



Welcome to Oracle10g Application Express

A brief introduction to developing
database driven intranet and internet
applications

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SKILLBUILDERS



What is Application Express ?

- Application Express is:
 - a html page generator
 - Web site development tool
 - AND ... A GUI Oracle database development tool
- Can be downloaded as a standalone from Oracle10g SE and EE download pages
- An older release is available free in the Oracle Express Edition freeware



Where do I get Application Express?

- If you are using Oracle10g – you can download the software at:
 - http://www.oracle.com/technology/products/database/application_express/download.html
 - Installation Guide is available when you unzip the V3.0 files
 - This link references a tutorial for installing V2.2 – but it is worth a look to simplify the process & improve understanding
<http://www.oracle.com/technology/obe/apex/apexinst/apexinst.htm>
- If you want to use the Oracle Express Edition version, you can get info & software at:
 - <http://www.oracle.com/technology/products/database/xe/index.html>



Oracle's Application Express Test Site

- If you do not have the ability to install Application Express – you can still learn it!
- Oracle provides a test workspace for you on their site – apply at: <http://apex.oracle.com/i/index.html>
 - You have to apply for the workspace (sign up for an account)
 - They will email you authorization (login info)
 - Once you sign on you can change password they assign
 - NO COMMERCIAL PRODUCTION allowed
 - They are currently at Application Express V3.0



Administrator Functions for Apex

- Once Application Express is installed, APEX admin id will need to sign in and establish a working environment for Developers:
 - As part of installation the Apex Administrator logs in to:
http://<hostname>:7777/pls/apex/apex_admin
 - creates what are known as Workspaces – this is a work area associated with a particular schema
 - Logs onto new workspace and creates an Administrator for the workspace
 - Workspace Admin logs in <http://<hostname>:7777/pls/apex> and creates Development users and End users (if needed)
 - Developer logs and creates applications!
 - An application represents a collection of pages that reference and display our data



Our Focus In this Presentation

- Developer logs in
 - Use SQL tools to work with Oracle Objects
 - We will create and populate a table
 - Use Application Builder:
 - to create an application from scratch referencing the table we just built
 - to improve our applications by including Images and Static files
 - to create an application from a spreadsheet



Log in as Developer

Application Express Login - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4550:1:3795331896872908

Getting Started Latest Headlines

ORACLE Application Express

Login

Enter Application Express workspace and credentials.

Workspace

Username

Password

Login

[Click here to learn how to get started](#)

Tasks

- Reset Password
- Find My Workspace
- Product Page

language: en-us

Application Express

Copyright © 1999, 2007, Oracle. All rights reserved.

Done

Apex generates url with /f?...
application id, page & session id

I directed my browser window to:
<http://localhost:7777/pls/apex>

I log in to the **ougdemo** workspace
as a developer id **OUGDev**



Application Express Home Page

Oracle Application Express - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4500:1000:878859908

Getting Started Latest Headlines

ORACLE Application Express Logout Help

Home Application Builder SQL Workshop Utilities

Home

Application Builder SQL Workshop Utilities

Administration

- Administration
 - Monitor Activity
 - Change Password
 - About Application Express

Migrations

- Application Migrations

Workspace Schemas

- OUG_APEX_DEMO

Links

- Oracle Technology Network
- Discussion Forum
- User's Guide

Language: en-us Application Express 3.0.0.00.20

Workspace: OUGDEMO User: OUGDEV Copyright © 1999, 2007, Oracle. All rights reserved.

Done

3 major functions

Sidebar menu lets you access admin tasks for your id

Footer has info about you & the product version



SQL Workshop

SQL - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4500:3002:878859908...

Getting Started Latest Headlines

ORACLE Application Express

Logout Help

Home Application Builder **SQL Workshop** Utilities

Home > SQL Workshop

Object Browser SQL Commands SQL Scripts Query Builder

From the Home page, click on **SQL Workshop** icon to get here. We could Create & Load a table with the **Object Browser** but for speed we will use a **SQL Script**

Language: en-us Application Express 3.0.0.0.20
Workspace: OUGDEMO User: OUGDEV Copyright © 1999, 2007, Oracle. All rights reserved.
Done



SQL - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4500:3002:890353913

Getting Started Latest Headlines

ORACLE Application Express

Logout Help

Home Application Builder SQL Workshop Utilities

Home > SQL Workshop

Object Browser SQL Commands SQL Scripts SQL Worksheet

Create Upload View Export Import

I can jump to the Upload menu using the arrow menu

Language: en-us Application Express 3.0.0.00.20

Workspace: OUGDEMO User: OUGDEV Copyright © 1999, 2007, Oracle. All rights reserved.

http://localhost:7777/pls/apex/f?p=4500:1017:890353913089991::NO:1017::

I can jump directly to the **Upload** function using the drop down arrow menu



Upload a Script

Upload Script - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4500:1017:8903539130

Getting Started Latest Headlines

ORACLE Application Express

Home Application Builder **SQL Workshop**

Home > SQL Workshop > SQL Scripts > **Upload Script**

Upload Script Cancel Upload

* File C:\orascrpts\Create_member.sql Browse...

Script Name Create_member_table

File Character Set Unicode UTF-8

Language: en-us

Workspace: OUGDEMO User: OUGDEV

Done

Application Express 3.0.0.00.20

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1. Browse for the .sql file I want, name it and click on **Upload**


2. Result of upload. Click on the script icon to edit and run it

Home > SQL Workshop > **SQL Scripts**

Script uploaded. You may click on the script to edit or run it.

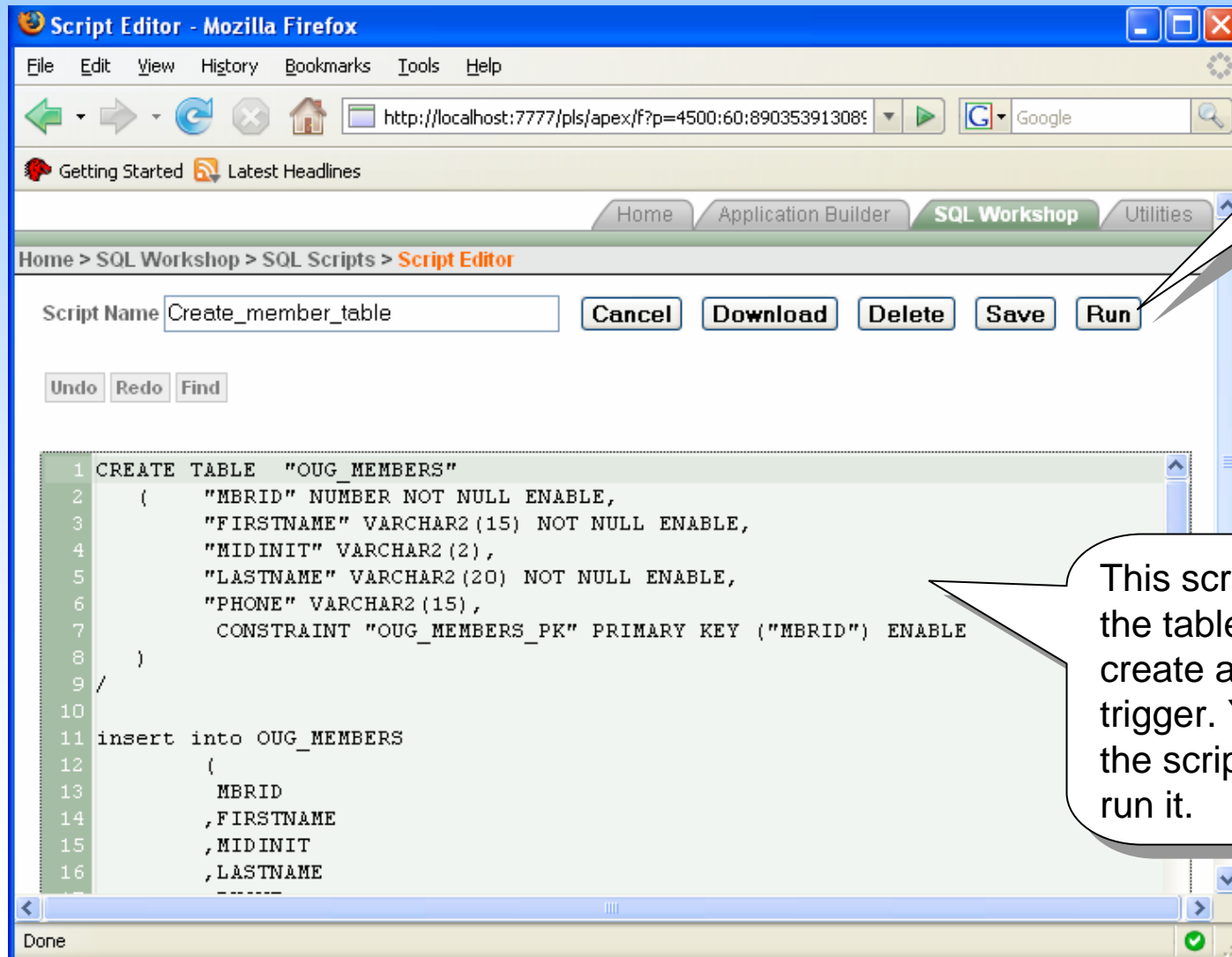
Script Owner OUGDEV View Icons Display 15

☐ Show Results

 Create_member_table



Run the Script



Use **Run** to execute the script

This script will build the table, insert data, create a sequence & a trigger. You may edit the script before you run it.



Check Script execution

Manage Script Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/www_flow.accept

Getting Started Latest Headlines


ORACLE Application Express Logout Help

Home Application Builder SQL Workshop Utilities

SQL Workshop > SQL Scripts > Manage Script Results

Selected output deleted.

Script Run By View Display Go De

<input type="checkbox"/>	Script	Run By	Started	Elapsed	Status	Statements	Bytes	View Results
<input type="checkbox"/>	Create member table	OUGDEV	17 seconds ago	0.56	Complete	8 of 8	0	

row(s) 1 - 1 of

Done

Refresh and I see that 8 of 8 statements ran so I want to View Results



Confirm Table Created & Loaded

Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4500:1225:890353913C

Getting Started Latest Headlines

ORACLE Application Express

Home Application Builder SQL

Home > SQL Workshop > SQL Scripts > Results

Script: Create_member_table Status: Complete

View: ☐ Detail ☒ Summary Display 15

Number	Elapsed	Statement	Feedback	Rows
1	0.19	CREATE TABLE "OUG_MEMBERS" ("MBRID" NUMBER NOT NULL EN	Table created.	0
2	0.03	insert into OUG_MEMBERS (MBRID	1 row(s) inserted.	1
3	0.01	insert into OUG_MEMBERS (MBRID	1 row(s) inserted.	1
4	0.01	insert into OUG_MEMBERS (MBRID	1 row(s) inserted.	1
5	0.01	insert into OUG_MEMBERS (MBRID	1 row(s) inserted.	1
6	0.03	CREATE SEQUENCE "OUG_MEMBERS_SEQ" MINVALUE 1 MAXVALUE 999	Sequence created.	0
7	0.09	CREATE OR REPLACE TRIGGER "BI_OUG_MEMBERS" before insert	Trigger created.	0
8	0.03	ALTER TRIGGER "BI_OUG_MEMBERS" ENABLE	Trigger altered.	0
row(s) 1 - 8 of 8				

Statements Processed 8
Successful 8
With Errors 0

Done

Looks good – we can look at the table with the **Object Browser**.
Click on **SQL Workshop** then **Object Browser**



Object Browser - Tables

The screenshot shows the Oracle Application Express interface in a Mozilla Firefox browser. The page title is "Object Browser - Mozilla Firefox". The address bar shows the URL "http://localhost:7777/pls/apex/f?p=4500:1001:890353913C". The page header includes the Oracle logo and "Application Express". The navigation tabs are "Home", "Application Builder", "SQL Workshop", and "Utilities". The breadcrumb trail is "Home > SQL Workshop > Object Browser". The "Schema" dropdown is set to "OUG_APEX_DEMO" and the "Component" dropdown is set to "Object Browser". On the left, a list of tables is shown, with "OUG_MEMBERS" selected. The main area displays the "OUG_MEMBERS" table definition. It includes tabs for "Table", "Data", "Indexes", "Model", "Constraints", "Grants", "Statistics", "UI Defaults", and "Triggers". The "Table" tab is active, showing a table with columns: MBRID, FIRSTNAME, MIDINIT, LASTNAME, and PHONE. The table has a primary key on MBRID. The "Data" tab is also visible, showing a list of data rows. The "Constraints" tab is also visible, showing a list of constraints. The "Grants" tab is also visible, showing a list of grants. The "Statistics" tab is also visible, showing a list of statistics. The "UI Defaults" tab is also visible, showing a list of UI defaults. The "Triggers" tab is also visible, showing a list of triggers. The status bar at the bottom says "Done".

Object Browser - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4500:1001:890353913C

Getting Started Latest Headlines

ORACLE Application Express

Logout Help

Home Application Builder SQL Workshop Utilities

Home > SQL Workshop > Object Browser

Schema OUG_APEX_DEMO Component Object Browser

Tables

DEMO_CUSTOMERS

DEMO_IMAGES

DEMO_ORDERS

DEMO_ORDER_ITEMS

DEMO_PAGE_HIERARCHY

DEMO_PRODUCT_INFO

DEMO_STATES

DEMO_USERS

DEPT

EMP

OUG_MEMBERS

OUG_MEMBERS

Create

Table Data Indexes Model Constraints Grants Statistics UI Defaults Triggers

Add Column Modify Column Rename Column Drop Column Rename Copy Drop

Column Name	Data Type	Nullable	Default	Primary Key
MBRID	NUMBER	No	-	1
FIRSTNAME	VARCHAR2(15)	No	-	-
MIDINIT	VARCHAR2(2)	Yes	-	-
LASTNAME	VARCHAR2(20)	No	-	-
PHONE	VARCHAR2(15)	Yes	-	-

1 - 5

Download

Done

I selected **OUG_MEMBERS** and now the table definition shows. I can see the data, constraints, triggers, etc. and modify them using these tabs.



Access Table Data

The screenshot shows the Oracle Application Express Object Browser interface in a Mozilla Firefox browser. The browser window title is "Object Browser - Mozilla Firefox". The address bar shows the URL "http://localhost:7777/pls/apex/f?p=4500:1001:8903539130...". The page header includes the Oracle logo and "Application Express". The navigation tabs are "Home", "Application Builder", "SQL Workshop", and "Utilities". The breadcrumb trail is "Home > SQL Workshop > Object Browser". The "Schema" dropdown is set to "OUG_APEX_DEMO" and the "Component" dropdown is set to "Object Browser". On the left, a list of tables is shown, with "OUG_MEMBERS" selected. The main area displays the "OUG_MEMBERS" table with tabs for "Table", "Data", "Indexes", "Model", "Constraints", "Grants", "Statistics", "UI Defaults", and "Triggers". The "Data" tab is active, showing a table with columns: EDIT, MBRID, FIRSTNAME, M, INIT, LASTNAME, and PHONE. There are four rows of data. A callout bubble points to the pencil icon in the first row, indicating that rows can be edited. Below the table, there are buttons for "Query", "Count Rows", and "Insert Row". A "Download" link is also visible.

EDIT	MBRID	FIRSTNAME	M	INIT	LASTNAME	PHONE
	1	John	Q		Public	401.783.6172
	2	Dave	G.		son	
	3	Gary	-		Be	
	4	Karen	A		Hackett	

row(s) 1

Download

javascript:ob_PPR_TAB('f?p=4500:TABLE_DATA:890353913089991:T:NO:RP::')

I can edit any one of these rows by clicking on the pencil icon or I can insert a row. Because I created a sequence and trigger I can leave mbrld empty on an insert. Apex would get the new mbrld from the sequence.



Create Application

I navigate to **Home** (using the breadcrumb menu), then use drop down to get to **Create Application**



Name the Application

Create Application - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:3000:890353913C

Google

Getting Started Latest Headlines

ACLE Application Express Logout Help

Home Application Builder SQL Workshop Utilities

Create Application

Method

Name

Pages

Tabs

Shared Components

Attributes

User Interface

Confirm

Create Application

Cancel < Previous Next >

Enter an application name and an unique application ID. Then, select an application creation method and a schema.

* Name OUG Demonstration

* Application 105

Create Application: ☒ From scratch ☐ Based on existing application design model

Schema OUG_APEX_DEMO

Done

We need to name this application and identify the schema to be used. Then **NEXT**...

We could have built an application from an Excel spreadsheet or any csv file.



Create Pages in App

Create Application - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:3001:89035391308

Getting Started Latest Headlines

ORACLE Application Express Logout Help

Home Application Builder SQL Workshop Utilities

> Create Application

Method

Name

Pages

Shared Components

Attributes

User Interface

Confirm

Create Application

Cancel < Previous Next > Create

Add pages to your application by selecting a page type and clicking **Add Page**.

Add Page

Select Page Type:

☐ Blank ☐ Report ☐ Form ☐ Tabular Form ☒ Report and Form

Action: Add a report with an edit form on a second page

Table Name: OUG_MEMBERS

☐ Include Analysis Pages

Done

I need to add at least one page. I need to say what kind of page.

I choose to create a **Report and Form** on my **OUG_MEMBERS** table.

There is help text available if we scroll right



After Pages Added

Method

Name

Pages

Tabs

Add Components

Attributes

User Interface

Confirm

Create Application

Cancel < Previous Next > Create

Page	Page Name	Page Type	Source Type	Source	Delete
1	OUG_MEMBERS	Report	Table	OUG_MEMBERS	✖
2	OUG_MEMBERS	Form	Table	OUG_MEMBERS	✖

Add Page

Select Page Type:

☐ Blank ☐ Report ☐ Form ☐ Tabular Form ☒ Report and Form

Action: Add a report with an edit form on a second page

Subordinate to Page: - Top Level Page -

Table Name:

Done

Now we have automatically named pages in our application. We could add more but we will click on **Next** to proceed.



Build App - Want Tabs?

We are asking for one level of tabs. Click **Next** to go on.



Build App – Share Components?

The screenshot shows a Mozilla Firefox browser window titled 'Create Application - Mozilla Firefox'. The address bar shows 'http://localhost:7777/pls/apex/www_flow.accept'. The page displays the 'ACLE Application Express' interface with tabs for 'Home', 'Application Builder', 'SQL Workshop', and 'Utilities'. The 'Application Builder' tab is active, showing a 'Create Application' wizard. The wizard has a left sidebar with steps: Method, Name, Pages, Tabs, **ed Components** (highlighted), Attributes, User Interface, and Confirm. The main content area is titled 'Create Application' and contains the following text: 'Shared components are common application elements that can be displayed or applied across multiple pages in an application. To save time or maintain consistency between applications, it is possible to copy the shared components from an existing application.' Below this text is a section titled 'Copy Shared Components from Another Application:' with two radio buttons: 'Yes' and 'No'. The 'No' radio button is selected. At the bottom of the wizard are buttons for 'Cancel', '< Previous', and 'Next >'. A speech bubble points to the 'No' radio button.

You can share components (files, images, lists etc) among applications – do we want to? Not this time since it's our first application. Click **Next** to move on.



Security processing?

Create Application - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:3020:89035391308

Google

Getting Started Latest Headlines

ACLE Application Express Logout Help

Home Application Builder SQL Workshop Utilities

Create Application

Method

Name

Pages

Tabs

Components

Attributes

User Interface

Confirm

Create Application

Cancel < Previous Next >

Authentication Scheme:

☒ Application Express ☐ No Authentication ☐ Database Account

Language:

English (United States) (en-us)

User Language Preference Derived From:

Use Application Primary Language

Done

Leave it **Application Express**. You can use none or a database account. With Application Express Authentication, you can use a PL/SQL function to check login against your own user table instead of Apex users. Click **Next** to proceed.



Pick your theme

Create Application - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:3004:89035391308

Getting Started Latest Headlines

ORACLE Application Express Logout Help

Home Application Builder SQL Workshop Utilities

Home > Create Application

Method
Name
Pages
Tabs
Shared Components
Attributes
User Interface
Confirm

Create Application Cancel < Previous Next

Select a theme:

☒ Theme 1 ☐ Theme 2 ☐ Theme 3

☐ Theme 4 ☐ Theme 5 ☐ Theme 6

☐ Theme 7 ☐ Theme 8 ☐ Theme 9

What do you want your application to look like? When you get good at this, you can modify these themes or build your own! For now let's look like Oracle... select **Theme 1** and click **Next**

http://localhost:7777/pls/apex/f?p=4000:3005:890353913089991:::THEME_ID:2



Confirm and CREATE

Create Application - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:3005:89035391308

Getting Started Latest Headlines

Home Application Builder SQL Workshop Utilities

Create Application

Method
Name
Pages
Tabs
Related Components
Attributes
User Interface
Confirm


Create Application Cancel < Previous Create

You have requested to create an application with the following attributes. Please confirm your selections.

Application	105
Name	OUG Demonstration
Parsing Schema	OUG_APEX_DEMO
Default Language	en-us
Tabs	One Level of Tabs
Default Authentication Scheme	Application Express Authentication

1

UI Theme



☒ Save this definition as a design model for reuse

Done



Routed to Edit Application

Application Builder - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:1:89035391308999

Getting Started Latest Headlines

Home Application Builder SQL Workshop Guides

Application Builder > Application 105

Page 1

Application created successfully.

Application: 105 - OUG Demonstration

Run Application Supporting Objects Shared Components Export / Import

Page View Icons Display 15 Go Create Page >

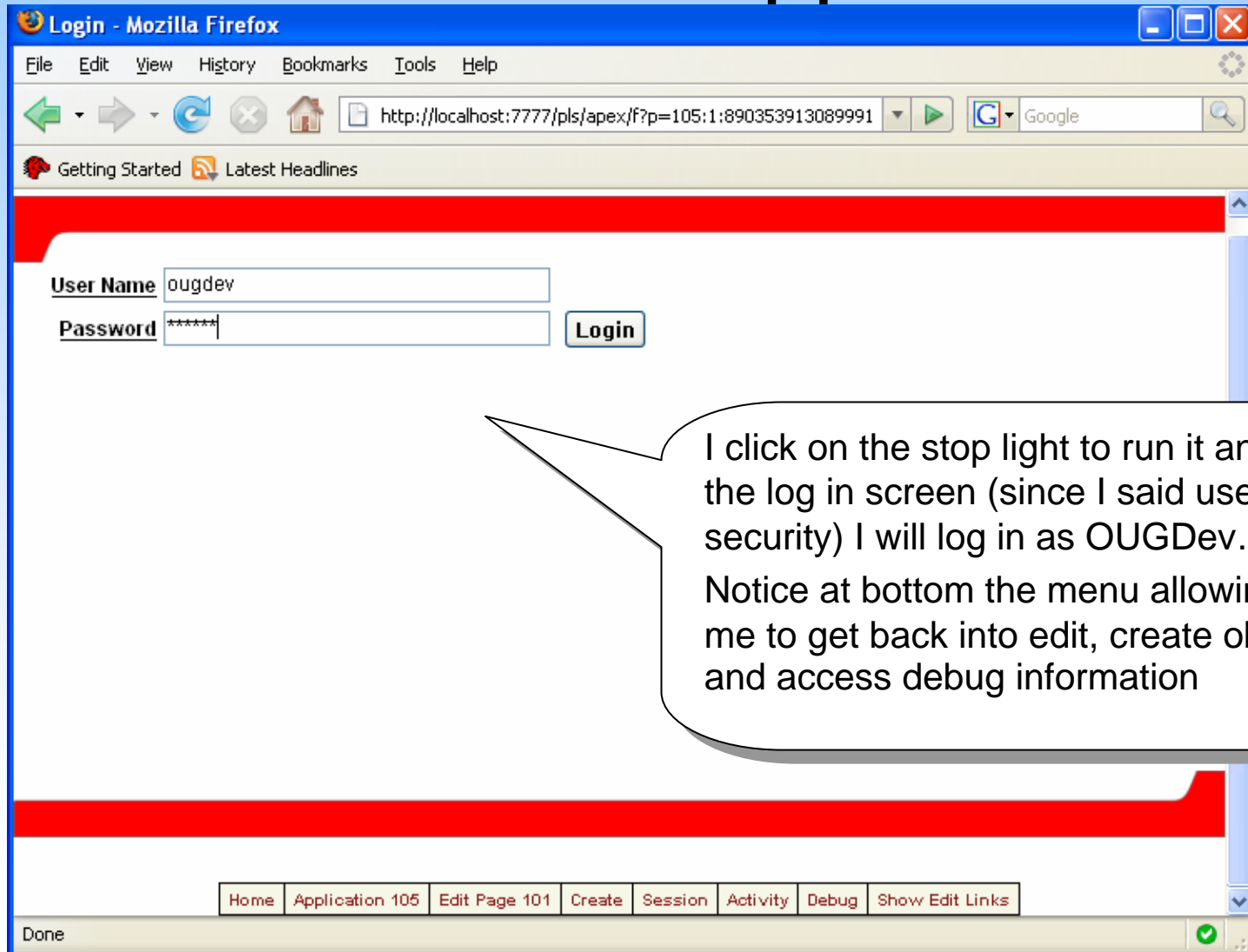
1 - OUG MEMBERS 2 - OUG MEMBERS 101 - Login

Done

This is the home page for editing the new application. 3 pages show: report, form and login since we asked for security.



Test RUN the Application





See Report Page

Screenshot of a web application titled "OUG_MEMBERS" running in Mozilla Firefox. The browser address bar shows the URL: `http://localhost:7777/pls/apex/f?p=105:1:890353913089991`. The application interface includes a "Logout" link and a "OUG_MEMBERS" tab. Below the tab, there is a "OUG_MEMBERS" section with a "Reset" button and a "Create" button. A search bar is present with the text "Search" and a "Display" dropdown set to "15", followed by a "Go" button. Below the search bar is a table with the following data:

	Firstname	Midinit	Lastname	Phone
	Dave	G.	Anderson	401.783.6172
	Gary		Belke	401.783.6172
	John	Q	Public	401.783.6172
	Karen	A	Hackett	401.783.6172

Below the table is a "Spread Sheet" link and a "1 - 4" indicator. At the bottom of the application, there is a navigation bar with links: Home, Application 105, Edit Page 1, Create, Session, Activity, Debug, and Show Edit. The status bar at the bottom of the browser shows "Done".

And Voila! Here's my report of all rows in the OUG_Members table... I can edit rows using the pencil icon, I can insert a row using the **Create** button. Because we used the create wizard, we automatically have column sorting, search capabilities and can adjust the number of rows we display! Reset button will undo any changes to the display we make using those options.



See Detail Page

OUG_MEMBERS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=105:2:890353913089991

Getting Started Latest Headlines

Logout

OUG_MEMBERS

OUG_MEMBERS > OUG_MEMBERS

OUG_MEMBERS

Cancel Delete Apply Changes

Firstname David

Midinit G.

Lastname Anderson

Phone 401.783.6172

OUGDEV

Home Application 105 Edit Page 2 Create Session Activity Debug Show Edit Links

Done

Click on the edit icon in front of Dave and I can get to detail level on Dave and make the name David. Click **Apply Changes** to return to the Report page. Notice I can delete the row if I want. As developer, I can edit this page and take that button away if I don't want users to delete rows.



Report After change

Screenshot of a web application titled "OUG_MEMBERS" in Mozilla Firefox. The browser address bar shows the URL: `http://localhost:7777/pls/apex/f?p=105:1:890353913089991`. The application interface includes a "Logout" link, a "OUG_MEMBERS" header, and a "Action Processed." message.

The main section displays a table of members with the following data:

	Firstname	Midinit	Lastname	Phone
	David	G.	Anderson	401.783.6172
	Gary		Belke	401.783.6172
	John	Q	Public	401.783.6172
	Karen	A	Hackett	401.783.6172

Below the table is a "Spread Sheet" link. The page number "1 - 4" is displayed. At the bottom, a navigation bar includes links: Home, Application 105, Edit Page 1, Create, Session, Activity, Debug, and Show Edit Links. The status bar at the bottom shows "Done".

A speech bubble points to the "Edit Page 1" link in the navigation bar, containing the text:

Report reflects the fixed name "David". I can get to edit on this page by using the menu below to **Edit page 1**. If I wanted to edit other pieces of the application, I would just click on **Edit Application**. I will click on **Edit Page 1**



Edit Page Window

Page Definition - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:4150:890353913089991::NO:1,4150:FB_FLOW_ID,FE

Getting Started Latest Headlines

Home Application Builder SQL Workshop Utilities

Home > Application Builder > Application 105 > Page 1

Page 1

Last Updated: 4 minutes ago
Page Comments: 0

Page Rendering

Page

Page Name: OUG_MEMBERS
Title: OUG_MEMBERS
Header Text:
HTML Header:
HTML Body:
Help Text: No help is available for this
Page Group:

Template: Application default
Footer Text:
Build Option:
Authorization: No
Cached: No

Regions

Display Point: Page Template Body (3)
10 OUG_MEMBERS Report

Display Point: Region Position 01
1 Breadcrumbs Breadcrumb Entry

Buttons

Region: OUG_MEMBERS
10 Create Redirect to page 2
10 Reset Submit as "RESET"
Item Submit as "Go"

Items

Region: OUG_MEMBERS

Page Processing

Computations

Validations

Processes

After Submit
10 Reset Pagination
20 Reset report search

Reset Pagination
Clear Cache for Items (ITEM,ITEM,ITEM)

Conditional
Conditional

Branches

After Processing
10 Go To Page 1 Unconditional

Shared Components

Tabs

Tab Set: TS1
OUG_MEMBERS

Lists of Values

Static Report Row Per Page

Breadcrumbs

Breadcrumb

Lists

Theme

1. Red

Done

For example, I can change things about the report columns by clicking on **Report**



Major Components of Page Edit

- The Page Edit Window has 3 major sections
 - Page Rendering column contains the:
 - page attributes
 - regions (sections of the displayed page)
 - items on the page such as buttons and fields
 - Processes unique to those items
 - Page Processing gives you access to:
 - Computations needed during the processing of this page
 - Validations on items or the entire page
 - Processes that occur for this page including branches
 - Shared components used on the page including tabs, breadcrumb items, lists, page themes, etc.



Notes about Page Edit

- Page Attributes accessed by clicking on page name
 - Name and template info, html header and footer
 - Security
 - In page attributes, scroll down for security (or click on the tab) – if you make a page PUBLIC – it will not ask for login to view it
- Regions are areas of the window – the template associated with the theme assigns characteristics – you can alter templates
- Buttons can be added, deleted or modified
- Items are variables on the page – you can hide, etc.
 - named p#_itemname
 - Can be referenced across the application (SESSION management)



Report Edit Window

Report Attributes - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:420:890353913089991::NO:420,960,4651:P420_REG

Getting Started Latest Headlines

Home Application Builder SQL Wor

Home > Application Builder > Application 105 > Page 1 > Report Attributes

Page 1

Region Definition Report Attributes Print Attributes

Region Name: OUG_MEMBERS Cancel Apply Changes

Show All Column Attributes Layout and Pagination Sorting Messages Report Export Break Formatting External Processing

Column Attributes

Headings Type: ☐ Column Names ☐ Column Names (InitCap) ☒ Custom ☐ PL/SQL ☐ None

Alias	Link	Edit	Heading	Column Alignment	Heading Alignment	Show	Sum	Sort	Sort Sequence
MBRID	✓	✓	 	right	center	✓	<input type="checkbox"/>	✓	-
FIRSTNAME		✓	Firstname	left	center	✓	<input type="checkbox"/>	✓	1
MIDINIT		✓	Midinit	left	center	✓	<input type="checkbox"/>	✓	
LASTNAME		✓	Lastname	left	center	✓	<input type="checkbox"/>	✓	-
PHONE		✓	Phone	left	center	✓	<input type="checkbox"/>	✓	-

When moving the last column further down, it will show up as the first column of your report.
When moving the first column up, it will be moved to the end of your report.

Layout and Pagination

Report Template: template: 1. Standard

[HTML] [Look 1] [Look 2] [Look 3] [Look 4] [CSV] [XML]

Show Null Values as:

Done

To get here from Page edit, I clicked on the label "Report" to the right of the report name (OUG Members")

Use report attribute control the appears report. You can use attributes to define headers, report pagination, sorting, formatting.

To define column a the edit icon adja

There are many things I can do on this window but at the simplest level, I can change the column headings, re-order them, hide them, etc. I will change the titles and Apply Changes.



Run Altered Report

Screenshot of a web application titled "OUG_MEMBERS" running in Mozilla Firefox. The browser address bar shows a local URL: `http://localhost:7777/pls/apex/f?p=105:1:890353913089991:::`.

The application interface includes a "Logout" link and a red header bar with the text "OUG_MEMBERS". Below the header, there is a section titled "OUG_MEMBERS" with "Reset" and "Create" buttons. A search bar is present with a "Display" dropdown set to "15" and a "Go" button.

A table displays member information:

	First Name	Middle	Last Name	Phone
	David	G.	Anderson	401.783.6172
	Gary		Belke	401.783.6172
	John	Q.	Public	401.783.6172
	Karen	A.	Hackett	401.783.6172

Below the table, there is a link labeled "Spread Sheet" and a pagination indicator "1 - 4".

The footer of the application shows a red bar with the text "OUGDEV" and a navigation bar with links: Home, Application 105, Edit Page 1, Create, Session, Activity, Debug, and Show.

The status bar at the bottom of the browser window shows "Done".

After I applied my changes, I returned to the Edit Page window. I click on the Stoplight or **Run** button to see my changes to the column headers.

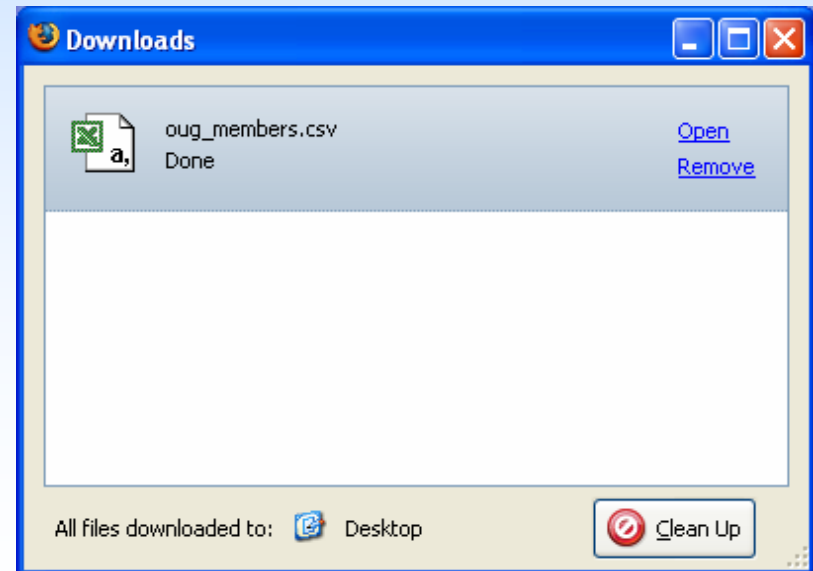
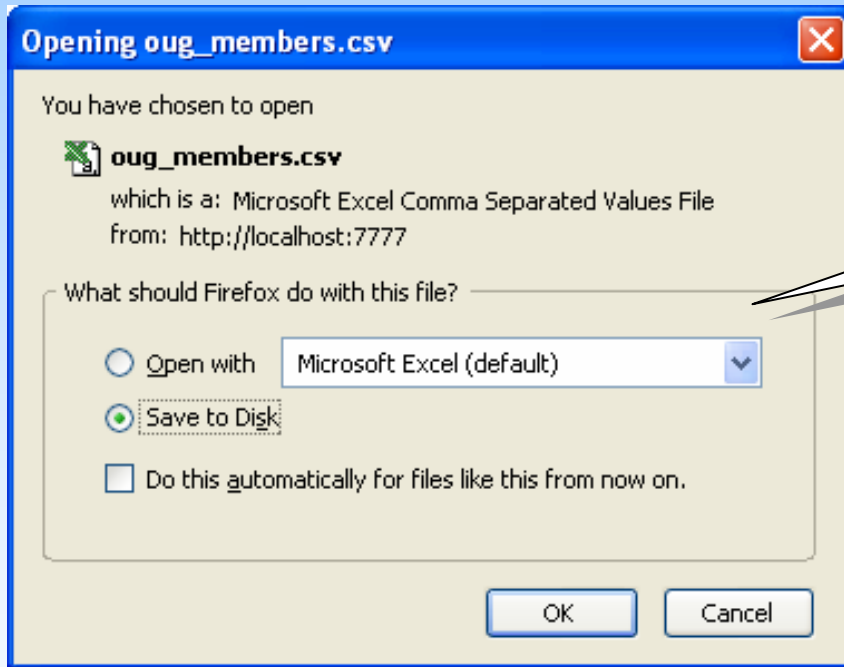
Notice the **Spreadsheet** link below the report. I can download this report to a csv file!



Download CSV

If you click on the Spreadsheet link, you get prompted to open or save.

I will save this file.





Change the Report Page

- To change Page name / Title – in the page edit window click on name or title – make changes – apply
- To remove the user's ability to Delete Rows – click on Delete button name – in Edit button click on Delete button
- To remove or restore Spreadsheet download capabilities – in Report Edit window, scroll to Report Export (see tabs). Select yes or no to determine if download allowed

Page

Page Name: OUG Member List

Title: OUG MEMBERS

Buttons

Region: OUG_MEMBERS ▼▲

10 Reset Submit as "RESET"

10 Create Redirect to page 2

20 Delete Submit as "DELETE"

Item Submit as "Go"

Region Name: OUG_MEMBERS

Show All Column Attributes Layout and Page

Report Export

Enable CSV output Yes ☐ Separate

Link Label Download to csv

Filename



Change the Report Region

Edit Region - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:4651:767828450700455:::4651,960,420:F4000_P465

Getting Started Latest Headlines

Region: 2 of 2 Name: Current OUG Member List Cancel Delete Apply Changes

Show All Identification User Interface Source Conditions Cache Header and Footer Authorization Customization

Identification

Page: 1 OUG Member List

* Title: Current OUG Member List ☐ exclude title from translation

Type: SQL Query

Static ID:

User Interface

Template: Reports Region

* Sequence: 10

Display Point: Page Template Body (3. items above region content) ☐ Column: 1

[Body] [Pos.1] [Pos.2] [Pos.3] [Pos.4]

Region HTML table cell attributes:

Source

Region Source

```
select
"MBRID",
"FIRSTNAME",
"MID INIT",
"LASTNAME",
"PHONE"
from "OUG_MEMBERS"
where
```

Done

Get here by clicking on the region name in the page edit window.
I am changing the region title.

Note the page type (below the title) is a SQL Query.
You can see the query and modify as you need here.



Updated

Screenshot of a web application titled "OUG Member List" running in Mozilla Firefox. The browser address bar shows the URL: `http://localhost:7777/pls/apex/f?p=105:1:7678284507004`.

The application interface includes a "Logout" link and a "OUG Members" tab. The main section is titled "OUG Member List" and contains a "Current OUG Member List" section with "Reset" and "Create" buttons.

A search bar is present with a "Search" label, a text input field, a "Display" dropdown set to "15", and a "Go" button. Below the search bar is a table of members:

	First Name	Middle	Last Name	Phone
	David	G.	Anderson	401.783.6172
	Gary		Belke	401.783.6172
	John	Q	Public	401.783.6172
	Karen	A	Hackett	401.783.6172

Below the table is a link "Download to csv" and a pagination indicator "1 - 4".

The footer of the application shows a breadcrumb trail: Home > Application 105 > Edit Page 1 > Create > Session > Activity > Debug > Show Edit Links. The status bar at the bottom indicates "Done".

A speech bubble points to the "Go" button, stating: "I changed breadcrumb entries, tab entries, page titles, region titles, column headers, etc."



Add a Documents Page

Application Builder - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:1:767828450700

Google

Getting Started Latest Headlines

ORACLE Application Express

Logout Help

Home Application Builder SQL Workshop Utilities

Home > Application Builder > Application 105

Page 1

Application: 105 - OUG Demonstration

Run Application Supporting Objects Shared Components Export / Import

Page View Icons Display 15 Go

Create Page >

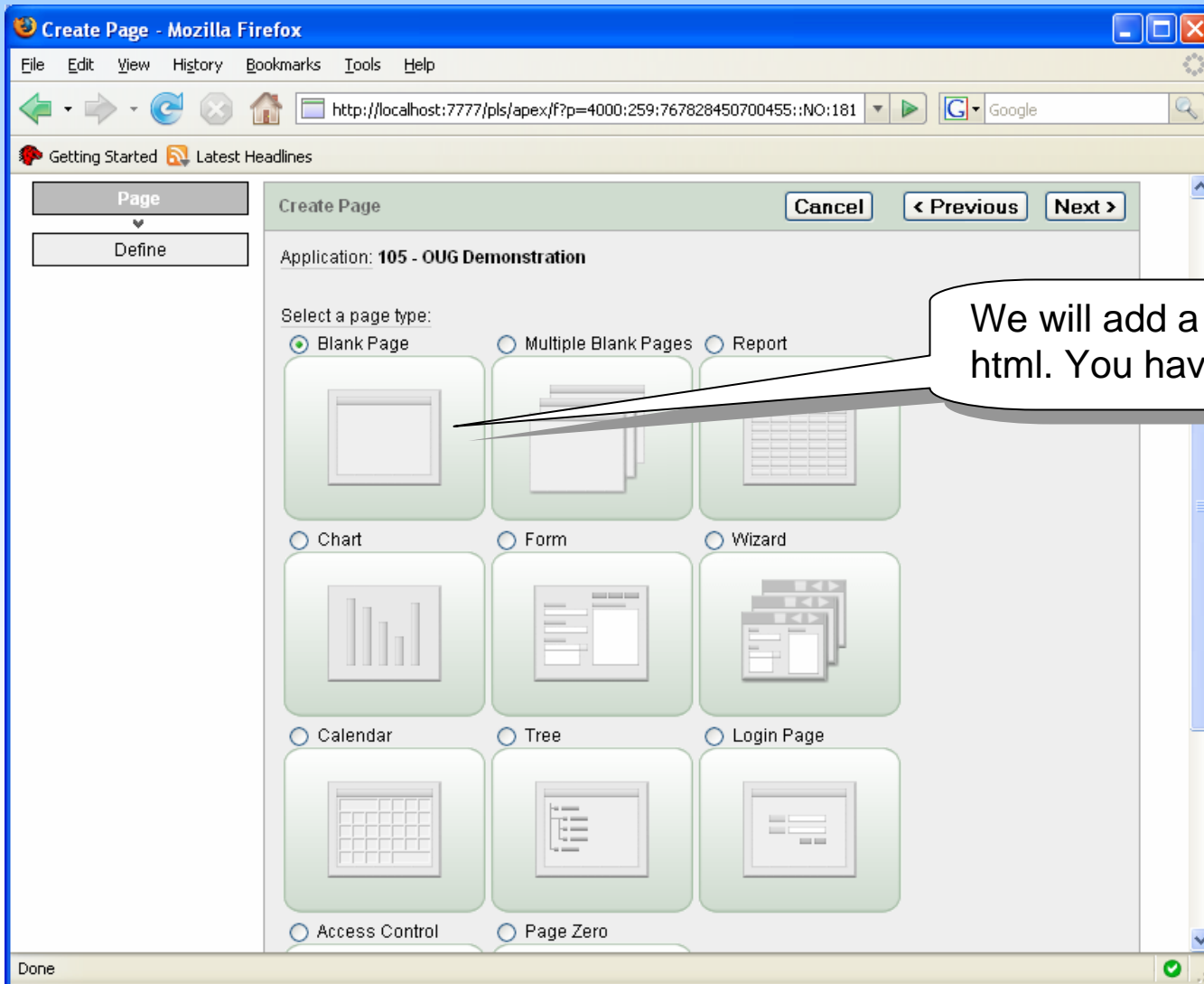
1 - OUG Member List 2 - OUG MEMBERS data 101 - Login

Done

Use **Create Page** to add another page to our application



What Type of Page?





New Page attributes...

Alias... next, Name it and say we want breadcrumbs (no parent).

Create Page Cancel Next >

Select an unused numeric page identifier. Page zero functions as a master page. Page zero components are rendered on every page within your application.

Application: **105 - OUG Demonstration**

* Page Number

Page Alias

Create Page

Page: 4

* Name

Title

Breadcrumb

Create Breadcrumb Entry

Entry Name

Parent Entry
[No parent breadcrumb entry]

Select Parent Entry:

Name	Page
OUG Member List	1
OUG Member Data	2

row(s) 1 - 2 of 2



...New Page attributes

Create Page Cancel < Previous Next >

Page: 4
Page Name: **Show Documents**

Would you like to use tabs for this new page?

☐ No

☐ Yes - Create a new tab set and a new tab within the tab set.

☒ Yes - Use an existing tab set and create a new tab within the existing tab set.

☐ Yes - Use an existing tab set and reuse an existing tab within that tab set.

Tabs?
Yes we use the existing tab set and add a new **"Documents"** Tab

Identify Existing Tab Set Cancel < Previous Next >

Page: 4
Page Name: **Show Documents**

* Existing Tab Set TS1 (OUG Members)

Create Page Cancel < Previous Next >

Specify the name of tab to be shown on the page you are about to create.

Page: 4
Page Name: **Show Documents**
New Tab Set: **TS1**

* Tab Label Documents



Confirm Page Create

Page Creation Confirmation

[Cancel](#)[< Previous](#)[Finish](#)

You have requested to create a page with the following attributes. Please confirm your selections.

Application	105
Page	4
Page Name	Show Documents
Page Title	Show Documents
Tab Set	This page will use the existing tab set "TS1".
Tab Label	Documents
Parent Tab Set	
Parent Tab Label	-

Success



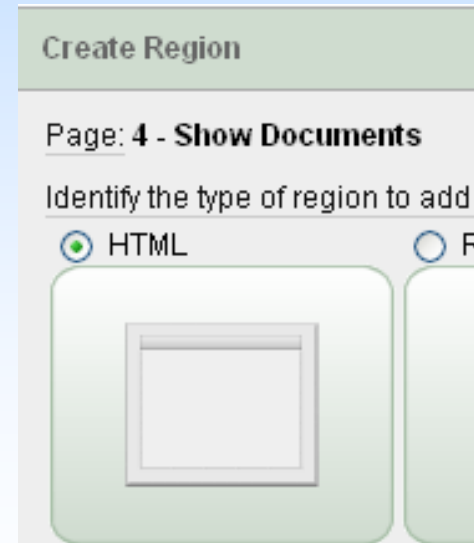
The page has been created successfully.
Page: 4

[Run Page](#)[Edit Page](#)



Insert Region in New Page

- To build this page, in the page edit window, we need to add a region by clicking on the plus sign. A region is an area where we show our users information.
- We are adding a region that is HTML. There will be another window that asks what type of HTML, We select just simple html.





Region Title and Code

- We need to title the region and indicate where we want it positioned.
- Put in our HTML code.
 - Notice the WORKSPACE_IMAGES
 - This is how we access shared component files and images.
- **Create Region**
Finishes the process

Create Region

Page: 4 - Show Documents

Region Source Type: HTML Text (no shortcuts)

* Title: Documents available to users

Region Template: Reports Region

Display Point: Page Template Body (3. items above region content)

* Sequence: 11 Column: 1

Create Region

Page: 4 - Show Documents

Region Title: Documents available to users

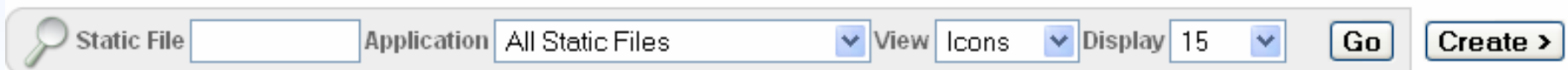
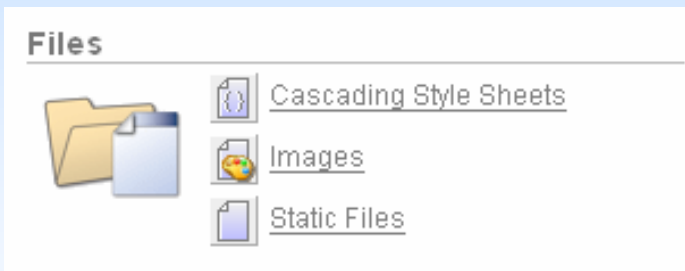
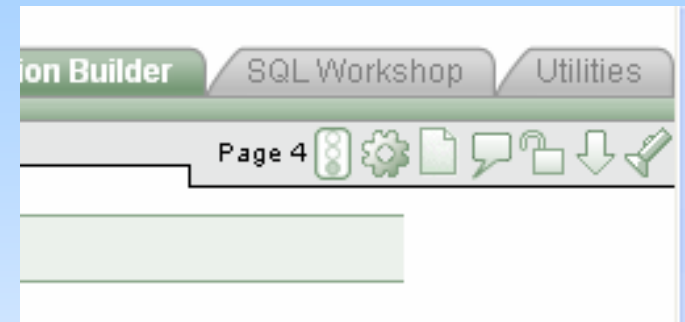
Enter HTML Text Region Source:

```
<p>Please <a href=\"#WORKSPACE_IMAGES#Signup_sheet.pdf\">click here</a> to get the sign up sheet (PDF) </p>
```



Adding A PDF to the Database!

- From most windows, we can click on the gear wheel to get to Shared Components
- In the Shared Components window, we want Files, Static
- In the Static File Window, we want to click on Create





Adding A PDF to the Database 1

- The Create button lets us upload a file we browse for. I selected a pdf called Signup_Sheet.pdf

Create Static File

Application: - No Application Associated -

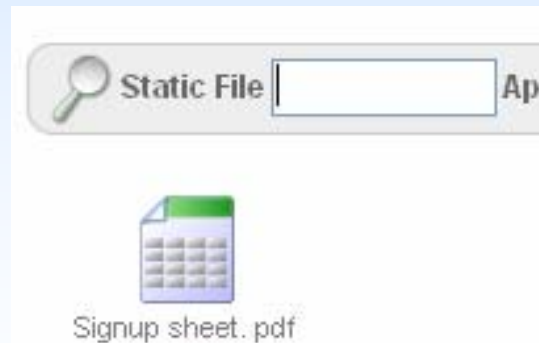
* Filename: JG_Demo_Files\Signup_sheet.pdf Browse...

Notes

* File Character Set: Unicode UTF-8

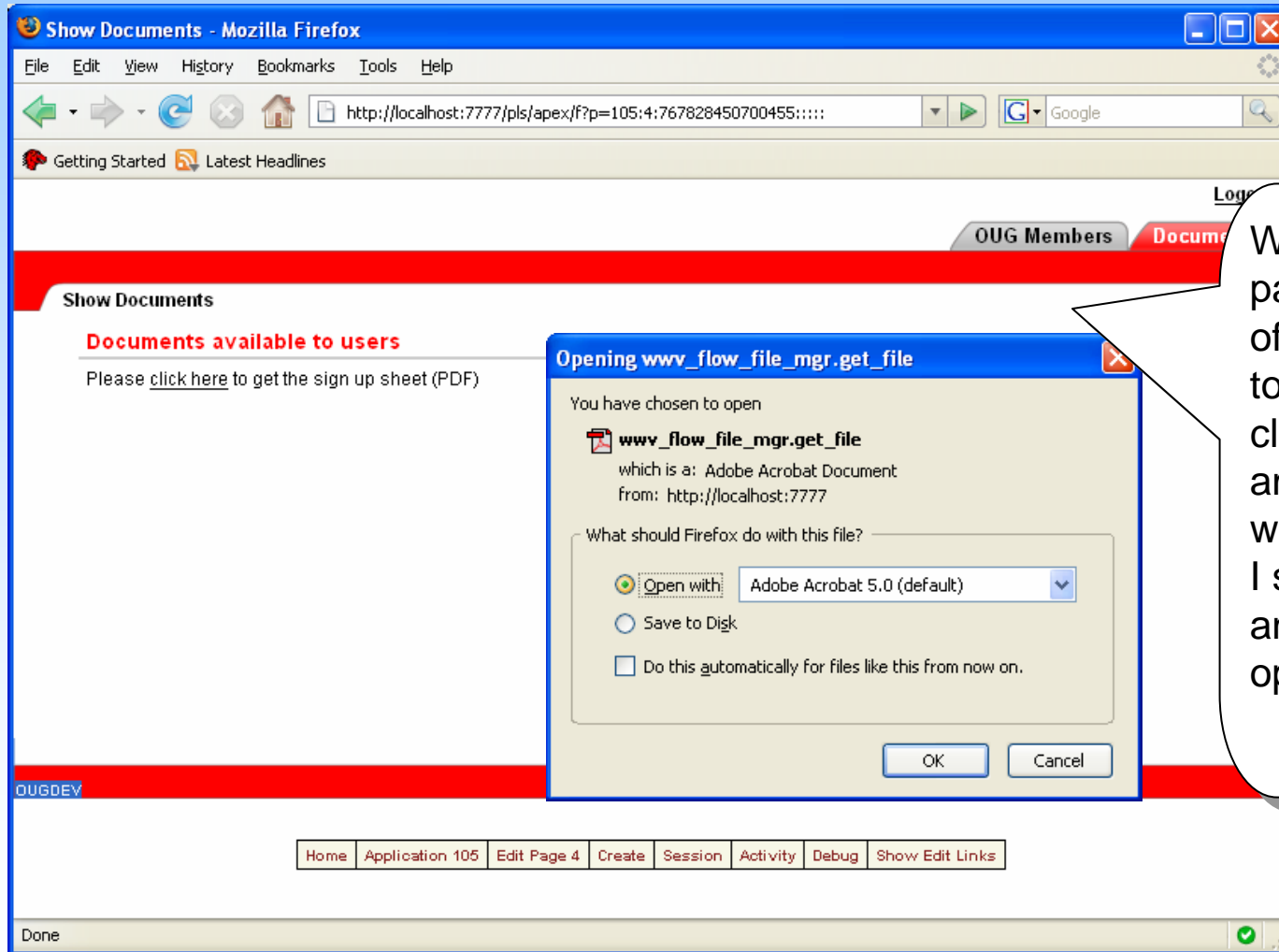
Cancel Upload

- Now I have it available for all applications since I did not associate it with an application





Running the page with the html



We run our new page 4 and are offered the link to the pdf. I click on it and am prompted what to do. I select open and the pdf will open in Adobe.



Adding Docs and Images

- Documents, Spreadsheets, images are added in the same fashion:
 - Branch to Shared Components... Files and either Static Files or Images
 - If you want an object available to all applications, do not associate it with an application
 - To reference it in your code:
 - #WORKSPACE_IMAGES#file.name
 - #APP_IMAGES#file.name for those associated with the current application



Resources for Learning

- Oracle Application Express is an incredibly robust tool
- While getting started in Apex is simple, learning all its features can take quite a while
- Resources:
 - The best repository and start point for Apex documentation, links to tutorials, OTN resources is: <http://apex.oracle.com>
 - Apex Users Forum:
<http://forums.oracle.com/forums/forum.jspa?forumID=137&start=0>
 - SkillBuilders – Intro to Oracle Application Express Course
- The slides that follow show the build of an application from a CSV file - time constraints may not allow for their review in the formal presentation



Create Application from CSV

Application Builder - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=4000:1500:5426177216588019:::RP::

Getting Started Latest Headlines

ORACLE Application Express

Logout Help

Home Application Builder SQL Workshop Utilities

Home > Application Builder

Application View Icons Display 15 Go Import > Create >

OUG Demonstration

Tasks

- Developer Preferences
- User Interface Defaults
- Export Repository

Recent

- OUG Demonstration

1-1

Navigate back to Application Builder Home page. We will create another application.

We built the first application using a table. You can create an application from a spreadsheet (csv).

Language: en

Workspace: OUGDEMO

Application Express 3.0.0.00.20

Copyright © 1999, 2007, Oracle. All rights reserved.

Done



Select From Spreadsheet

Create Application Cancel Next >

An application is a collection of pages linked together using tabs, buttons, or hypertext links. The pages in an application share a common session state definition and authentication method.

☐ Create Application ☒ Create from Spreadsheet ☐ Demonstration Application

The interface shows three options for creating an application. The first option, 'Create Application', is represented by an icon of two overlapping document windows. The second option, 'Create from Spreadsheet', is represented by an icon of a document window with a green arrow pointing from a spreadsheet icon into it. The third option, 'Demonstration Application', is represented by an icon of a document window with a graduation cap on top. The 'Create from Spreadsheet' option is currently selected, indicated by a green dot in the radio button.

Click on from
Spreadsheet. Next...



Supply the File

Method
▼
Load Method
▼
Data
▼
Table Properties
▼
User Interface Defaults
▼
Summary Page
▼
Application Options
▼
User Interface Theme
▼
Confirm

Create Application Cancel < Previous Next >

Create an application from spreadsheet data. Upload or paste spreadsheet data to create a table. The resulting application will feature query, insert, update, and analysis capabilities on the newly created table.

Import From

- ☒ Upload file, comma separated (*.csv) or tab delimited
- ☐ Copy and paste (up to 30KB)

the file.
right –
/e will

xt...

Create Application Cancel < Previous Next >

The file to be uploaded must be text-based. To upload a .XLS file, first save it as CSV.

* Text File Browse...

* Separator

Optionally Enclosed By

☒ First row contains column names.

File Character Set ▼

base our
the
t. **Next...**



Table is Built – Name it!

Create Application Cancel < Previous Next >

This page previews how your table will look. You can modify the suggested table name, change the column names or datatypes, or specify which columns to include.

* Schema

* Table Name ☐ Preserve Case

Set Table Properties

Column Names	<input type="text" value="mbrID"/>	<input type="text" value="firstName"/>	<input type="text" value="midInit"/>	<input type="text" value="lastName"/>	<input type="text" value="Phone"/>
Data Type	<input type="text" value="VARCHAR2"/>	<input type="text" value="VARCHAR2"/>	<input type="text" value="VARCHAR2"/>	<input type="text" value="VARCHAR2"/>	<input type="text" value="VARCHAR2"/>
Format	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Column Length	<input type="text" value="30"/>	<input type="text" value="30"/>	<input type="text" value="30"/>	<input type="text" value="30"/>	<input type="text" value="30"/>
Upload	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>
Row 1	"1"	"David"	"G."	"Anderson"	"401.783.6172"
Row 2	"2"	"Gary"	""	"Belke"	"401.783.6172"
Row 3	"3"	"John"	"Q"	"Public"	"401.783.6172"
Row 4	"4"	"Karen"	"A"	"Hackett"	"401.783.6172"



Supply Names for App pages

Create ApplicationCancel< PreviousNext >

Schema: **OUG_APEX_DEMO**

Table Name: **OUG_MEMBERS_CSV**

* Singular Name

* Plural Name

Column User Interface Defaults

Column	Label
MBRID	<input type="text" value="Mbr Id"/>
FIRSTNAME	<input type="text" value="First Name"/>
MIDINIT	<input type="text" value="Middle"/>
LASTNAME	<input type="text" value="Last Name"/>
PHONE	<input type="text" value="Phone"/>

ame
ral

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the csv
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he



Summary reports & Read/write

Create Application Cancel < Previous Next >

Select the columns for which data will be summarized in reports and charts. For each column you select, the Create Application Wizard creates a summary report and chart.

Schema: **OUG_APEX_DEMO**
Table Name: **OUG_MEMBERS_CSV**

Summary By Column

MBRID
FIRSTNAME
MIDINIT
LASTNAME
PHONE

Columns for
on reports – I
. **Next...**

Create Application Cancel < Previous Next >

Schema: **OUG_APEX_DEMO**
Table Name: **OUG_MEMBERS_CSV**

* Application Name

Create Mode ☐ Read Only
☒ Read and Write


allowed?





Pick Theme & Confirm

Create Application Cancel < Previous Next >


Select a theme:


☐ Theme 1 

☒ Theme 2 

☐ Theme 3 

Create Application Cancel < Previous Create

 Owner: **OUG_APEX_DEMO**
Table: **OUG_MEMBERS_CSV**
Application Name: **OUG_MEMBERS_CSV**
Theme: **2**





Run new Application

Report Page - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:7777/pls/apex/f?p=101:1:2056642431457742

Getting Started Latest Headlines

Logout

Oug Members Csv

Home

Oug Members CSV

Reset Create

Search Go

	Mbr Id ▲	First Name	Middle	Last Name	Phone
	"1"	"David"	"G."	"Anderson"	"401.783.6172"
	"2"	"Gary"	"	"Belke"	"401.783.6172"
	"3"	"John"	"Q"	"Public"	"401.783.6172"
	"4"	"Karen"	"A"	"Hackett"	"401.783.6172"

[Spread Sheet](#)

1 - 4

OUGDEV

Home Application 101 Edit Page 1 Create Session Activity Debug Show Edit Links

Done

The application was created and we were presented with a window with icons to run or edit the application. I ran it, logged in and now I have my report, etc.