



## **SAGE Computing Services**

Customised Oracle Training Workshops and Consulting

### **Portal Wizardry**

Adapt, Alter and Augment Portal behaviour and features



*Ray Tindall*  
Senior Consultant

# Let's cut the ...

And get to the point

- WYSIWYG Editor
- Dynamic Sitemap
- Alter / Augment Built-ins

Date Picker

and ...



# The “REAL” Title

~~Portal Wizardry~~



## Hacking the Portal GUI Javascript/CSS & 3<sup>rd</sup> Party Stuff

Warning / Disclaimer



# WYSIWYG Editor

## Item Wizard

[Home](#) [Outline](#) [Navigator](#) [Help](#)

< Previous

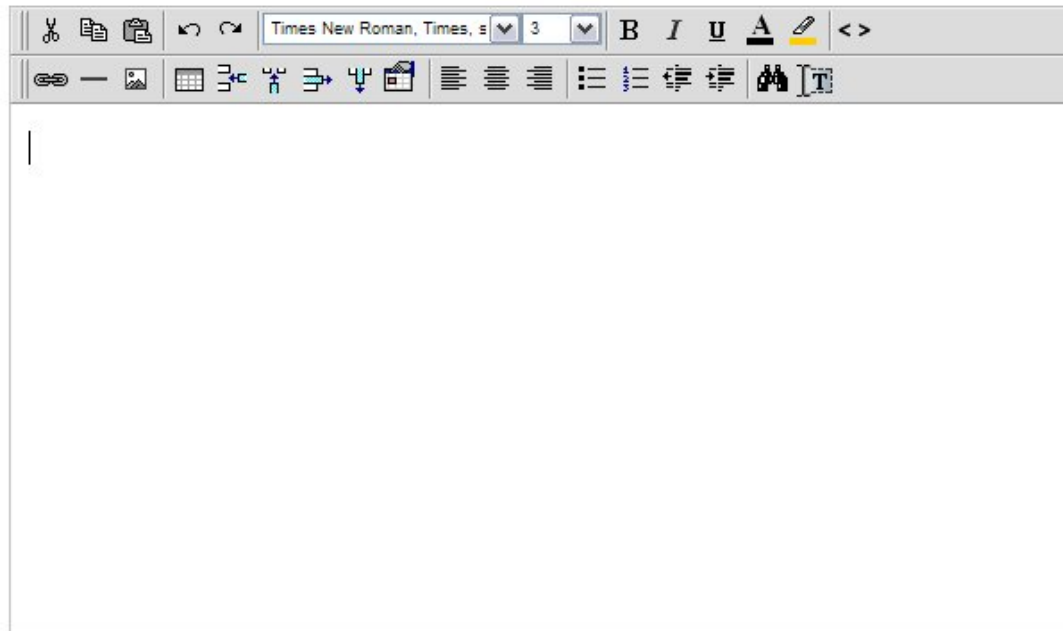
Finish

Cancel

Path: PAGE / DOW\_RTF\_DEFAULT /

### Item Attributes

Enter the text for this item in the display area, using the editing controls as needed. Enter a name for the item, which appears as a heading for the text, as well as other attributes that describe the item.



The image shows a WYSIWYG editor interface. At the top is a toolbar with various icons for editing text and documents. Below the toolbar is a large text area with a vertical cursor at the top left.

Toolbar icons (from left to right):

- Scissors (Cut)
- Document with arrow (Copy)
- Document (Paste)
- Undo (Curved arrow)
- Redo (Curved arrow)
- Font face dropdown (Times New Roman, Times, s)
- Font size dropdown (3)
- B (Bold)
- I (Italic)
- U (Underline)
- A (Text color)
- Background color (Yellow)
- <> (Source code)

Text area: A large rectangular box with a vertical cursor at the top left.

Text

Display Name

## Edit Text: [No Display Name]

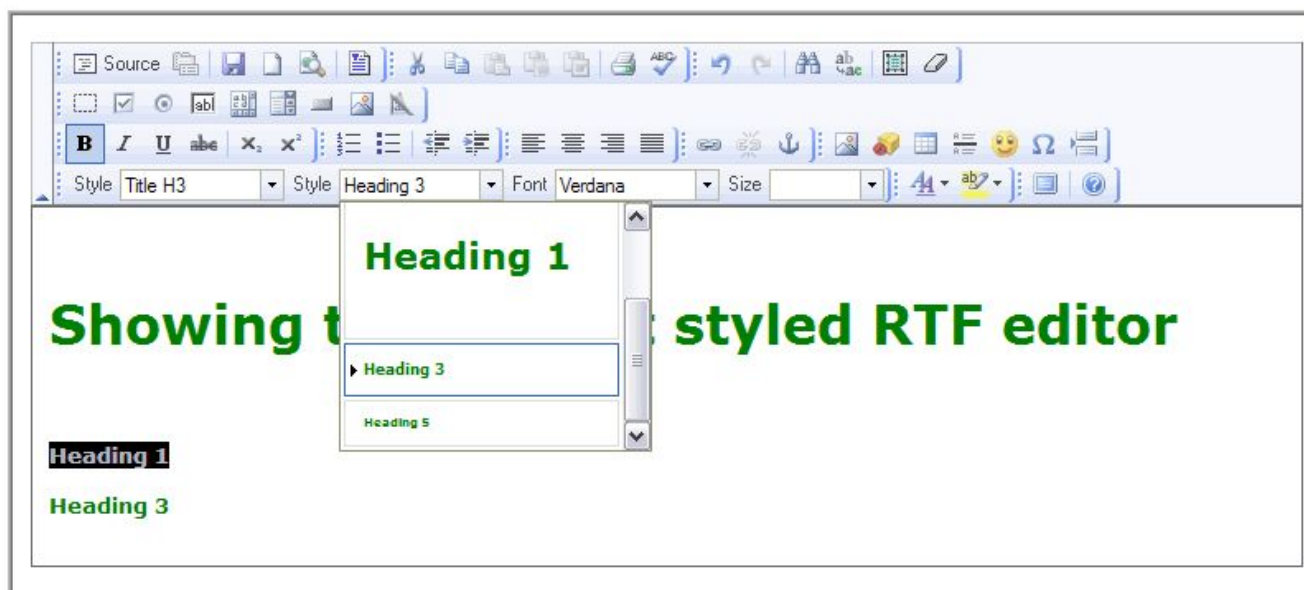
Apply OK Cancel

Path: PAGE / DOW\_RTF\_DEFAULT /

### Item Attributes

Enter the text for this item in the display area, using the editing controls as needed. Enter a name for the item, which appears as a heading for the text, as well as other attributes that describe the item.

Text



Display Name

Category

General

Description

# WYSIWYG Editor

- What are the concepts?
  - Opensource
  - Freeware
  - Javascript / CSS
  - Plug-in

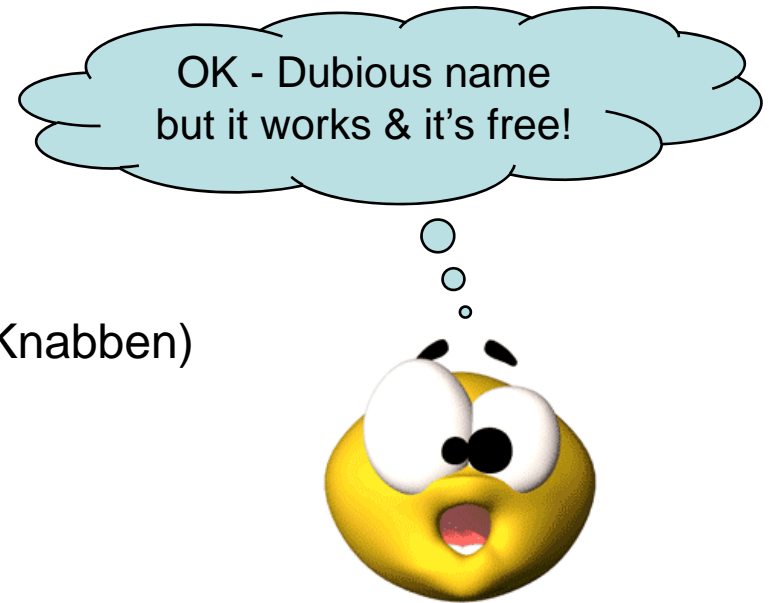


# WYSIWYG Editor

- The Source / Resources

- 3<sup>rd</sup> Party

- FCKeditor
    - FredCK.com (Frederico Caldeira Knabben)
    - <http://www.fckeditor.net/>
    - > <http://docs.fckeditor.net/> <



- Oracle

- Tech: "Oracle Application Server Portal 10g Release 2 (10.1.4) – Enhanced Rich Text Editor"
    - Tech: "OracleAS Portal 9.0.4.1 – Enhanced Rich Text Editor"
    - Ahhhem & OTN forums

```

<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>FCKEditor</title>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<meta name="robots" content="noindex, nofollow" />
<script type="text/javascript" src="/images/FCKEditor/fckeditor.js"></script>
</head>
<body>
<form name="form1" action="" method="post">
<script type="text/javascript">
<!--

// Try to increase the Editor textarea width
// We shall also later centre the editor due to the additional width
var eContainer = window.frameElement.parentElement.parentElement.parentElement;
if (eContainer.tagName == "TABLE")
    eContainer.width = "800";

// Get the calling URL to identify and adjust the css currently in context
// There should be two p_looplink ELs;
// the calling URL will be in [0] for a new item and [1] for a existing item
var cLoopLinkELs = window.parent.document.getElementsByTagName("p_looplink");
if (cLoopLinkELs[1] == null) {
    strCallURL = new String(cLoopLinkELs[0].value);
}
else {
    strCallURL = new String(cLoopLinkELs[1].value);
}

var oFCKEditor = new FCKEditor( "PTLFCKEditor"

oFCKEditor.BasePath = "/images/FCKEditor/";
oFCKEditor.Height = "100%";
// This sets the value of the editor text area to existing text item content
oFCKEditor.Value = parent.parent.document.addedit.p_text.value;
oFCKEditor.Config["CustomConfigurationsPath"] = "PTLconfig.js";
oFCKEditor.ToolbarSet = "Default";

// If caller is LatestNews or WLH then change editor css and bodyid accordingly
// This ensures that the in-editor css matches the calling content environn
if (strCallURL.indexOf("portal/DOW_RTf_WLHSTYLE") > 0) {
    oFCKEditor.Config["EditorAreaCSS"] = '/portal/page/portal/system/css/DOWwlh.css';
    oFCKEditor.Config["BodyId"] = 'WLHcontent';
    oFCKEditor.ToolbarSet = "Portal";
}
else if (strCallURL.indexOf("portal/SOMETHINGELSE") > 0) {
    oFCKEditor.Config["EditorAreaCSS"] = '/portal/page/portal/system/css/SOMEOTHERCSS';
    oFCKEditor.Config["BodyId"] = 'SOMEOTHERID';
};
// Else assume standard text item; handled by PTLconfig.js

oFCKEditor.Create();

// Attempt to centre the editor
window.parent.window.scrollTo(50,0);

// DO NOT EDIT - this function allows the edited content to return to Portal
function SaveSage()
{
    var field = FCKEditorAPI.GetInstance("PTLFCKEditor");
    parent.parent.document.addedit.p_text.value = field.GetXHTML( true );
}

//-->
</script>
</form>

```



```

// Get the calling URL to identify and adjust the css currently in context
// There should be two p_looplink ELs;
// the calling URL will be in [0] for a new item and [1] for a existing item
var cLoopLinkELs = window.parent.document.getElementsByName("p_looplink");
if (cLoopLinkELs[1] == null) {
    strCallURL = new String(cLoopLinkELs[0].value);
}
else {
    strCallURL = new String(cLoopLinkELs[1].value);
}

var oFCKEditor = new FCKEditor( "PTLFCKEditor" ) ;

oFCKEditor.BasePath = "/images/FCKEditor/";
oFCKEditor.Height = "100%" ;
// This sets the value of the editor text area to existing text item content
oFCKEditor.Value = parent.parent.document.addedit.p_text.value;
oFCKEditor.Config["CustomConfigurationsPath"] = "/images/FCKcustom/PTLconfig.js" ;
oFCKEditor.ToolbarSet = "Default" ;

// If caller is LatestNews or WLH then change editor css and bodyid accordingly
// This ensures that the in-editor css matches the calling content environment
if (strCallURL.indexOf("portal/DOW_RTf_WLHSTYLE") > 0) {
    oFCKEditor.Config["EditorAreaCSS"] = '/portal/page/portal/system/css/DOWwlh.css' ;
    oFCKEditor.Config["BodyId"] = 'WLHcontent' ;
    oFCKEditor.ToolbarSet = "Portal" ;
}
else if (strCallURL.indexOf("portal/SOMETHINGELSE") > 0) {
    oFCKEditor.Config["EditorAreaCSS"] = '/portal/page/portal/system/css/SOMEOTHERCSS' ;
    oFCKEditor.Config["BodyId"] = 'SOMEOTHERID' ;
};
// Else assume standard text item; handled by PTLconfig.js

oFCKEditor.Create() ;

// Attempt to centre the editor
window.parent.window.scrollTo(50,0);

// DO NOT EDIT - this function allows the edited content to return to Portal
function SaveSage()
{
    var field = FCKEditorAPI.GetInstance("PTLFCKEditor") ;
    parent.parent.document.addedit.p_text.value = field.GetXHTML( true ) ;
}

```

Home Builder Navigator Help

Edit Text: [No Display Name]

Apply OK Cancel

Path: PAGE / DOW\_RTF\_WLHSTYLE /

## Item Attributes

Enter the text for this item in the display area, using the editing controls as needed. Enter a name for the item, which appears as a heading for the text, as well as other attributes that describe the item.

Text

Source

Style

Normal

Normal (DIV)

Heading 1

Heading 3

Sh... LH styled RTF editor

Heading 1

Heading 3

Display Name

Category

General

Description

# WYSIWYG Editor

- Quick Gotchas
  - Portal versions
    - 9.0.4 vs 10.1.4
  - Tag Nesting
    - Is that really Heading 1 ??
  - Extensions / Dialogs vs Portal
    - Not all will work
  - FCK Updates
    - Fixes & enhancements





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## Sitemap

[Expand all](#) | [Collapse all](#) | [Expand Node](#)

- [Careers in water](#)
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    - [Proclamation](#)
    - [Publications](#)
  - [Water industry services](#)
- [Linkages](#)
- [Maps, data and atlases](#)
- [Planning the Water Future](#)



Portal Navigator - Windows Internet Explorer

http://enterprise.federation.net.au/portal/page/portal/TOPLEVELSITE/Navigator/SiteExplorer

Google

Portal Navigator

Home Builder Navigator Help

Personalize Account Info Logout

Page Groups Providers Database Objects

Oracle Application Server Portal

Portal Navigator

These are the page groups available to you. The Shared Objects page group contains objects that are available across all page groups.

Create New... [Page Group](#)

Find

Path: Page Groups

Type ▲ ▼	Name ▲ ▼	Actions	Creator ▲ ▼	Last Modified ▲ ▼ ?
Page Group	<a href="#">AMUSICTREE</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a> , <a href="#">Delete</a> , <a href="#">Export</a>	PORTAL	25-APR-2008 09:25 AM
Page Group	<a href="#">DEC FORUMS</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a> , <a href="#">Delete</a> , <a href="#">Export</a>	PORTAL	23-APR-2008 01:34 PM
Page Group	<a href="#">DOW BUILTINS</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a> , <a href="#">Delete</a> , <a href="#">Export</a>	PORTAL	25-APR-2008 02:12 PM
Page Group	<a href="#">DOW RTF DEFAULT</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a> , <a href="#">Delete</a> , <a href="#">Export</a>	PORTAL	25-APR-2008 01:43 PM
Page Group	<a href="#">DOW RTF WLHSTYLE</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a> , <a href="#">Delete</a> , <a href="#">Export</a>	PORTAL	25-APR-2008 01:47 PM
Page Group	<a href="#">DOW SITEMAP</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a> , <a href="#">Delete</a> , <a href="#">Export</a>	PORTAL	25-APR-2008 02:29 PM
Page Group	<a href="#">pdksample</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a> , <a href="#">Delete</a> , <a href="#">Export</a>	PORTAL	13-DEC-2007 04:10 PM
Page Group	<a href="#">Portal Design-Time Pages</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a>	PORTAL	09-AUG-2005 07:07 AM
Page Group	<a href="#">Portlet Repository</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a>	PORTAL	09-AUG-2005 07:07 AM
Page Group	<a href="#">system</a>	<a href="#">Properties</a> , <a href="#">View Root Page</a> , <a href="#">Edit Root Page</a> , <a href="#">Copy Root Page</a> , <a href="#">Convert Root Page to Template</a> , <a href="#">Delete</a> , <a href="#">Export</a>	PORTAL	25-APR-2008 03:16 PM
Shared Objects	<a href="#">Shared Objects</a>	<a href="#">Properties</a> , <a href="#">Export</a>	PORTAL	24-APR-2008 01:48 PM

Path: Page Groups

Internet 100%

# Sitemap

- What are the concepts?
  - Opensource
  - Freeware
  - Javascript / CSS
  - PLSQL driven integration



# Sitemap

- The Source / Resources
  - 3rd Party
    - JavaScript.CoolDev.Com
    - COOLjsTree
    - <http://javascript.cooldev.com/scripts/cooltree/>
  - Oracle
    - good old http.p



-- Generate a sitemap from the Portal repository integrated with COOLjsTree

PROCEDURE display\_sitemap

IS

cursor c\_sitemap is

select (rpad(f.siteid,9,0) + f.id) keyid,

• How

– Implementation / Integration... the general idea

• Categories or Perspectives driven

• COOLjsTree js & css

• The cool side

• The data / code side

• The Portal side – stitching it together

f.title page,

decode(t.name,'SitemapPathOnly','Y','N') nolink,

repeat

portal.wvpth\_api.get\_path('SITE'

, 'PAGE'

, f.siteid

, f.id)

'PAGE/'||portal.wvshr\_site\_db.get\_site\_name(f.siteid),

'portal/page/Sitemap'

) path,

lower(portal.wvpth\_api.get\_path('SITE'

, 'PAGE'

, f.siteid

, f.id)) sortorder

from portal.wvpth\_pages f,

portal.www\_topics t

where f.siteid > 10

-- only user defined folders

and f.name not in ('Content','Content\_Images','Content\_Images') -- exclude hosting pages

and f.type = 1

and f.ispublic <> 0

and f.topicid = t.id

and t.name <> 'SitemapHidden'

-- tagged as hidden

start with f.parentid = 0

connect by f.parentid = prior f.id

and f.siteid = prior f.siteid

and prior f.name not in ('Content','Content\_Images')

and prior f.ispublic <> 0

and prior t.name <> 'SitemapHidden'

order by 6;

vLast INTEGER := 0;

vChange INTEGER;

BEGIN

http.p('

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">

<link rel="stylesheet" type="text/css" media="screen" href="/portal/page/portal/system/css/DOWtree\_styles.css"



# Sitemap

- But I want to...
  - Configuration / Customisation
    - Placement
    - Extend eg expand all, expand node...
  - Quick Gotchas
    - see above - Customisation
  - ps ADF/JSF
    - Yes, but...



## Glossary Search

This glossary is a practical and easy-to-use guide to environmental terminology and vocabulary used in Western Australia. While every effort has been made to present accurate and up-to-date definitions, this glossary should be used as a resource, not as an authority. The environment is a complex and rapidly changing area, and it would be impossible to include every applicable term. Users should refer to standard texts and reference works for more detail.

Items 1 - 50 of 312 ➤

Jump to item:  ➤

### Abstraction

The permanent or temporary withdrawal of water from any source of supply, so that it is no longer part of the resources of the locality.

Reference: Porteous, A. (1996). Dictionary of Science and Technology. 2nd ed.  
Area of a wetland that is a permanently damp or damp near the surface for most of the year, without having standing water, except for flood events.

### Aerobic Organisms

Organisms living or active in the presence of oxygen.

Reference: Water and Rivers Commission (1998). Water Facts no. 1 : Water Words

### Agent

Whatever acts on a build-up of sediment.

Reference: British Standard BS 6100: Subsection 1.7

### Algae

A diverse group of aquatic organisms (including single cells) but some are large and complex.

### Dense Non-Aqueous Phase Liquid (DNAPL)

Non-aqueous substances which have an average density greater than water (specific gravity greater than 1) and therefore generally sink in water.

Reference: Department of Environment (DoE) (2001 onwards). Contaminated Sites Management Series

### Deoxygenation

Depletion of free oxygen.

Reference: Water and Rivers Commission (1998). Water Facts no. 1 : Water Words

### Desalination

The process of removing salt from saline water to make it less salty and to enable it to be used for drinking or other purposes. see [Salinity](#)

Reference: Water and Rivers Commission (1998). Water Facts no. 1 : Water Words

Items 1 - 50 of 312 ➤

water

Search

Find results that  ▼

Order By  ▼  ▼

Return a maximum of  results

http://enterprise.federation.net.au/portal/page/portal/DOW\_BUILTINS/Search\_Hacked

Search\_Hacked Live at the Basement

Page Group: [AMUSICTREE](#) Page: [The Very Best Of Fleetwood Mac](#) [02 Don't Stop.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Very Best Of Fleetwood Mac](#) [03 Dreams.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Very Best Of Fleetwood Mac](#) [04 Little Lies.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Very Best Of Fleetwood Mac](#) [05 Everywhere.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Very Best Of Fleetwood Mac](#) [06 Albatross.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Very Best Of Fleetwood Mac](#) [07 You Make Loving Fun.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Very Best Of Fleetwood Mac](#) [08 Rhiannon.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Very Best Of Fleetwood Mac](#) [09 Black Magic Woman.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 1](#) [01 Just Keep Walking.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 1](#) [02 The Loved One.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 1](#) [03 Stay Young.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 1](#) [04 The One Thing.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 1](#) [05 Don't Change.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 1](#) [06 To Look at You.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 2](#) [01 Suicide Blonde.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 2](#) [02 Disappear.mp3](#)

Page Group: [AMUSICTREE](#) Page: [The Years 1979-1997 Disc 2](#) [03 Bitter Tears.mp3](#)

Items 200 - 239 of 247

Jump to item:

Internet 100%

# Hacking Built-ins

- What is the concept?
  - Purely basic & dirty  
Javascript / CSS hacking



# Hacking Built-ins

- The Source / Resources
  - Leave Best Practice at the door please
  - Ingenuity / Parallel thinking
  - W3Schools?...  
Other js/css gurus
  - Google



Custom Search Edit Defaults

HTML Portlet Edit Defaults

### Title and Content

Enter the default title and HTML content for the portlet.

Display Name

HTML Portlet

☐ Display Portlet Header

Content

```
<!-- GOTO control for a normal custom search portlet -->
<script language="Javascript"
src="/portal/page/portal/system/scripts/DOWutilities.js"></script>
<SCRIPT TYPE="text/javascript">
<!-- Comment out script for old browsers
drawGoToControls
(document.SEARCH_DIRECTION_FORM_1137_PAGESEARCH_67107056,"txtGOTO");
/-->
</SCRIPT>

<!-- Normal custom search portlet duplicate controls -->
<script language="Javascript"
src="/portal/page/portal/system/scripts/DOWutilities.js"></script>
<TABLE WIDTH=100%><TR><TD ALIGN=RIGHT>
<SCRIPT TYPE="text/javascript">
<!-- Comment out script for old browsers
duplicateSearchControls(document.SEARCH_DIRECTION_FORM_1137_PAGESEARCH_67107056);
/-->
</SCRIPT>
</TD></TR></TABLE>
```

```
</TR>
<TR>
<TD>&nbsp;</TD>
</TR>
</TABLE>
<BR>
</DIV></TD></TR>
</TABLE>
<!-- ===== End Render Portlet ===== -->
</DIV></TD></TR>
<TR ALIGN="LEFT">
<TD valign="top" style="padding:6px
<TR><TD class="RegionHeaderColor" W
<script language="Javascript" src="
<SCRIPT TYPE="text/javascript">
<!-- Comment out script for old browsers
drawGoToControls(document.SEARCH_DIRECTION_FORM_1137_PAGESEARCH_67107056,"txtGOTO");
/-->
</SCRIPT>

<!-- Normal custom search portlet duplicate controls -->
<script language="Javascript" src="/portal/page/portal/system/scripts/DOWutilities.js"></script>
<TABLE WIDTH=100%><TR><TD ALIGN=RIGHT>
<SCRIPT TYPE="text/javascript">
<!-- Comment out script for old browsers
duplicateSearchControls(document.SEARCH_DIRECTION_FORM_1137_PAGESEARCH_67107056);
/-->
</SCRIPT>
</TD></TR></TABLE>
```

# Hacking Built-ins

- But I want to...
  - ??? the Possibilities...
    - Minor changes to built-ins
    - Simple/Minor form element changes
      - Size of text box
  - Same technique
    - Find a hook & exploit it; mimic; override



# Hacking Built-ins

- Quick Gotchas
  - Don't look sideways at it!





# Date Picker

- What is it?
  - Calendar Popup
    - You mean Portal doesn't have one?





## Error

Internal error ([WWC-00006](#))

An unexpected error occurred: ORA-01843: not a valid month (WWV-16016)

# Date Picker

- What, Where, How
  - Concept
    - 3<sup>rd</sup> Party Component
    - HTML form & js hack
  - Source / Resources
    - nsftools DatePicker
    - nsftools.com (Julian Robichaux)
    - <http://www.nsftools.com/tips/NotesTips.htm#datepicker>
  - How
    - Download component js / css
    - Integrate it to your Form component



# So what are you saying?

- The underlying messages
  - Not all that Hard
  - Opensource & Freeware (Community)
  - Javascript / CSS
    - Supported (3rd Party)
    - Hack...errrr.. Integrate with Portal
  - PLSQL to drive plug-ins



# and...

- Look around; what else is there...
  - ULTRA quick & dirty sitemap (Portal's own)
  - COOL Menu & other components
  - Scriptaculous
  - APEX
  - and Sylohe (Sylohe Applications)
    - Forums app
    - Calendar
    - FAQs



http://enterprise.federation.net.au/portal/page/portal/DEC\_FORUMS

DEC FORUMS

Oracle Application Server  
Portal

DEC FORUMS

Home Help

Edit Personalize Account Info Logout

### Latest IRIS Posts

**Post:** [RE : A Reply to a reply by Portal](#)  
on: 25-Apr-2008 15:47 by: Portal  
in: IRIS >> IRIS Forum 2

**Post:** [RE : A Post by Portal](#)  
on: 25-Apr-2008 15:47 by: Portal  
in: IRIS >> IRIS Forum 2

**Post:** [A Post by Portal](#)  
on: 25-Apr-2008 15:46 by: Portal  
in: IRIS >> IRIS Forum 2

**Post:** [You guessed it - Automobiles](#)  
on: 25-Apr-2008 15:44 by: Poster1  
in: IRIS >> IRIS Forum 1

**Post:** [Trains](#)  
on: 25-Apr-2008 15:43 by: Poster1  
in: IRIS >> IRIS Forum 1

**Post:** [RE : Planes](#)  
on: 25-Apr-2008 15:43 by: Poster1  
in: IRIS >> IRIS Forum 1

**Post:** [Planes](#)  
on: 25-Apr-2008 15:42 by: Poster1  
in: IRIS >> IRIS Forum 1

### Most Popular IRIS Threads

**Thread:** [A Post by Portal](#)  
in: IRIS >> IRIS Forum 2  
Total Posts: 2 Latest: 25-Apr-2008 15:47

**Thread:** [Planes](#)  
in: IRIS >> IRIS Forum 1  
Total Posts: 1 Latest: 25-Apr-2008 15:43

**Thread:** [You guessed it - Automobiles](#)  
in: IRIS >> IRIS Forum 1  
Total Posts: 0 Latest: 25-Apr-2008 15:44

**Thread:** [Trains](#)  
in: IRIS >> IRIS Forum 1  
Total Posts: 0 Latest: 25-Apr-2008 15:43

Done

Internet 100%

# Thankyou/s & References

- Thankyou
  - Dept of Water WA
  - Dept of Environment & Conservation WA
- Notable References
  - FredCK.com (Frederico Caldeira Knabben)
  - Oracle (Oracle Technology Network)
  - JavaScript.CoolDev.Com
  - nsftools.com (Julian Robichaux )





## **SAGE Computing Services**

Customised Oracle Training Workshops and Consulting



Presentations are available from our website:

*<http://www.sagecomputing.com.au>*

*[enquiries@sagecomputing.com.au](mailto:enquiries@sagecomputing.com.au)*

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