Business Administration</td>
<td>164</td>
</tr>
<tr>
<td>CHEM</td>
<td>Chemistry</td>
<td>6</td>
</tr>
<tr>
<td>CIS</td>
<td>Information Technology</td>
<td>5</td>
</tr>
<tr>
<td>CMCC</td>
<td>Case Management &amp; Care Coor</td>
<td>8</td>
</tr>
<tr>
<td>COMM</td>
<td>Communications</td>
<td>17</td>
</tr>
<tr>
<td>CSCI</td>
<td>Computer Science</td>
<td>21</td>
</tr>
<tr>
<td>ECON</td>
<td>Economics</td>
<td>9</td>
</tr>
<tr>
<td>EDMG</td>
<td>Middle Grades Education</td>
<td>52</td>
</tr>
<tr>
<td>EDRG</td>
<td>Reading Education</td>
<td>33</td>
</tr>
<tr>
<td>EDSP</td>
<td>Special Education</td>
<td>43</td>
</tr>
<tr>
<td>EDUC</td>
<td>Education - General</td>
<td>369</td>
</tr>
<tr>
<td>EEDC</td>
<td>Elementary Education</td>
<td>245</td>
</tr>
</tbody>
</table>
Recommendations Summary

• Security
  – Production Mode enabled in PROD
  – Prevent Import by developers in PROD
  – Limit access to GPBADMA security object
  – Grants for BAN_DEFAULT_PAGEBUILDER_M in a script

• Export/Import
  – Export Current Permissions
  – Copy Development permissions on Import
  – Client instead of Server files

• Naming Conventions
  – No warning message about existing objects
  – Within a page names must be unique
Recommendations Summary

• Virtual Domains
  – Utilize PL/SQL packages with validation and logic checking for inserts, updates, and deletes
  – Multiple VDs for a single table is fine if you need to separate access for different pages
Recommendations Summary

• Pages
  – The name of the Page is the URL

• Source Code Repository
  – Save the exported objects
Live Demo
Ask your peers

- Helpful hints
- Lessons learned

Self-reported implementation status

- Banner 9 Implementation Grid
Ask your peers

• What would you create with Page Builder?
More training sessions coming soon

- Train the Trainer sessions for Self-Service Banner 9 during Q1 2023
- Proposed schedule:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Registration</td>
<td>Wednesday, January 25, 2023</td>
</tr>
<tr>
<td>Page Builder</td>
<td>Wednesday, February 8, 2023</td>
</tr>
<tr>
<td>Faculty Self-Service</td>
<td>Wednesday, February 22, 2023</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>Wednesday, March 8, 2023</td>
</tr>
<tr>
<td>Communication Management</td>
<td>Wednesday, March 22, 2023</td>
</tr>
<tr>
<td>Remaining Topics</td>
<td>Dates TBD</td>
</tr>
</tbody>
</table>