

DTGen GUI Demonstration

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Introduction:

The exercises in this demonstration are focused on the Graphical User Interface (GUI) "helpers" produced by DTGen. The database schema and data are an extension of the ASOF Demonstration. The "ASOF" demonstration should be reviewed before running these exercises. Several concepts introduced in those exercises are not explained here.

With the exception of executing generated scripts, all the functionality in these exercises is available through both command line and graphical user interface (GUI) mode. Issue #23 is an enhancement request to allow executing generated scripts in the GUI. Command line is used in these exercises to expedite progress where needed.

The exercises in this directory are numbered and must be executed in sequential order. The demonstration users must be created with the "create_demo_users.sql" script in the parent directory before the first exercise is run. The demonstration users must be dropped with the "drop_demo_users.sql" script before the "create_demo_users.sql" script can be re-run. These exercises also assume that the default username/password (dtgen/dtgen) is still in use for the generator. Names and passwords are set in the "vars.sql" script and can be modified, if necessary. Also, the DTGen database objects must be installed in the database and the DTGen must be ready to generate code.

Exercise Setup

Command Line:

```
sqlplus system/password @setup
```

Exercise Setup modifies the database. However, the changes are made in APEX

The setup.sql script creates an APEX workspace and user. These need to be in place before the target application can be created in Exercise #1.

```
Workspace and APEX User DTGEN_DB_DEMO have been setup.
```

```
PL/SQL procedure successfully completed.
```

The output above is the result of a successful execution. Note, setup.sql can also be run as sys or APEX_04000. Also, there is a cleanup.sql script that can be used to remove this setup in APEX. Note that identical database schema objects can be dropped and recreated without dropping and recreating APEX objects.

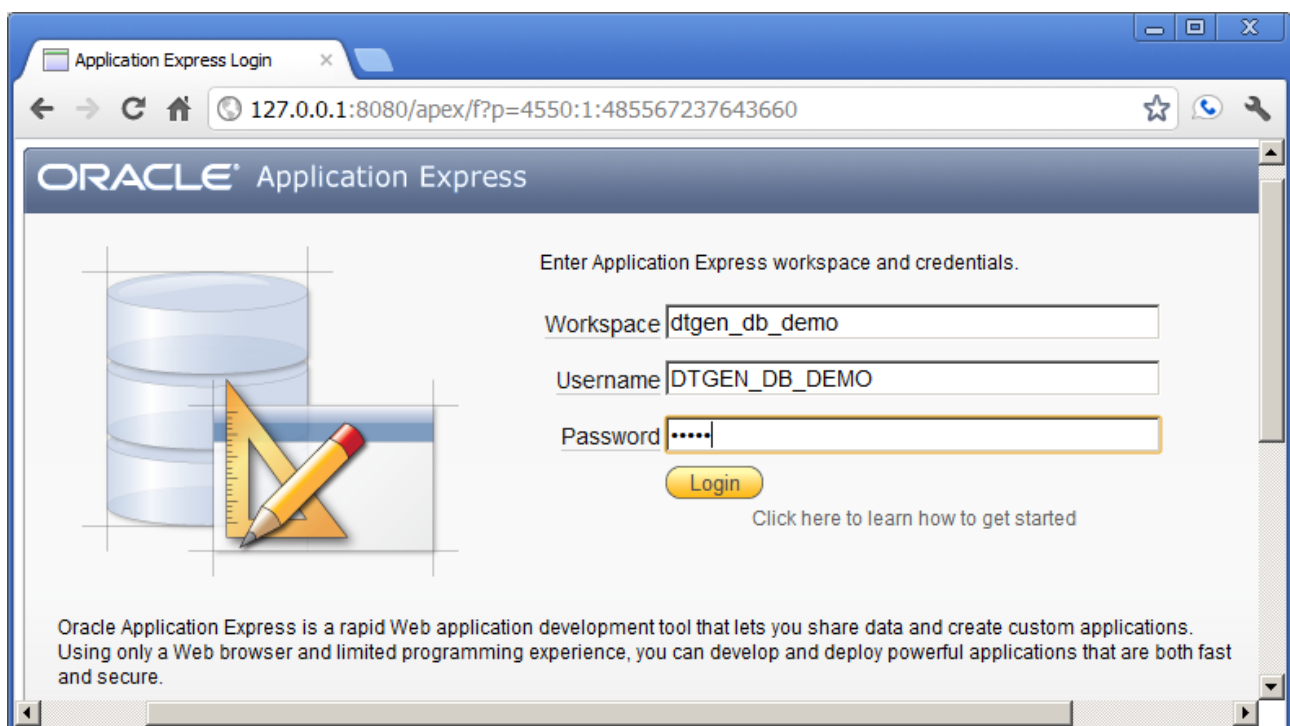
Exercise #1: Default Maintenance Forms

Event Sequence:

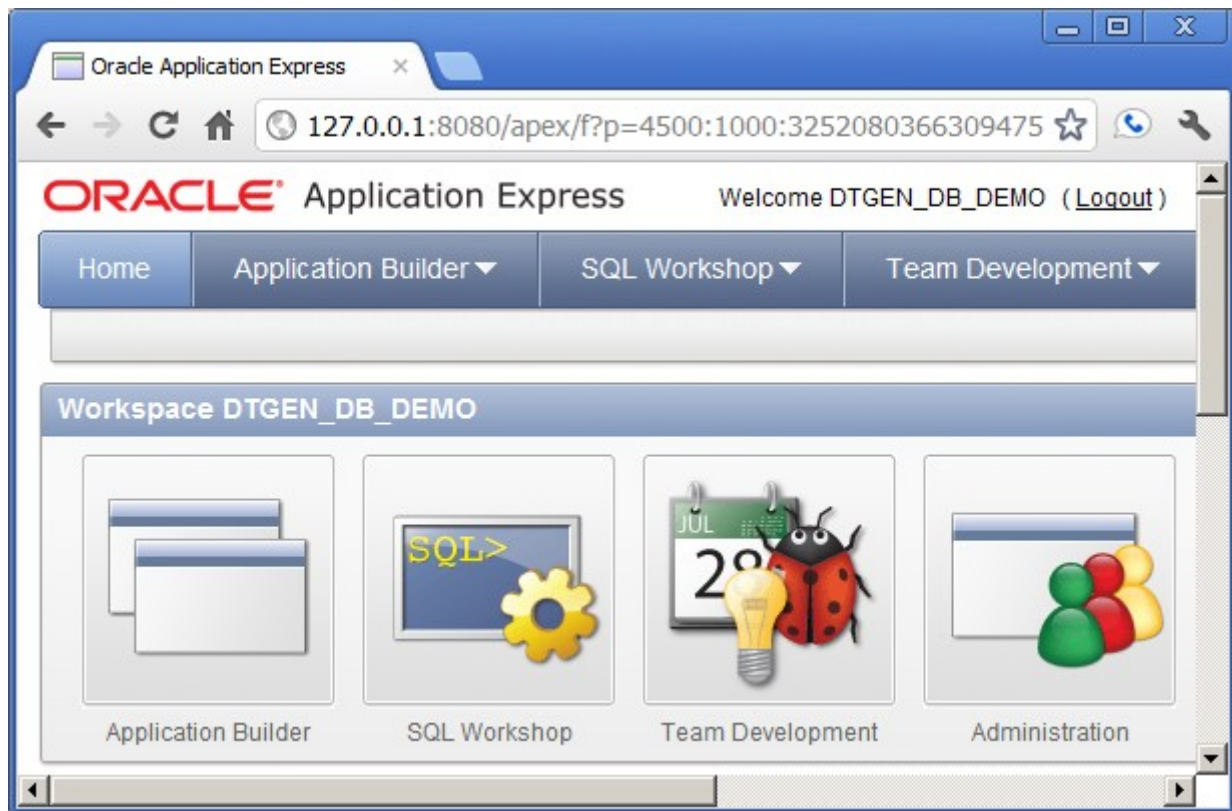
```
APEX Forms  
sqlplus /nolog @e1  
APEX Forms
```

Exercise #1 modifies the database. The "drop_demo_users.sql" and "create_demo_users.sql" scripts must be used to reset the database before re-running this exercise. The APEX application that is created can be removed or remain as the create_flow.sql scripts will "work around" the existing application.

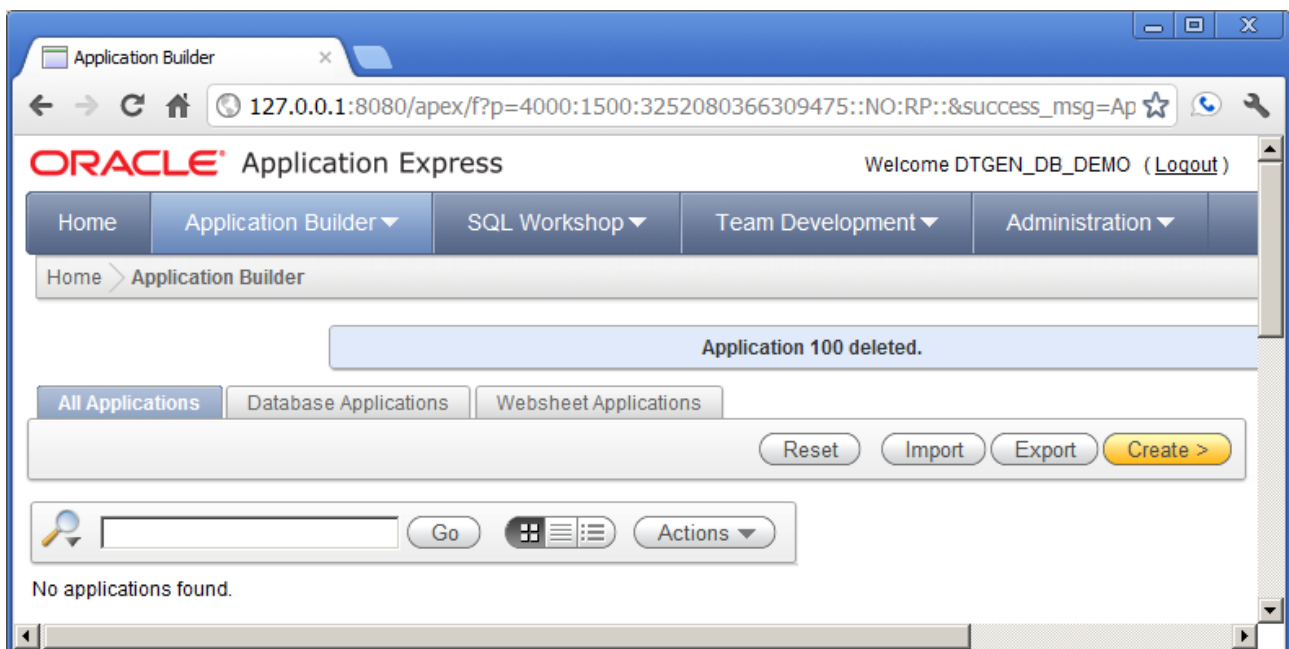
In this exercise, an empty application will be created in APEX. The database schema and maintenance forms will be generated and loaded into the empty application. Then, navigation lists and breadcrumbs will be updated to integrate the generated items into the application. The process starts with a login to APEX. The password is "dtgen".



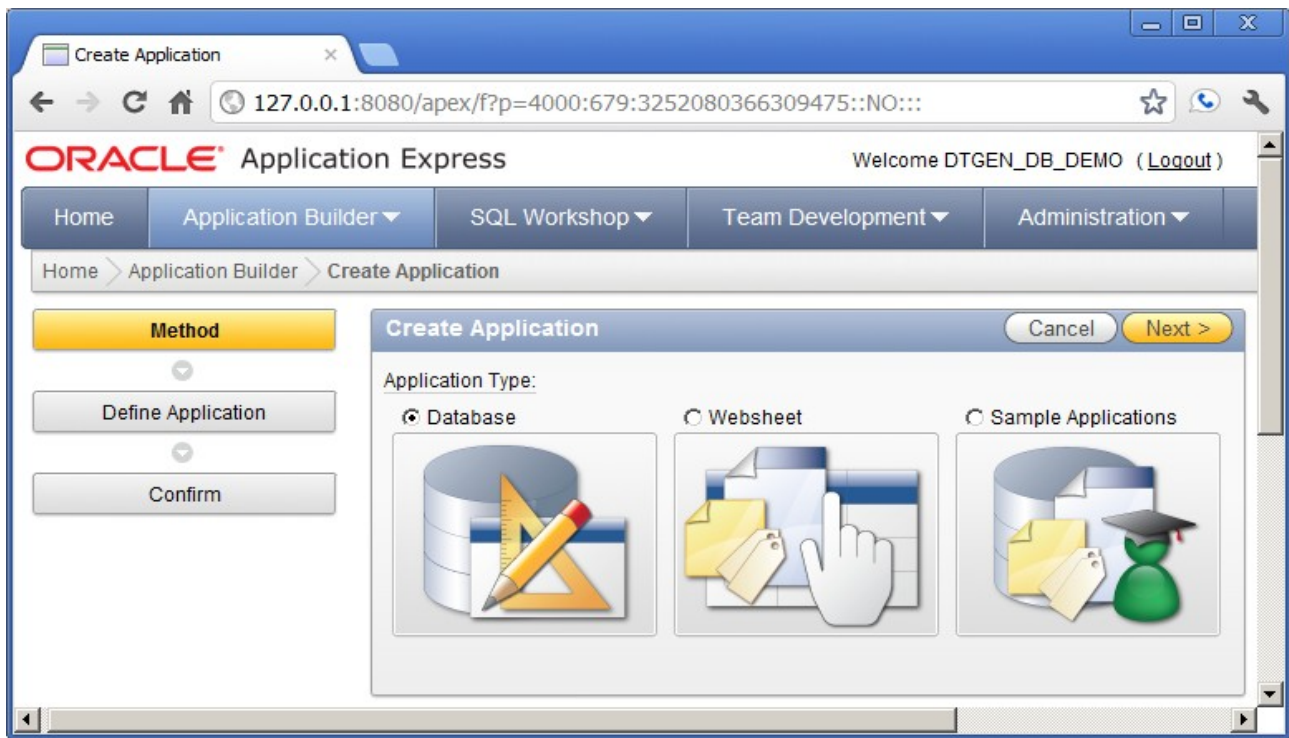
Click the "login" button to login.



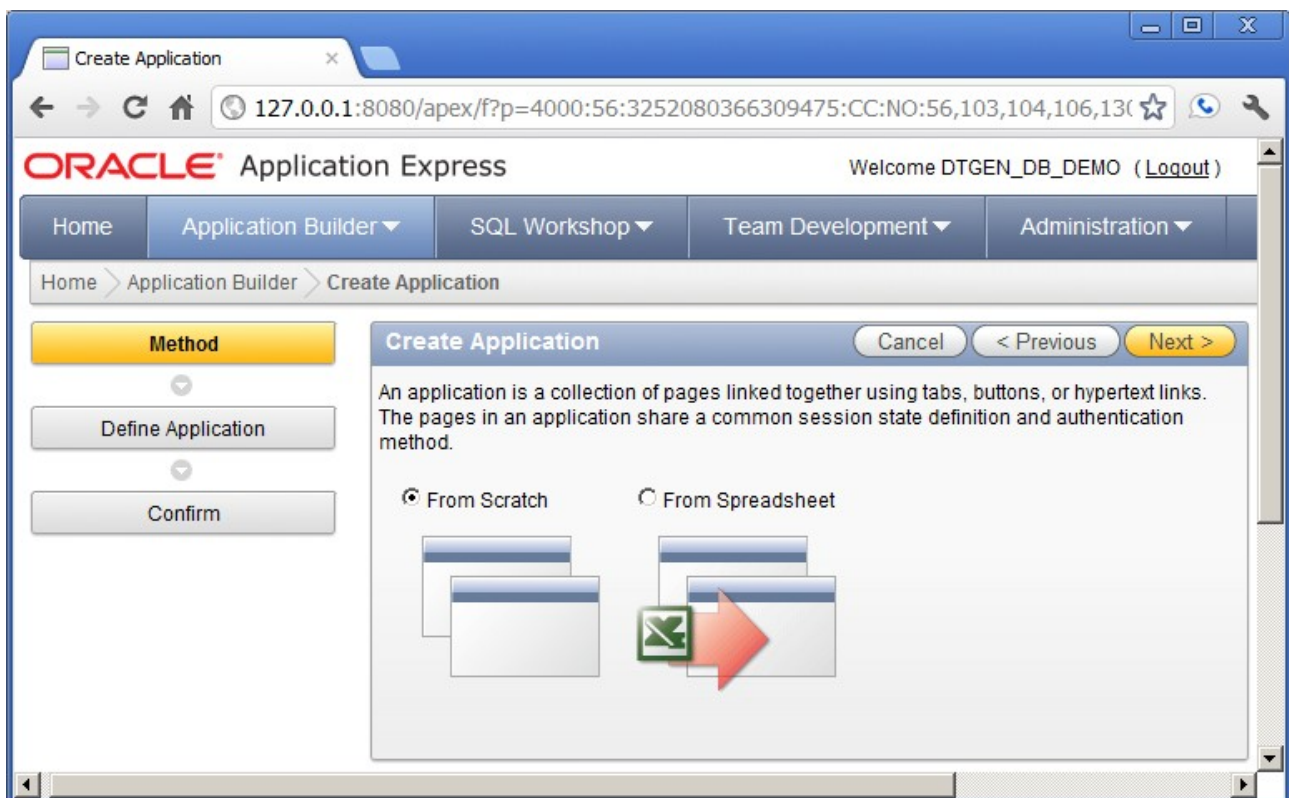
Click the "Application Builder" button.



Click the "create" button to create a new application.



Click the "Database" or the "Next" button.



Click the "From Scratch" or the "Next" button.

Oracle Application Express interface showing the 'Create Application' wizard. The left sidebar lists steps: Method, Name, Pages, Tabs, and Shared Components. The 'Name' step is active.

Create Application (Cancel < Previous Next >)

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

* Name:

* Application:

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

Schema:

Update the values and click the "Next" button.

Oracle Application Express interface showing the 'Create Application' wizard. The left sidebar lists steps: Method, Name, Pages, Tabs, Shared Components, Attributes, User Interface, and Confirm. The 'Pages' step is active.

Create Application (Cancel < Previous)

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

Add Page (Add Page)

Select Page Type:

☒ Blank ☐ Report ☐ Form ☐ Report and Form

☐ Tabular Form ☐ Master Detail ☐ Chart

Action: Add blank page to application

Page Name:

Update the values and click "Add Page".

Oracle Application Express

Welcome DTGEN_DB_DEMO (Logout)

Home Application Builder SQL Workshop Team Development Administration

Home > Application Builder > Create Application

Method

Name

Pages

Tabs

Shared Components

Attributes

User Interface

Confirm

Create Application

Cancel < Previous Next > Create

Page	Page Name	Page Type	Source Type	Source	Delete
1	Home	Blank	-	-	X

Add Page

Add Page

Select Page Type:

☒ Blank ☐ Report ☐ Form ☐ Report and Form

☐ Tabular Form ☐ Master Detail ☐ Chart

Action: Add blank page to application

Subordinate to Page - Top Level Page -

Page Name Page 2

Confirm the values and click the "Next" button

Oracle Application Express

Welcome DTGEN_DB_DEMO (Logout)

Home Application Builder SQL Workshop Team Development Administration

Home > Application Builder > Create Application

Method

Name

Pages

Tabs

Shared Components

Create Application

Cancel < Previous Next >

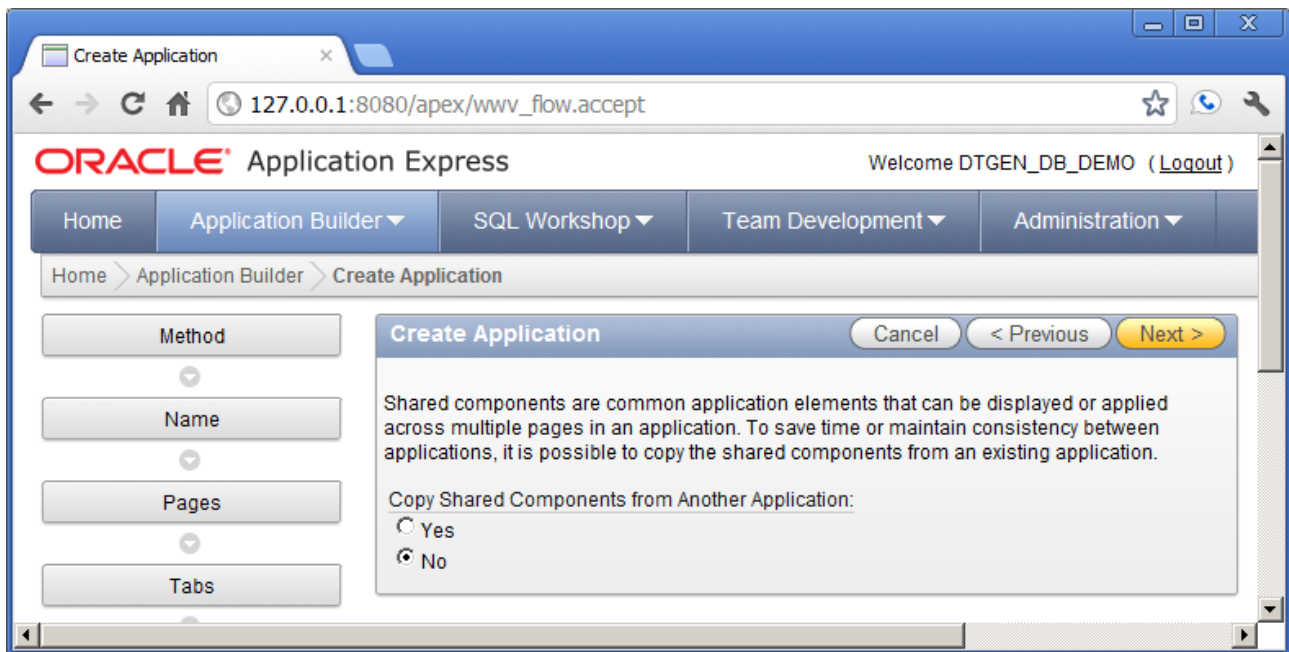
Application: 100

Name: GUI_DEMO

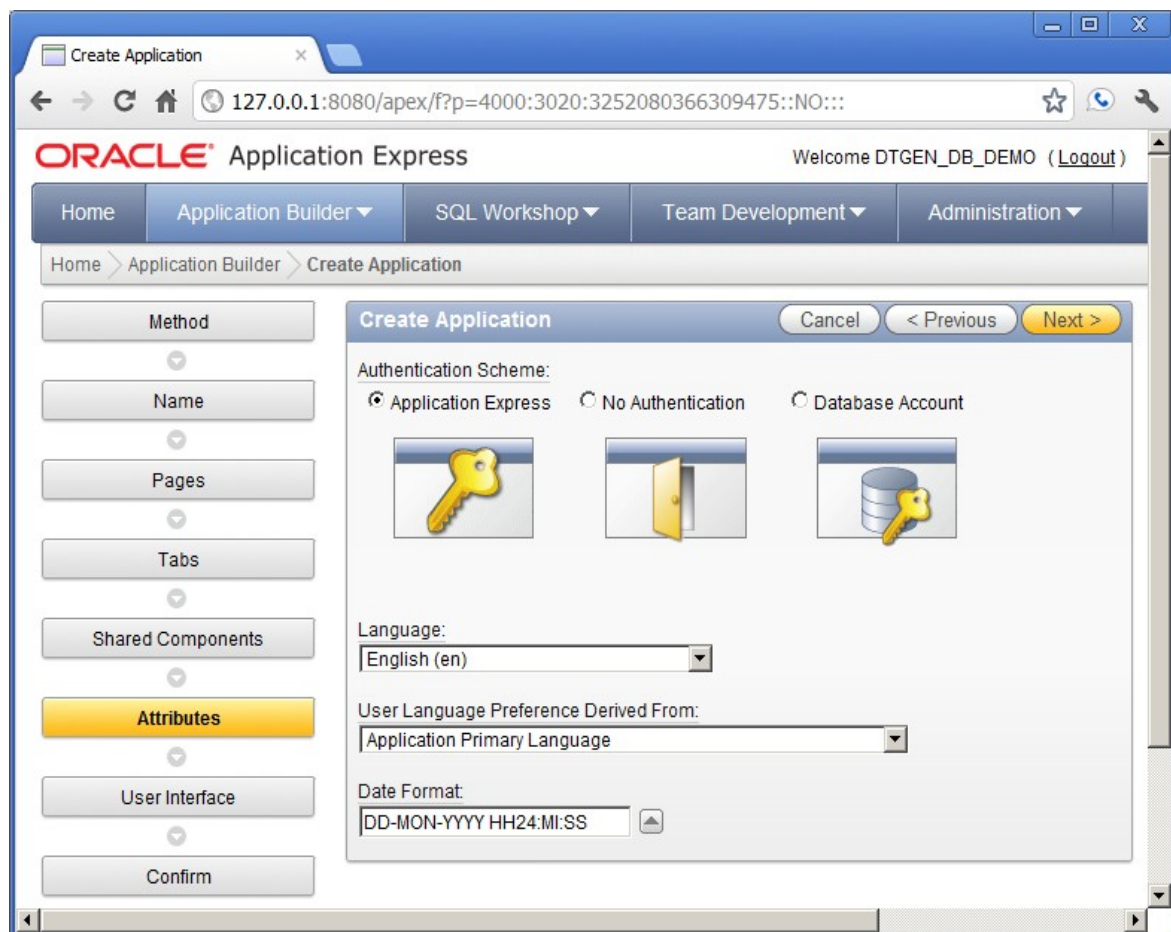
Tabs:

☐ No Tabs ☒ One Level of Tabs ☐ Two Levels of Tabs

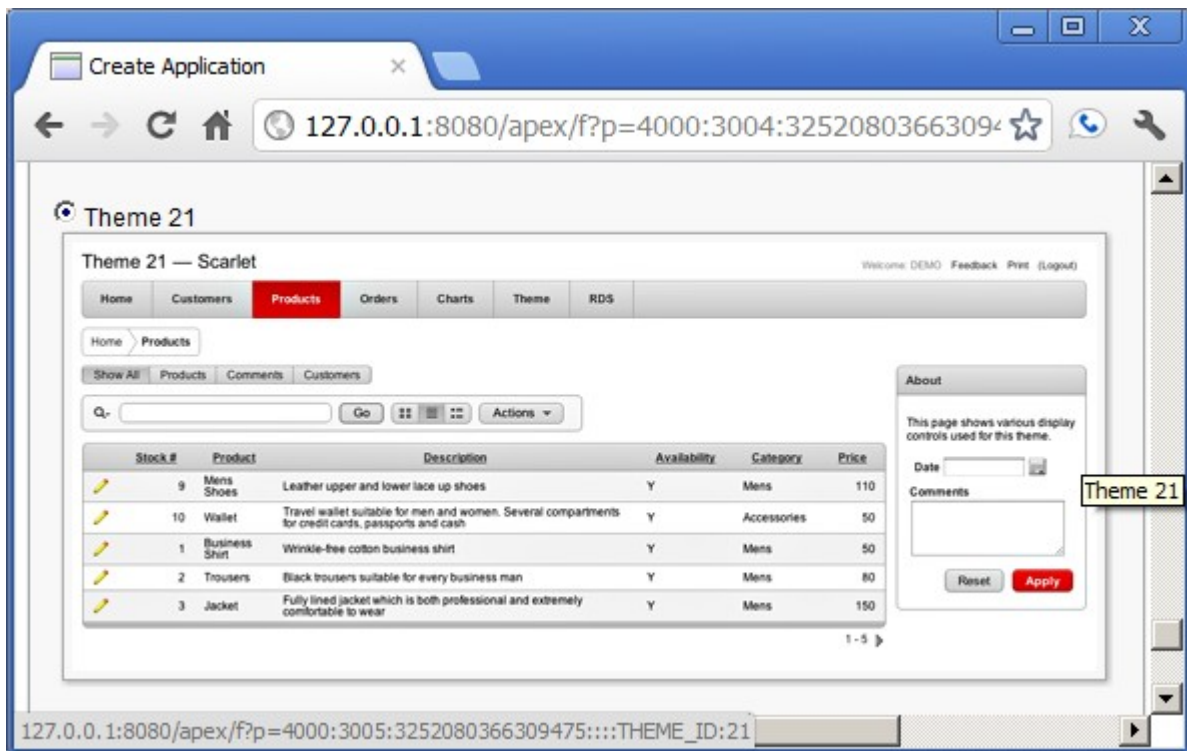
Confirm the values and click the "Next" button



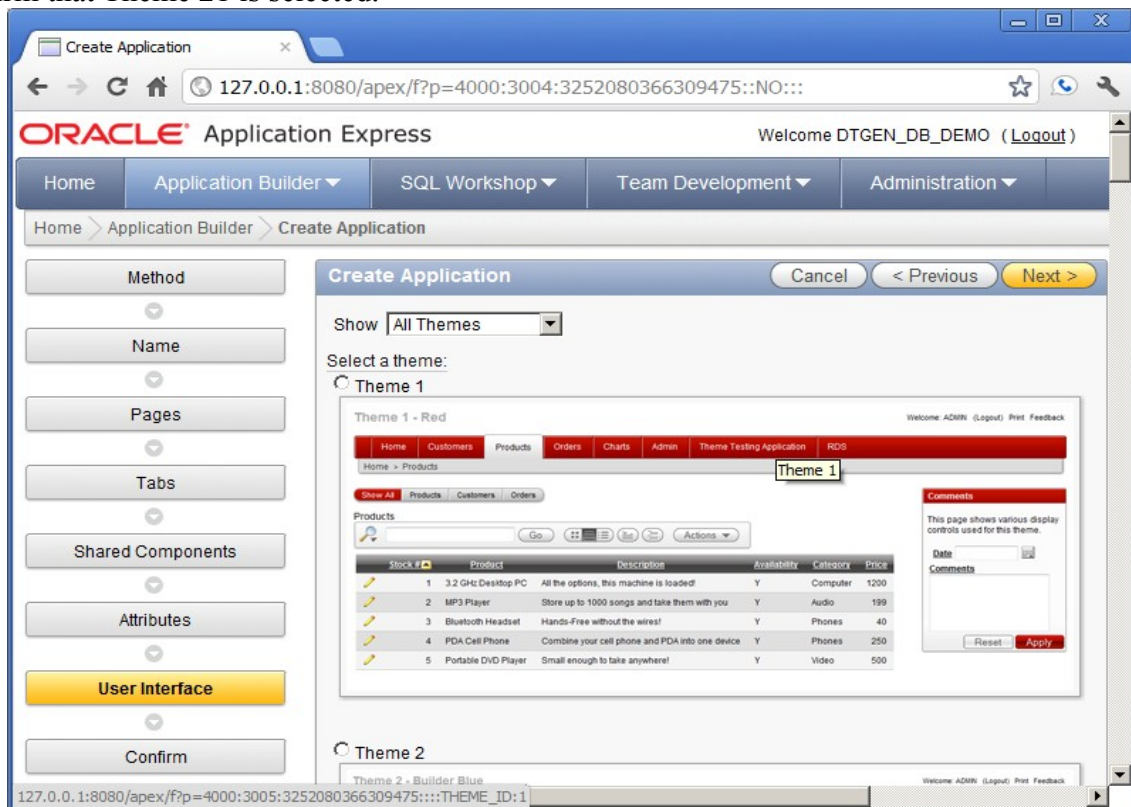
Confirm the values and click the "Next" button.



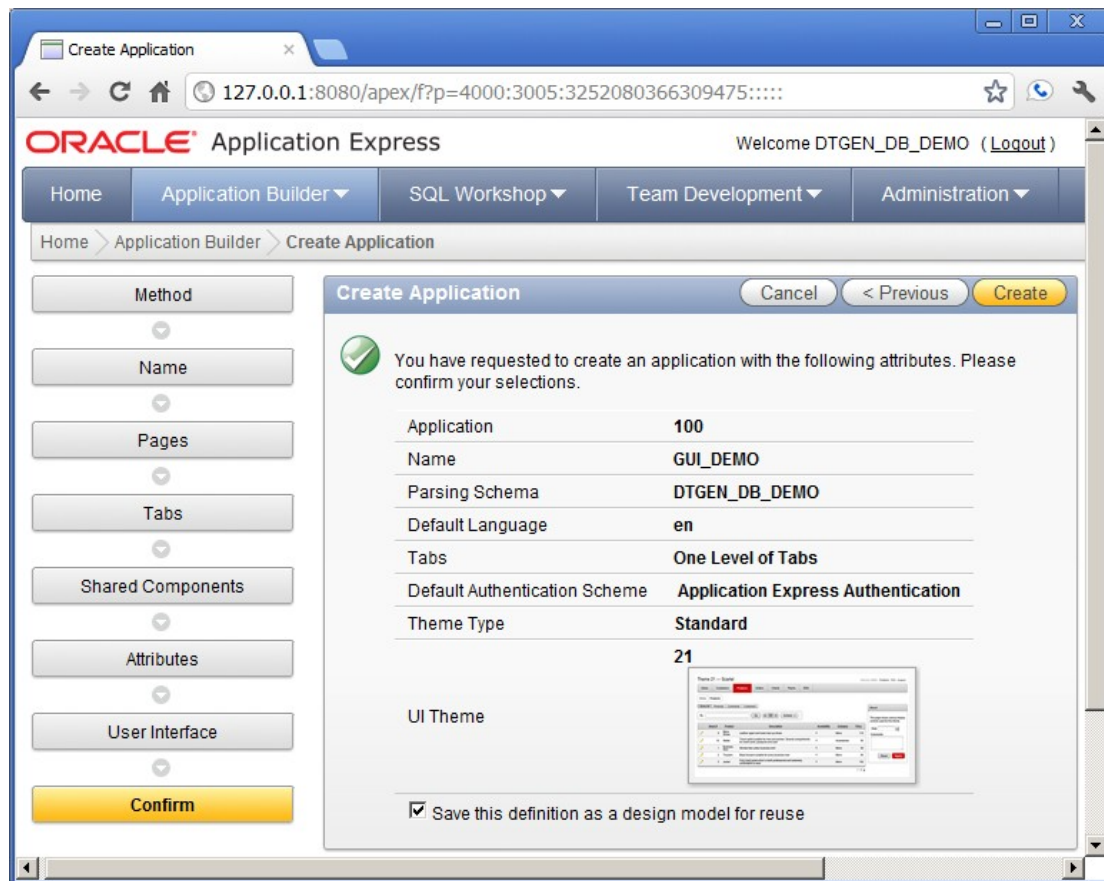
Enter the values and click "Next"



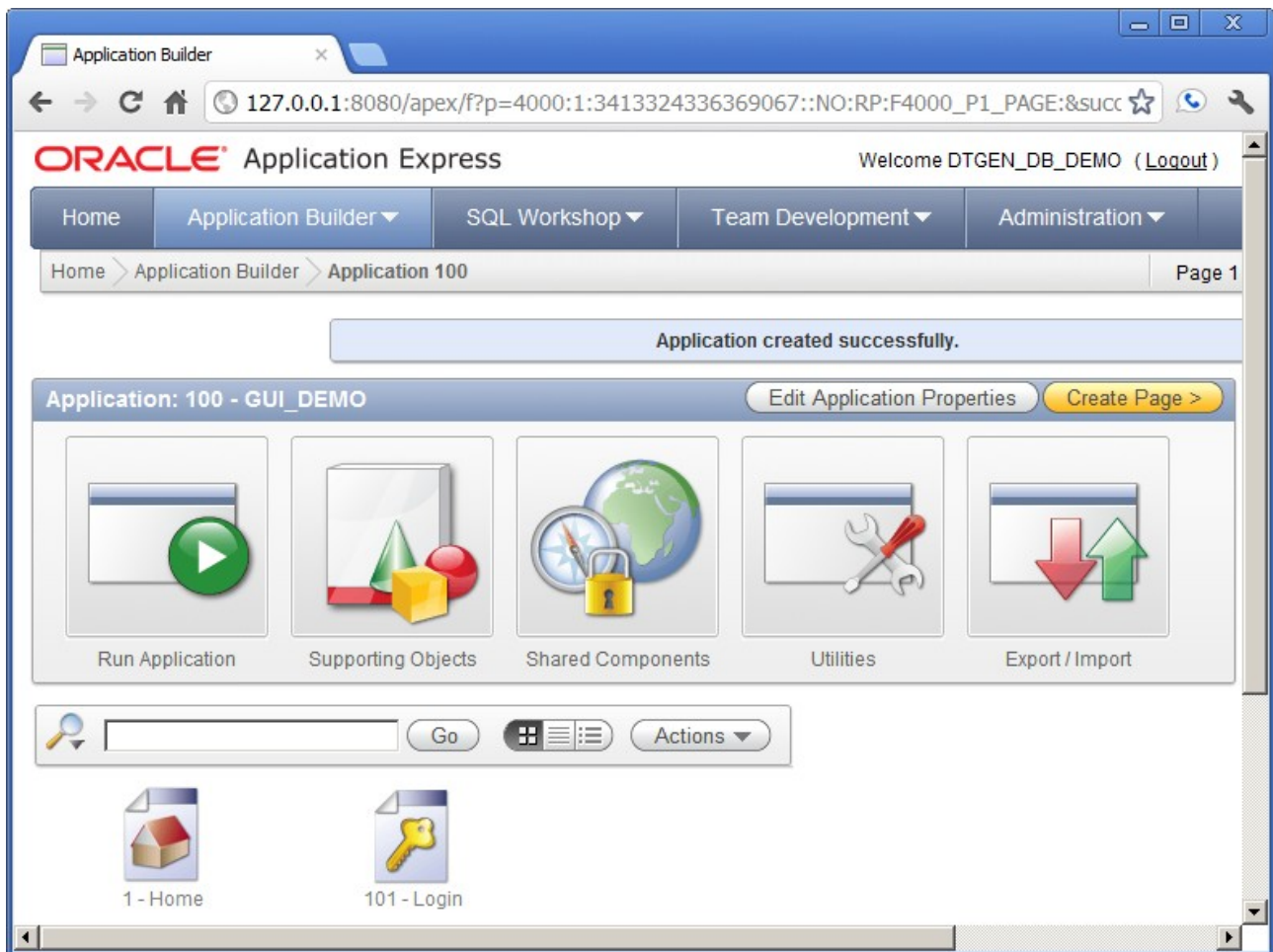
Confirm that Theme 21 is selected.



The screen above is the same as the previous screen. Confirm and click the "Next" button.



Enter the values and click the "Create" button.



The new application has been created and is ready to receive the generated items from DTGen. The following is the results from executing the e1.sql script (sqlplus /nolog @e1).

```
Login to dtgen
Connected.
Remove old DEMO4 Schema from DTGEN
create a DEMO4 Schema in DTGEN
Generate DEMO4 Application
Capture SQL Scripts
```

Similar to the other demonstrations, the output shown above is from the e1.LST log file. The details of modifying schema in DTGen and generating will be covered in following exercises. Below is the output from the install.LST log file that follows the SQL script capture in e1.sql.

```
Login to dtgen_db_demo
Connected.

FILE_NAME
-----
-) create_glob

FILE_NAME
-----
-) create_ods

TABLE_NAME
-----
*** dept ***

TABLE_NAME
-----
```

```

*** emp ***

FILE_NAME
-----
-) create_integ

TABLE_NAME
-----
*** dept ***

TABLE_NAME
-----
*** emp ***

FILE_NAME
-----
-) create_oltp

TABLE_NAME
-----
*** dept ***

TABLE_NAME
-----
*** emp ***

FILE_NAME
-----
-) create_aa

TABLE_NAME
-----
*** dept ***

TABLE_NAME
-----
*** emp ***

FILE_NAME
-----
-) create_mods

```

The portion of the e1.sql script that generated the output above is similar to Exercise #1 in the other demonstrations. However, the following portion of the install.LST log file shows the APEX GUI items that were generated by DTGen being installed.

```

FILE_NAME
-----
-) create flow
  APPLICATION 100 - GUI_DEMO
  Set Credentials...
  Check Compatibility...
API Last Extended:20100513
Your Current Version:20100513
This import is compatible with version: 20100513
COMPATIBLE (You should be able to run this import without issues.)

  Set Application ID...
  ...application processes
  ...Create Flow Process "SET_USR"
  ...Shared Lists of values
  ...Create LOV "JOB NAME"
  ...Remove page 1000
  ...Create page 1000: Maintenance Menu
  ...Navigation Tabs (for Maintenance Menu)
  Adding Maintenance Menu Tab to UTIL_TS ...
  ...Navigation Lists
  ...Create LIST " Maintenance Menu"
  ...Create LIST ENTRY "Dept Maint"
  ...Create LIST ENTRY "Emp Maint"
  ... Add LIST " Maintenance Menu" to page 1000
  ...Remove page 1200
  ...Create page 1200: Utility Log Report
  ...Create UTIL_LOG Report Plug

```

```

...Create Page Processing
...Navigation Tabs (for Utility Log Report)
Adding Utility Log Report Tab to UTIL_TS ...
...Remove page 1400
...Create page 1400: OMNI Reports Menu
...Navigation Tabs (for OMNI Reports Menu)
Adding T_OMNI Tab to UTIL_TS ...
...Navigation Lists
...Create LIST " OMNI Reports Menu"
...Create LIST ENTRY "Dept OMNI"
...Create LIST ENTRY "Emp OMNI"
... Add LIST " OMNI Reports Menu" to page 1400
...Remove page 1600
...Create page 1600: ASOF Reports Menu
...Navigation Tabs (for ASOF Reports Menu)
Adding T_ASOF Tab to UTIL_TS ...
...Navigation Lists
...Create LIST " ASOF Reports Menu"
...Create LIST ENTRY "Dept ASOF"
...Create LIST ENTRY "Emp ASOF"
... Add LIST " ASOF Reports Menu" to page 1600
...Create LIST "Utility Menu"
...Create LIST ENTRY "Maintenance Menu"
...Create LIST ENTRY "Utility Log Report"
...Create LIST ENTRY "OMNI Reports Menu"
...Create LIST ENTRY "ASOF Reports Menu"
Adding Breadcrumbs
...Create BREADCRUMB ENTRY "Maintenance Menu"
...Create BREADCRUMB ENTRY "Dept Maint"
...Create BREADCRUMB ENTRY "Dept Form"
...Create BREADCRUMB ENTRY "Emp Maint"
...Create BREADCRUMB ENTRY "Emp Form"
...Create BREADCRUMB ENTRY "Utility Log Report"
...Create BREADCRUMB ENTRY "OMNI Reports Menu"
...Create BREADCRUMB ENTRY "Dept OMNI"
...Create BREADCRUMB ENTRY "Emp OMNI"
...Create BREADCRUMB ENTRY "ASOF Reports Menu"
...Create BREADCRUMB ENTRY "Dept ASOF"
...Create BREADCRUMB ENTRY "Emp ASOF"

```

All of the output above is the result of GUI navigation items being installed into APEX. The output from the DEPT and EMP data maintenance forms is below.

```

TABLE_NAME
-----
***  dept  ***
dept maint1, 10
...Create Shared LOV "DEPT_LOV"
...Remove page 1010
...Create page 1010: Dept Maint
...Create Main Grid Edit
...Create Filter Criteria
...Create Page Processing
Adding Dept Maint Tab to _MAINT_TS ...
dept maint2, 10
...Create ALL Report
...Create History Report
...Create POP_AUDIT Report
dept form, 10
...Remove page 1210
...Create page 1210: Dept Form
...Create DML Form
...Create Page Processing
Adding Dept Form Tab to _FORM_TS ...
dept omni, 10
...Remove page 1410
...Create page 1410: Dept OMNI
...Create Interactive Report
Adding Dept OMNI Tab to _OMNI_TS ...
dept asof, 10
...Remove page 1610
...Create page 1610: Dept ASOF
...Create Interactive Report
Adding Dept ASOF Tab to _ASOF_TS ...
SCHEMA DTGEN_DB_DEMO - User Interface Defaults, Table Defaults

```



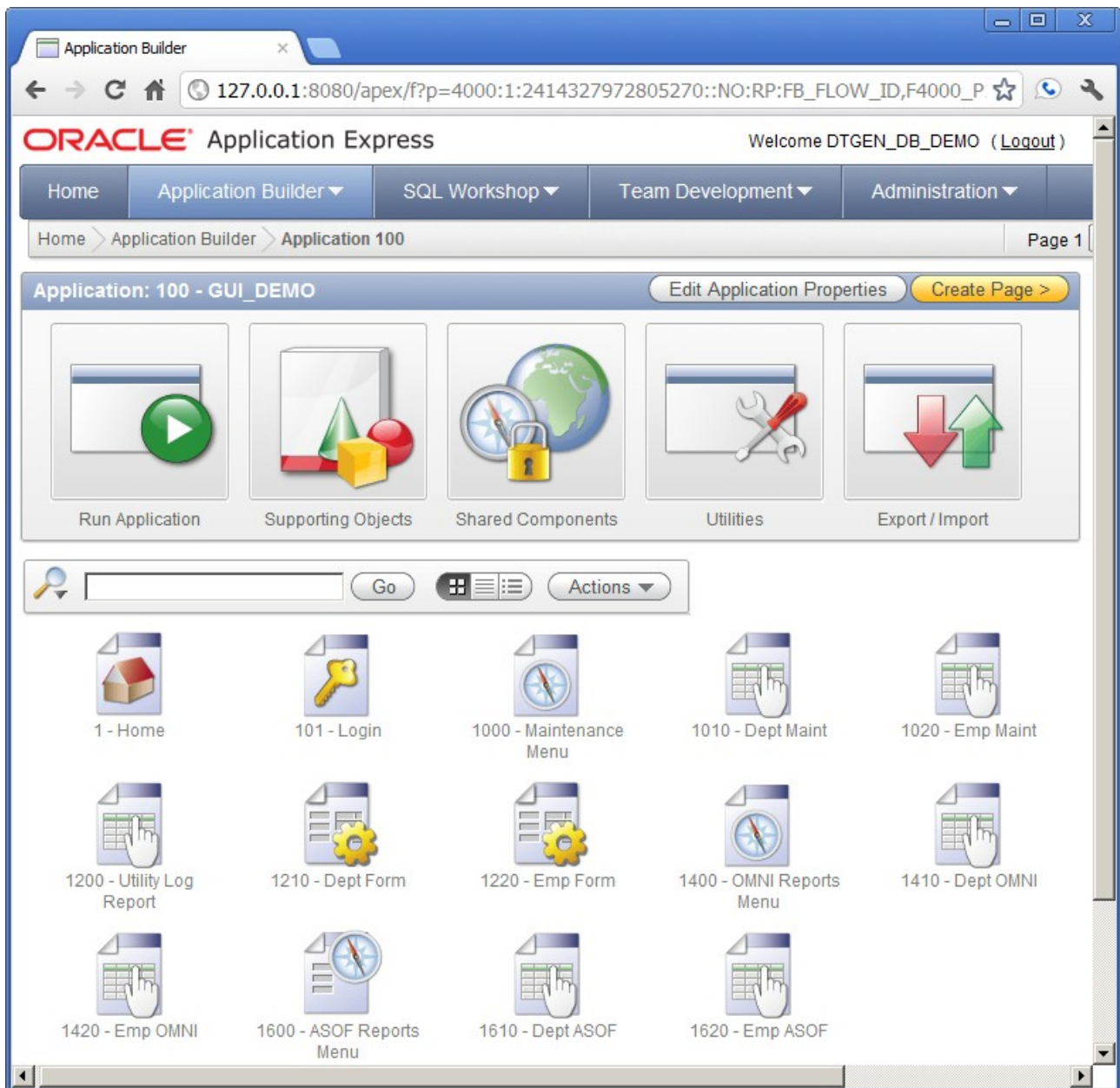
```

TABLE_NAME
-----
***   emp   ***
emp maint1, 20
...Create Shared LOV "EMP_LOV"
...Create Shared LOV "MGR_EMP_LOV"
...Remove page 1020
...Create page 1020: Emp Maint
...Create Main Grid Edit
...Create Filter Criteria
...Create Page Processing
Adding Emp Maint Tab to _MAINT_TS ...
emp maint2, 20
...Create ALL Report
...Create History Report
...Create POP_AUDIT Report
emp form, 20
...Remove page 1220
...Create page 1220: Emp Form
...Create DML Form
...Create Page Processing
Adding Emp Form Tab to _FORM_TS ...
emp omni, 20
...Remove page 1420
...Create page 1420: Emp OMNI
...Create Interactive Report
Adding Emp OMNI Tab to _OMNI_TS ...
emp asof, 20
...Remove page 1620
...Create page 1620: Emp ASOF
...Create Interactive Report
Adding Emp ASOF Tab to _ASOF_TS ...
SCHEMA DTGEN_DB_DEMO - User Interface Defaults, Table Defaults
- User Interface Defaults, Attribute Dictionary
...done

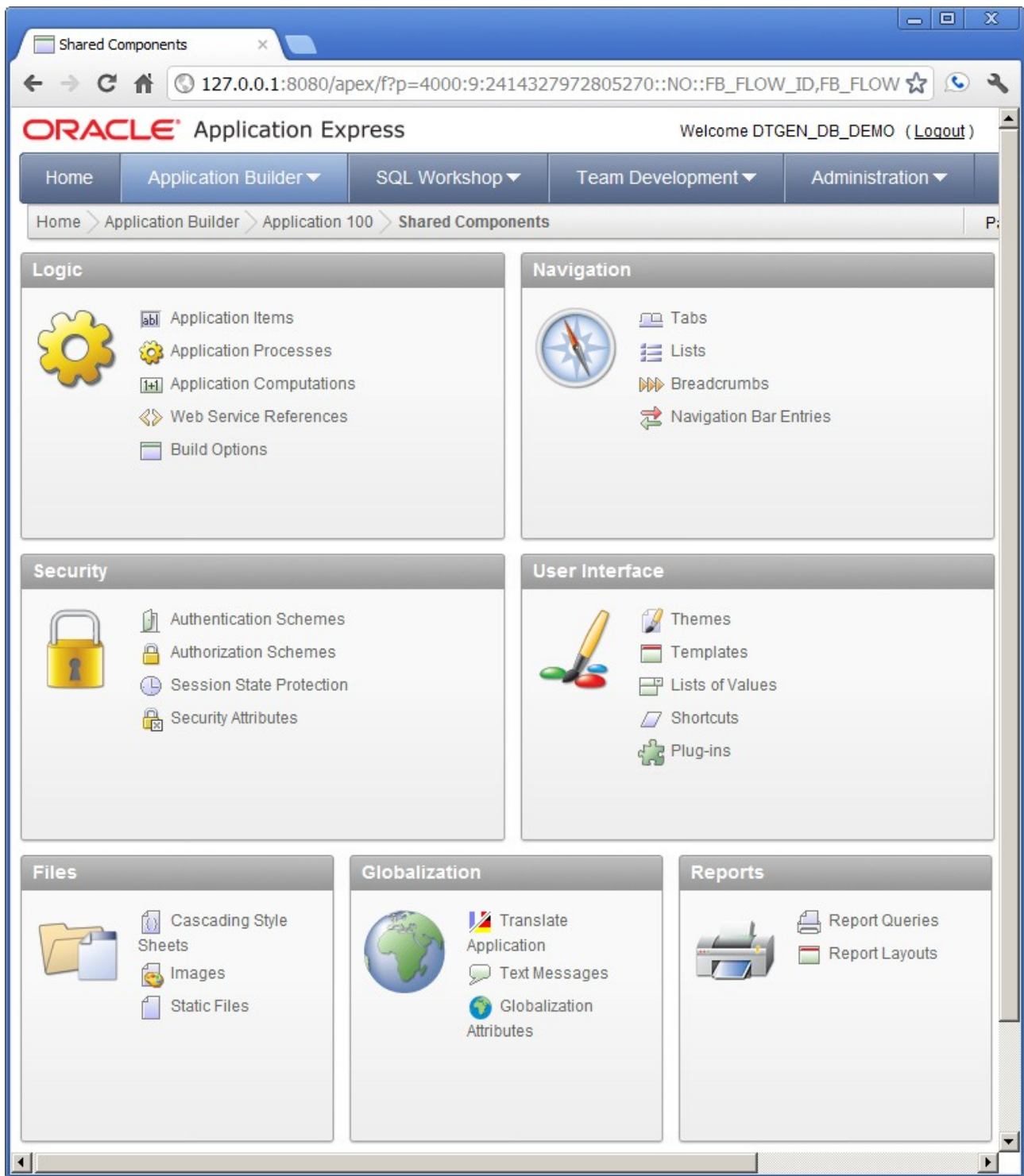
Loading data into database

```

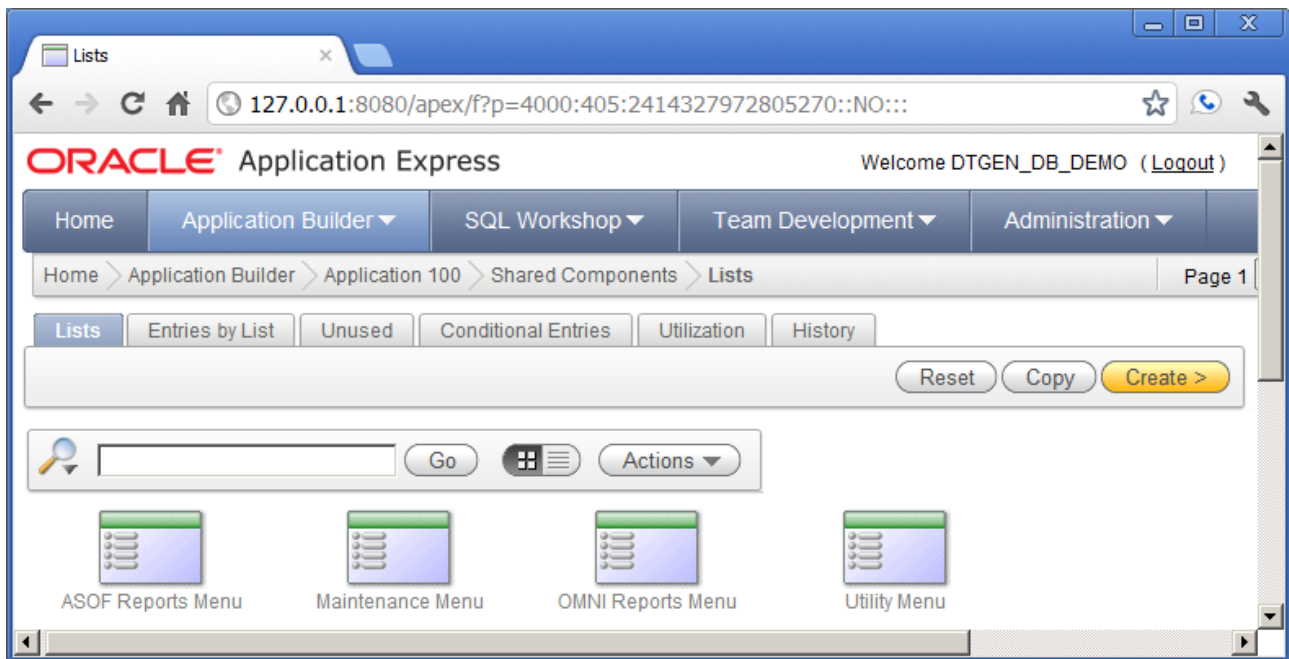
At the end of the output above is the indication that the schema data has been loaded. This is the same data used in the ASOF demonstration. The remaining effort is to "connect" the generated navigation items with the empty application in APEX. This effort starts with a refresh of the application builder page (or login as DTGEN_DB_DEMO and navigate to the GUI_DEMO application page if not logged into APEX).



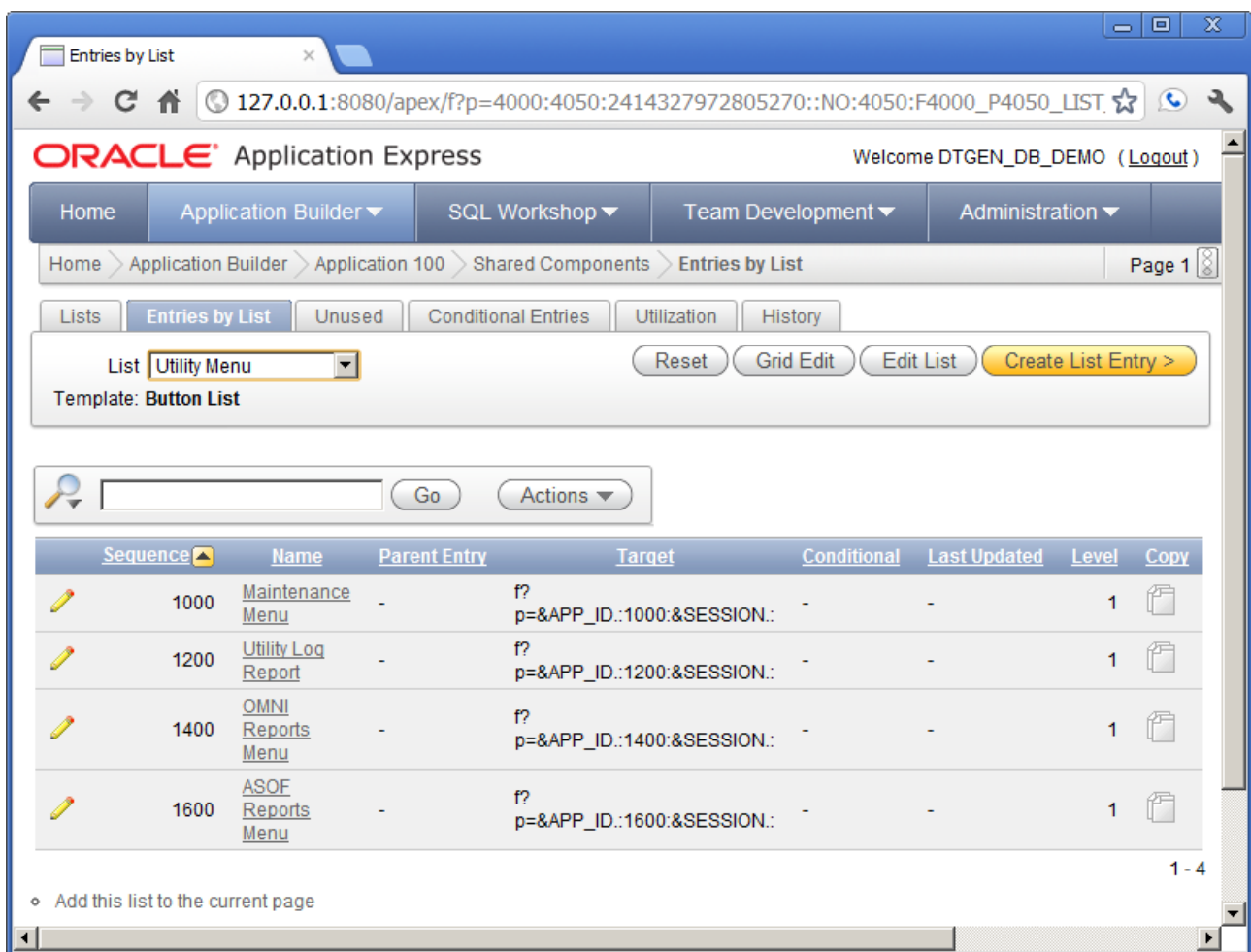
Click the "Shared Components" button



Click the "Lists" link in the "Navigation" pane



Click the "Utility Menu" icon.



Confirm the "Page 1" is in the upper right and click the "Add this list to the current page" link.

Oracle Application Express

Welcome DTGEN_DB_DEMO (Logout)

Home Application Builder SQL Workshop Team Development Administration

Home > Application Builder > Application 100 > Page 1 > Create Region

Create Region

Page: 1 - Home

Region Source Type: LIST

* Title Utility Menu

Region Template Chart List

Parent Region - Select a Parent -

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

* Sequence 20 Column 1

Cancel < Previous Next >

Confirm these values and click the "Next" button

Oracle Application Express

Welcome DTGEN_DB_DEMO (Logout)

Home Application Builder SQL Workshop Team Development Administration

Home > Application Builder > Application 100 > Page 1 > Create Region

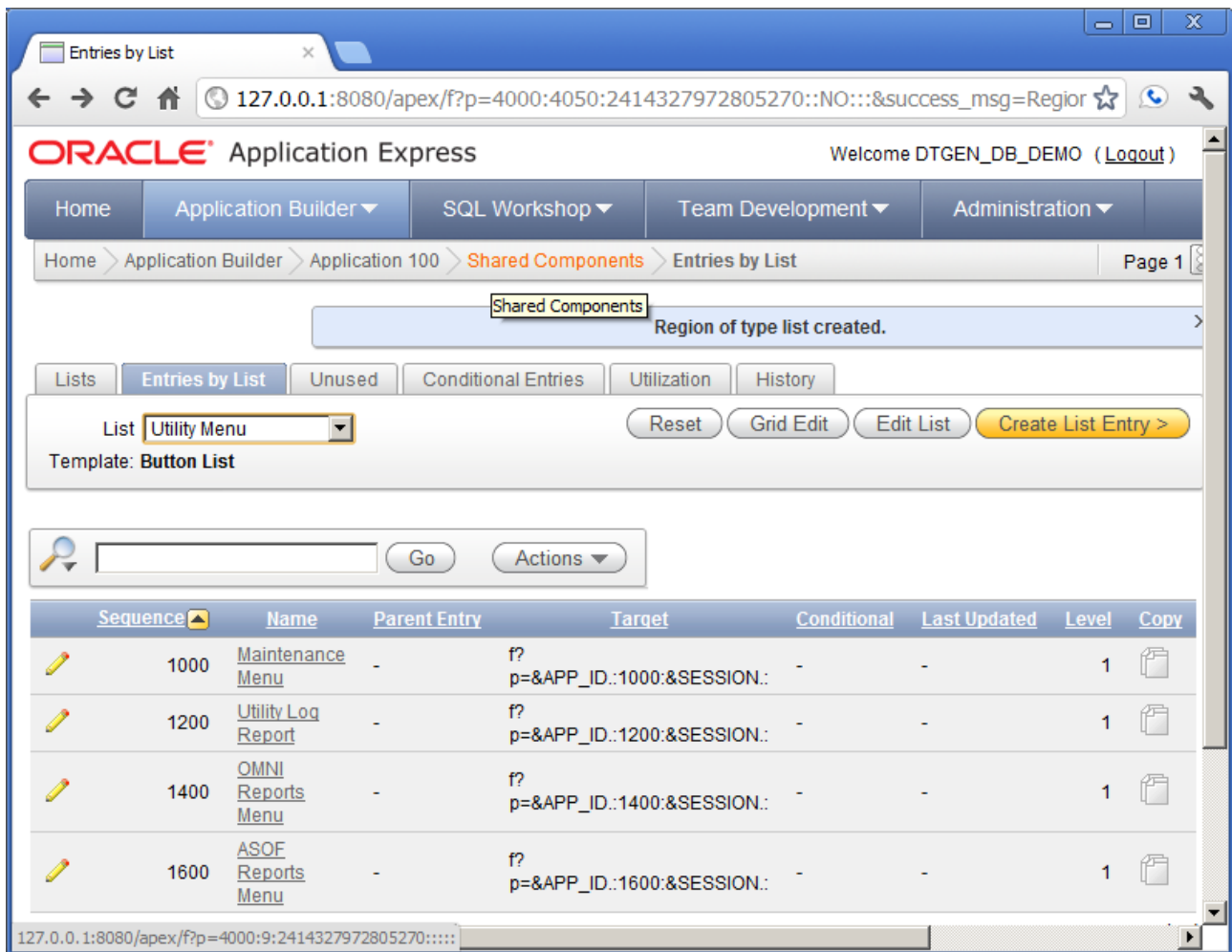
Create Region

* List Utility Menu

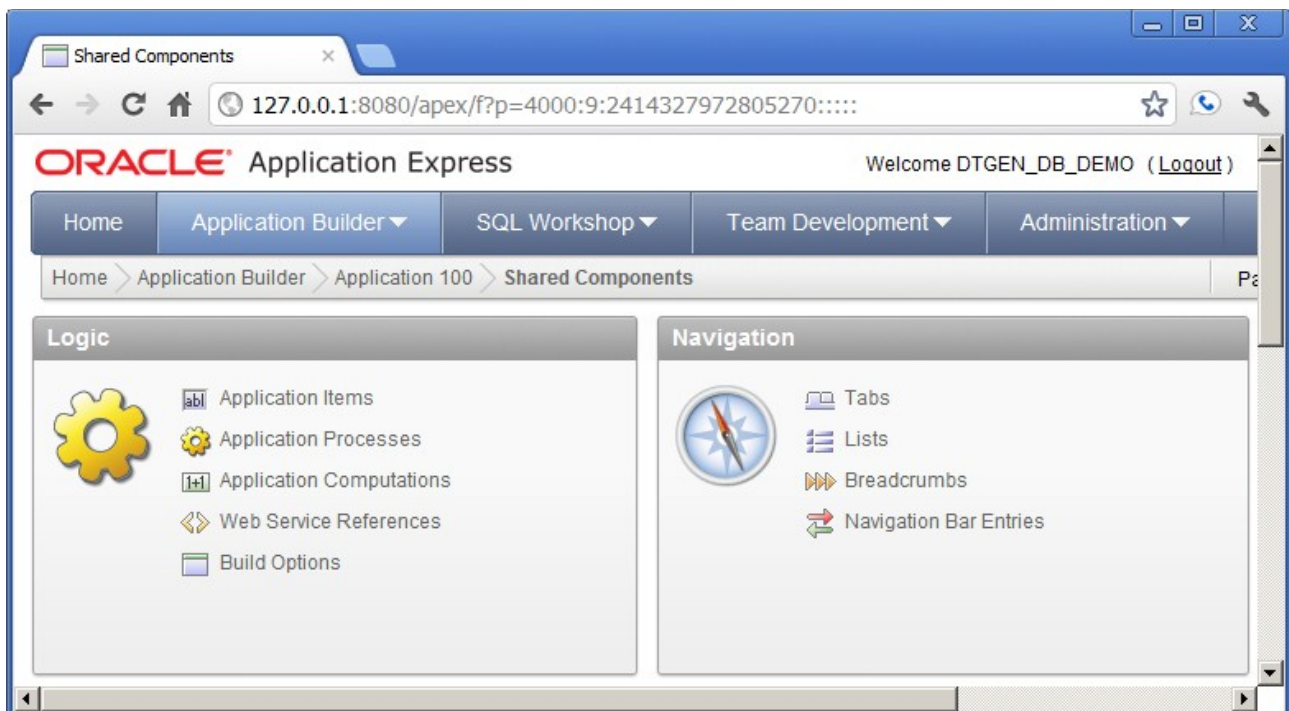
Recently Created or Edited Lists

Cancel < Previous Next > Create List Region

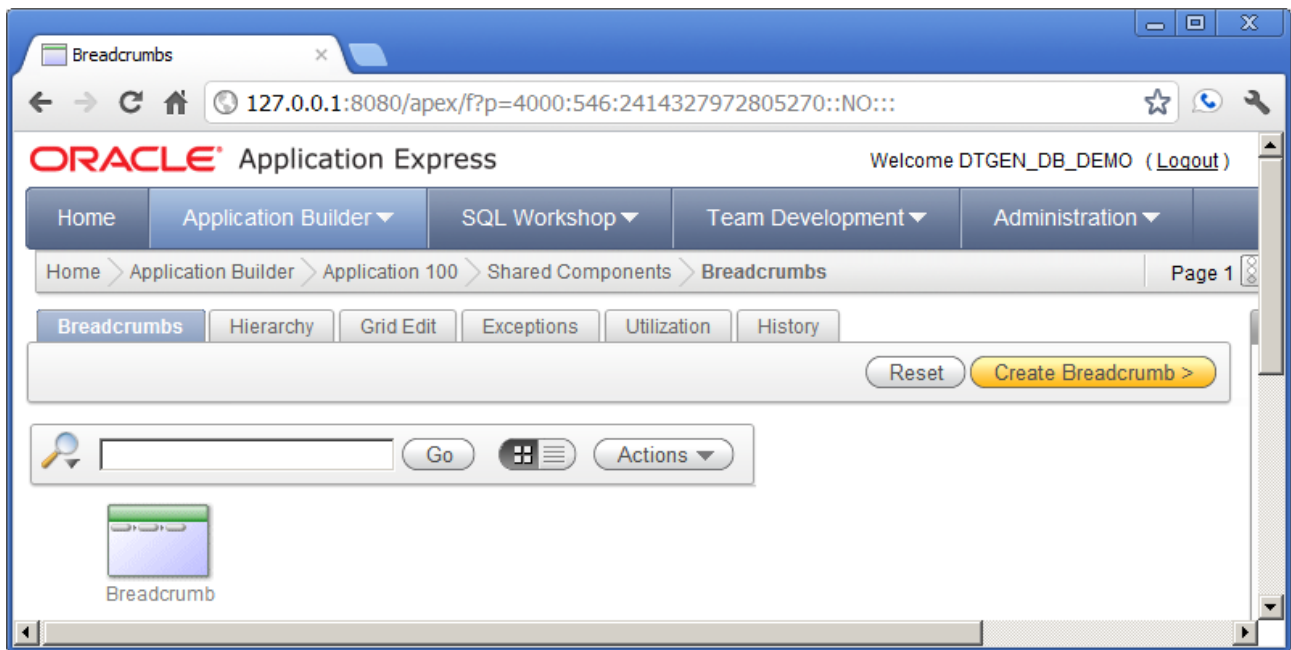
Confirm these values and click the "Create List Region" button



Click the "Shared Components" link in the breadcrumb at the top.



Click the "Breadcrumbs" link in the "Navigation" pane.



Click the "Breadcumb" Icon at the bottom left

Breadcrumb Entries

127.0.0.1:8080/apex/f?p=4000:287:241432797280

ORACLE Application Express Welcome DTGEN_DB_DEMO (Logout)

Home Application Builder SQL Workshop Team Development

Home > Application Builder > Application 100 > Shared Components > Breadcrumbs > Entries

Breadcrumb Breadcrumb Name or Target Page Search

Go Actions Create Breadcrumb

	Name	Sequence	Page	Parent	Page Exists
	Home	10	<u>1</u>	(null)	Yes
	Maintenance Menu	1000	<u>1000</u>	(null)	Yes
	Dept Maint	1010	<u>1010</u>	1000. Maintenance Menu	Yes
	Dept Form	1210	<u>1210</u>	1010. Dept Maint	Yes
	Emp Maint	1020	<u>1020</u>	1000. Maintenance Menu	Yes
	Emp Form	1220	<u>1220</u>	1020. Emp Maint	Yes
	Dept OMNI	1410	<u>1410</u>	1000. Maintenance Menu	Yes
	Emp OMNI	1420	<u>1420</u>	1000. Maintenance Menu	Yes
	Dept ASOF	1610	<u>1610</u>	1000. Maintenance Menu	Yes
	Emp ASOF	1620	<u>1620</u>	1000. Maintenance Menu	Yes
	Utility Log Report	1200	<u>1200</u>	(null)	Yes
	OMNI Reports Menu	1400	<u>1400</u>	(null)	Yes
	ASOF Reports Menu	1600	<u>1600</u>	(null)	Yes

Click the pencil icon to the left of the "Maintenance Menu" name.

Create/Edit Breadcrumb Entry x

127.0.0.1:8080/apex/f?p=4000:290:2414327972805270::NO:290:F4000_P290_ID,FB_ ☆

ORACLE Application Express Welcome DTGEN_DB_DEMO (Logout)

Home Application Builder SQL Workshop Team Development Administration

Home > Application Builder > Application 100 > Shared Components > Breadcrumbs > Entries > Create / Edit Page 1

Breadcrumb Entry: Maintenance Menu Cancel Delete Apply Changes

Show All Breadcrumb Entry Target Conditions Authorization Configuration

Breadcrumb

Breadcrumb Breadcrumb

* Page 1000

Entry

Sequence 1000

Parent Entry Home (Page 1)

* Short Name Maintenance Menu

Long Name

Change the "Parent Entry" to "Home (Page 1)", then click "Apply Changes".

Repeat the above step for the following names:

- Utility Log Report
- OMNI Reports Menu
- ASOF Reports Menu

Oracle Application Express Welcome DTGEN_DB_DEMO (Logout)

Home > Application Builder > **Application 100** > Shared Components > Breadcrumbs > Entries

Application 100 Action processed.

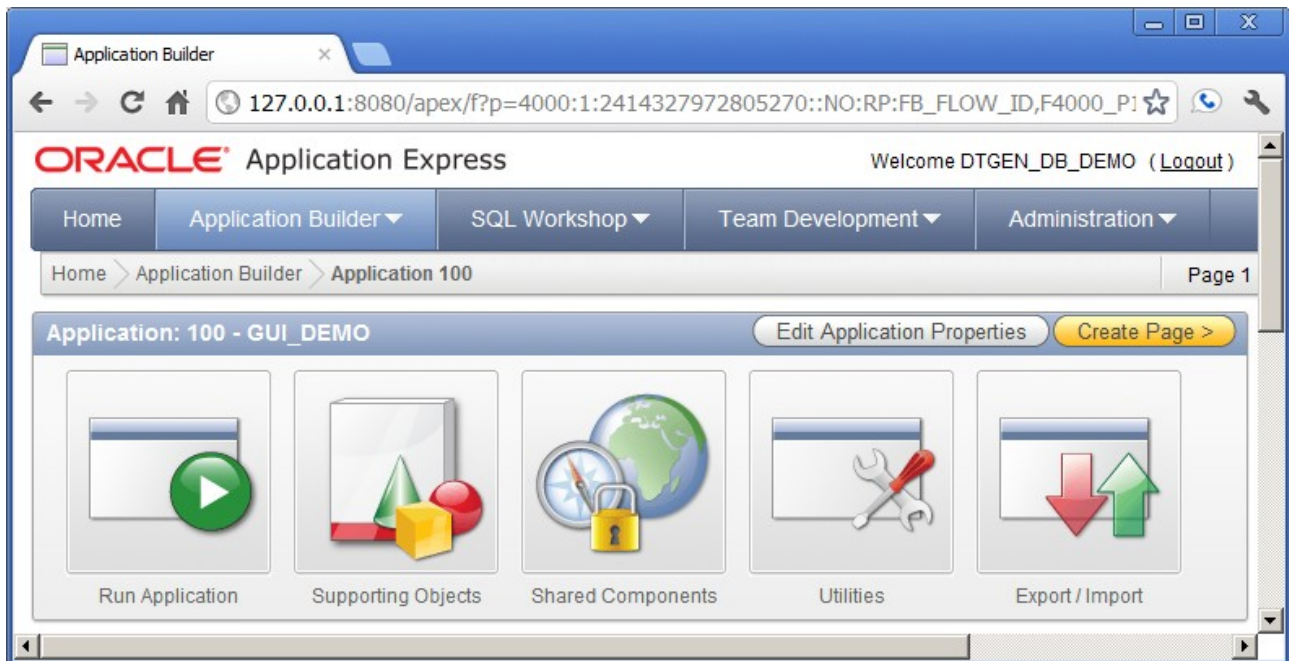
Breadcrumb Name or Target Page Set

Go Actions

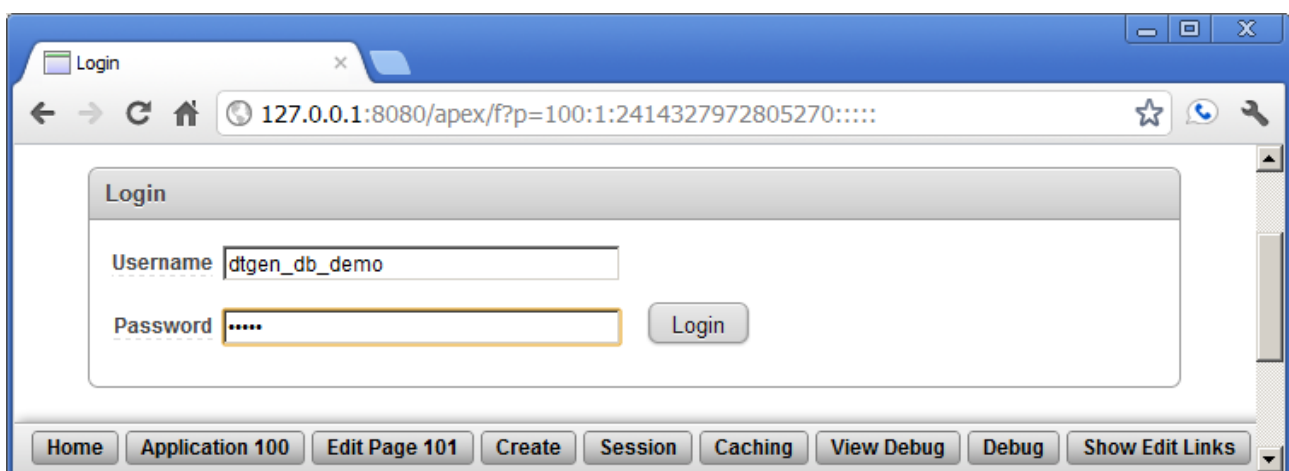
Name	Sequence	Page	Parent	Page Exists
Home	10	<u>1</u>	(null)	Yes
Maintenance Menu	1000	<u>1000</u>	1. Home	Yes
Dept Maint	1010	<u>1010</u>	1000. Maintenance Menu	Yes
Dept Form	1210	<u>1210</u>	1010. Dept Maint	Yes
Emp Maint	1020	<u>1020</u>	1000. Maintenance Menu	Yes
Emp Form	1220	<u>1220</u>	1020. Emp Maint	Yes
Dept OMNI	1410	<u>1410</u>	1000. Maintenance Menu	Yes
Emp OMNI	1420	<u>1420</u>	1000. Maintenance Menu	Yes
Dept ASOF	1610	<u>1610</u>	1000. Maintenance Menu	Yes
Emp ASOF	1620	<u>1620</u>	1000. Maintenance Menu	Yes
Utility Log Report	1200	<u>1200</u>	1. Home	Yes
OMNI Reports Menu	1400	<u>1400</u>	1. Home	Yes
ASOF Reports Menu	1600	<u>1600</u>	1. Home	Yes

127.0.0.1:8080/apex/f?p=4000:1:2414327972805270::NO:RP:FB_FLOW_ID,F4000_P1_FLOW:100,100

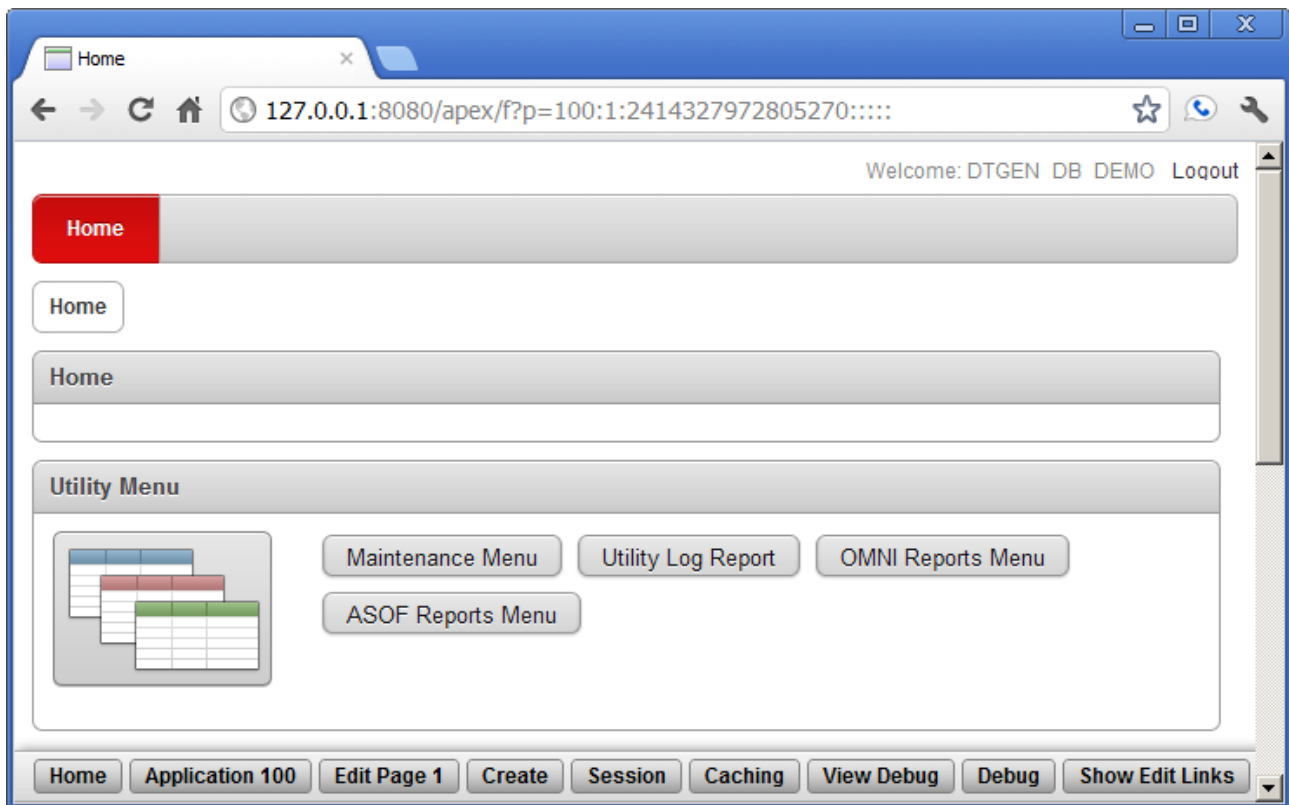
After repeating the steps, confirm values and click the "Application 100" link in the breadcrumb at the top.



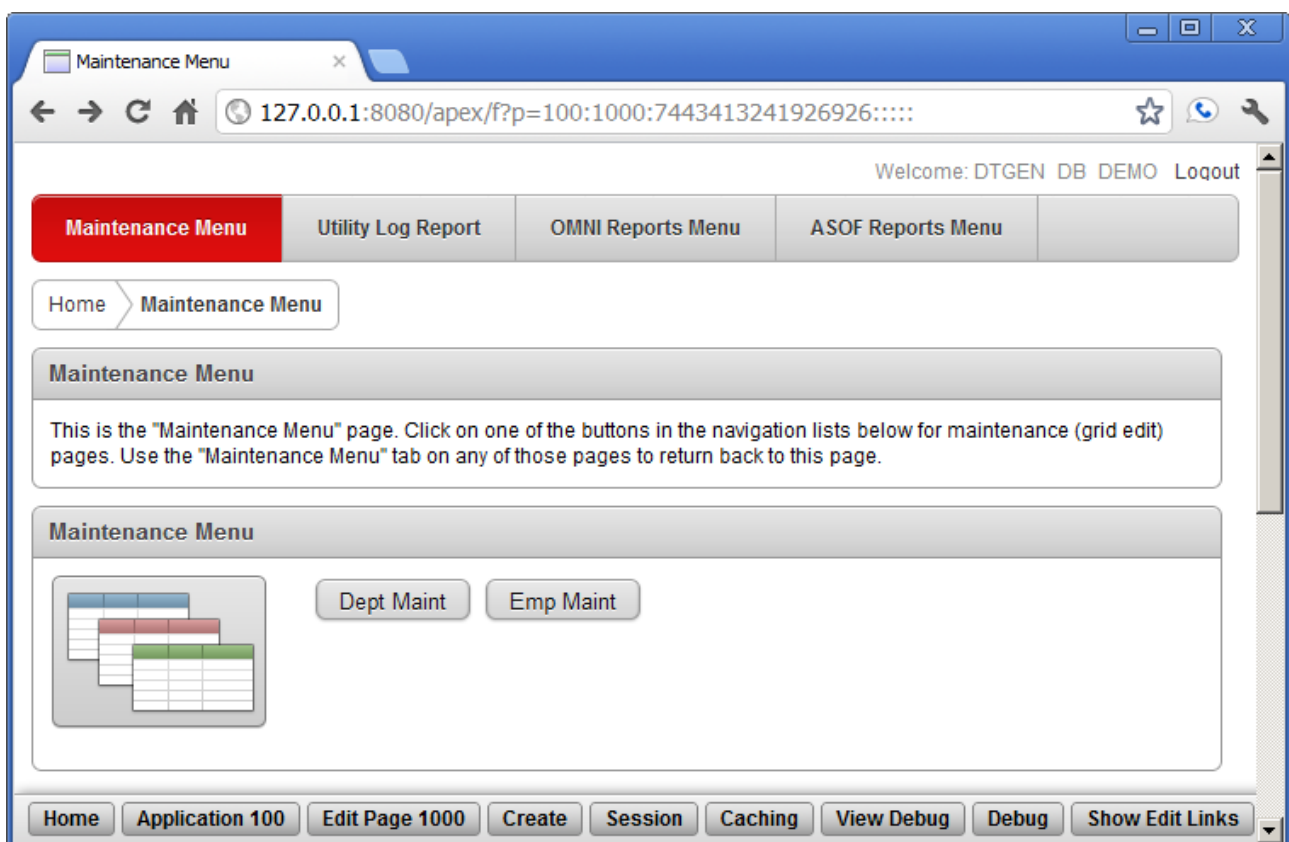
Click the "Run Application" button.



Enter the password "dtgen" and click the "Login" button.



Click the "Maintenance Menu" button in the "Utility Menu" pane.



Click the "Dept Maint" button in the "Maintenance Menu" pane.

Dept Maint

127.0.0.1:8080/apex/f?p=100:1010:7443413241926926:::::

Welcome: DTGEN DB DEMO Logout

Dept Maint

Emp Maint

Home Maintenance Menu Dept Maint

Dept Maint

Cancel

Delete

Submit

<input type="checkbox"/>	ID	Form Link	Deptno	Dname	Loc	Aud Beg Usr	Aud Beg DTM
<input type="checkbox"/>	1		10	ACCOUNTIN	NEW YORK	Dataload	01-NOV-1980 00:00:00.000000000
<input type="checkbox"/>	2		20	RESEARCH	DALLAS	Dataload	01-NOV-1980 00:00:00.000000000
<input type="checkbox"/>	3		30	SALES	CHICAGO	THOMPSON	17-AUG-1982 00:00:00.000000000
<input type="checkbox"/>	4		40	OPERATION	BOSTON	JAMES	12-FEB-1982 00:00:00.000000000

1 - 4

Rows Updated:
Rows Inserted:

Add Row

Cancel and Create New Row with Form

Filter Criteria (Press ENTER in any field to activate filter, cancels all changes))

ID Range from:
to:

Deptno Range from:
to:

Dname Search:

Loc Search:

AUD_BEG_USR Search:

EFF_BEG_DTM Range from:
to:

(CANCELS pending changes)
HIDE_HISTORY

Home Application 100 Edit Page 1010 Create Session Caching View Debug Debug Show Edit Links

This is the DEPT data maintenance form for the new application in APEX. This is not a completed application. These data maintenance forms and reports are not expected to be used by the application user. They are expected to become part of a super-user or application administrator's toolset, if they are used in the application. Customized forms that are more user-friendly should be added to this application before it is released to the application users.

Exercise #2: Data Domain Filterable Grid Edit

Event Sequence:

APEX Forms

Exercise #2 modifies the database. The "drop_demo_users.sql", "create_demo_users.sql", and "e1.sql" scripts must be used to reset the database before re-running this exercise.

Exercise #1 finished with a DEPT maintenance form display in the APEX GUI. This exercise starts at that point. The data domain filterable grid edit is shown in the maintenance form. The grid edit portion is in the "Dept Maint" pane. Investigation of the grid edit is not pursued in detail in this exercise. Most of the fields and buttons in the "Dept Maint" pane should be self-evident. All the data sorting and modification should be functional. This is basically the grid edit functionality that APEX offers when creating a new page in an application.

The data domain filter is the "Filter Criteria" pane at the bottom of the form. This filter is custom generated for each data type of each data field. As an example of how the filter works, enter "Dataload" in the "AUD_BEG_USR Search:" field and press ENTER. The screen should look like the following:

Dept Maint

Welcome: DTGEN DB DEMO Logout

Dept Maint Emp Maint

Home Maintenance Menu Dept Maint

Dept Maint

Cancel Delete Submit

<input type="checkbox"/>	ID	Form Link	Deptno	Dname	Loc	Aud Beg Usr	Aud Beg DTM
<input type="checkbox"/>	1		10	ACCOUNTIN	NEW YORK	Dataload	01-NOV-1980 00:00:00.000000000
<input type="checkbox"/>	2		20	RESEARCH	DALLAS	Dataload	01-NOV-1980 00:00:00.000000000

1 - 2

Rows Updated: Rows Inserted:

Add Row Cancel and Create New Row with Form

Filter Criteria (Press ENTER in any field to activate filter, cancels all changes))

ID Range from: to:

Deptno Range from: to:

Dname Search:

Loc Search:

AUD_BEG_USR Search: Dataload

EFF_BEG_DTM Range from: to:

(CANCELS pending changes) HIDE_HISTORY

Home Application 100 Edit Page 1010 Create Session Caching View Debug Debug Show Edit Links

The rows of the grid edit have been reduced to only the rows with an "Audit Begin User" of "Dataload". Select "Show History" at the bottom of the page to get this view at the bottom of the form:

Dept Maint

127.0.0.1:8080/apex/f?p=100:1010:7443413241926926::NO::P1010_SHOW_HIST:SHOW_HISTORY

AUD_BEG_USR Search:

EFF_BEG_DTM Range from: to:

(CANCELS pending changes)

All Dept

Q-

	<u>Id</u>	<u>Stat</u>	<u>Deptno</u>	<u>Dname</u>	<u>Loc</u>	<u>Aud Beg Usr</u>	<u>Aud End Usr</u>	<u>Aud Beg Dtm</u>	<u>Aud End Dtm</u>
	1	ACT	10	ACCOUNTING	NEW YORK	Dataload	-	01-NOV-80 12.00.00.000000 AM	-
	2	ACT	20	RESEARCH	DALLAS	Dataload	-	01-NOV-80 12.00.00.000000 AM	-

1 - 2

Dept History

Dept ID:
no data found

Pop Audit

no data found

Home Application 100 Edit Page 1010 Create Session Caching View Debug Debug Show Edit Links

release 1.0

In this bottom part of the form, the "All Instances" view of current and historical data is contained in the "All Dept" pane. This is a standard APEX Interactive Report. Additional filters and sorting can be done via the search bar. Note that the interactive report is filtered by the current limitation on "Audit Begin User". Clear that field and press ENTER to get the following screen:

Dept Maint
127.0.0.1:8080/apex/f?p=100:1010:1228033700848101::NO::P1010_SHOW_HIST:SHOW_HISTORY

AUD_BEG_USR Search:
EFF_BEG_DTM Range from: to:
(CANCELS pending changes) SHOW_HISTORY

All Dept

Q- Go Actions

	Id	Stat	Deptno	Dname	Loc	Aud Beg Usr	Aud End Usr	Aud Beg Dtm	Aud End Dtm
	1	ACT	10	ACCOUNTING	NEW YORK	Dataload	-	01-NOV-80 12.00.00.000000 AM	-
	2	ACT	20	RESEARCH	DALLAS	Dataload	-	01-NOV-80 12.00.00.000000 AM	-
	3	ACT	30	SALES	CHICAGO	THOMPSON	-	17-AUG-82 12.00.00.000000 AM	-
	4	ACT	40	OPERATIONS	BOSTON	JAMES	-	12-FEB-82 12.00.00.000000 AM	-

1 - 4

Dept History

Dept ID:
no data found

Pop Audit

no data found

Home Application 100 Edit Page 1010 Create Session Caching View Debug Debug Show Edit Links





Notice that all the active records appear in the "All Dept" pane, similar to the records in the "Dept Maint" pane (not shown). There are no departments that have been "deleted", so there are no current instances of a department in history (i.e. STAT column has all 'ACT' and no 'AUD'). Click the gird icon at the left side of the SALES record in the "ALL Dept" pane.

Dept Maint

127.0.0.1:8080/apex/f?p=100:1010:1228033700848101::NO:RP:P1010_POP_ID,P1010_POP_STAT:3,AC

All Dept


Q- Go Actions ▾

	<u>Id</u>	<u>Stat</u>	<u>Deptno</u>	<u>Dname</u>	<u>Loc</u>	<u>Aud Beg Usr</u>	<u>Aud End Usr</u>	<u>Aud Beg Dtm</u>	<u>Aud End Dtm</u>
	1	ACT	10	ACCOUNTING	NEW YORK	Dataload	-	01-NOV-80 12.00.00.00000000 AM	-
	2	ACT	20	RESEARCH	DALLAS	Dataload	-	01-NOV-80 12.00.00.00000000 AM	-
	3	ACT	30	SALES	CHICAGO	THOMPSON	-	17-AUG-82 12.00.00.00000000 AM	-
	4	ACT	40	OPERATIONS	BOSTON	JAMES	-	12-FEB-82 12.00.00.00000000 AM	-

1 - 4

Dept History

Dept ID: 3

<u>Dept Id</u>	<u>Aud Beg Dtm</u> 	<u>Aud End Dtm</u>	<u>Deptno</u>	<u>Dname</u>	<u>Loc</u>	<u>Aud Beg Usr</u>	<u>Aud End Usr</u>
3	01-NOV-1980 00:00:00.0000000000	17-AUG-1982 00:00:00.0000000000	20	SALES	ST LOUIS	Dataload	THOMPSON

1 - 1

Pop Audit

no data found

Home Application 100 Edit Page 1010 Create Session Caching View Debug Debug Show Edit Links release 1.0

Selecting the SALES department instance in the "All Dept" pane shows the history of the SALES department in the "Dept History" pane. The sales department was in St. Louis from November 1980 before moving to Chicago in August 1982. Click the "POP Dept ID" button in the "All Dept" pane.

The screenshot shows the 'Dept Maint' application in a web browser. The address bar displays '127.0.0.1:8080/apex/f?p=100:1010:4050933051801233:::'. The application has three main sections:

- All Dept:** A table listing departments with columns: Id, Stat, Deptno, Dname, Loc, Aud Beg Usr, Aud End Usr, Aud Beg Dtm, and Aud End Dtm. It shows four active departments (ACT) in New York, Dallas, St Louis, and Boston.
- Dept History:** A section for tracking department changes. It shows 'Dept ID: 3' and a 'POP Dept ID' button. Below it, it states 'no data found'.
- Pop Audit:** A table showing audit records with columns: Dept Id, Pop Dml, Pop Dtm, Deptno, Dname, Loc, Aud Beg Usr, Aud Prev Beg Usr, Aud Beg Dtm, Aud Prev Beg Dtm, and Pop Usr. It shows a single record for department 3, where an 'UPDATE' was undone.

At the bottom, there is a navigation bar with buttons: Home, Application 100, Edit Page 1010, Create, Session, Caching, View Debug, Debug, and Show Edit Links. The version 'release 1.0' is noted in the bottom right corner.

Pressing this button performed an "UNDO" the sales department move to Chicago and created a POP Audit record that is now displayed. Notice that the "Pop Dml" column indicates that an "UPDATE" was undone. Also notice that the "POP Dept ID" button is ready to UNDO the insert that created the department in the first place. This UNDO would also be recorded in the Pop Audit.

The changes made here are permanent in that APEX commits each submit to the database. However, when using the DML API, a POP that is part of a pending transaction can be rolled-back, i.e. UNDO the UNDO. Once the POP is committed, there is no DTGen generated code that can UNDO it.

Exercise #3: Comprehensive OMNI View Forms

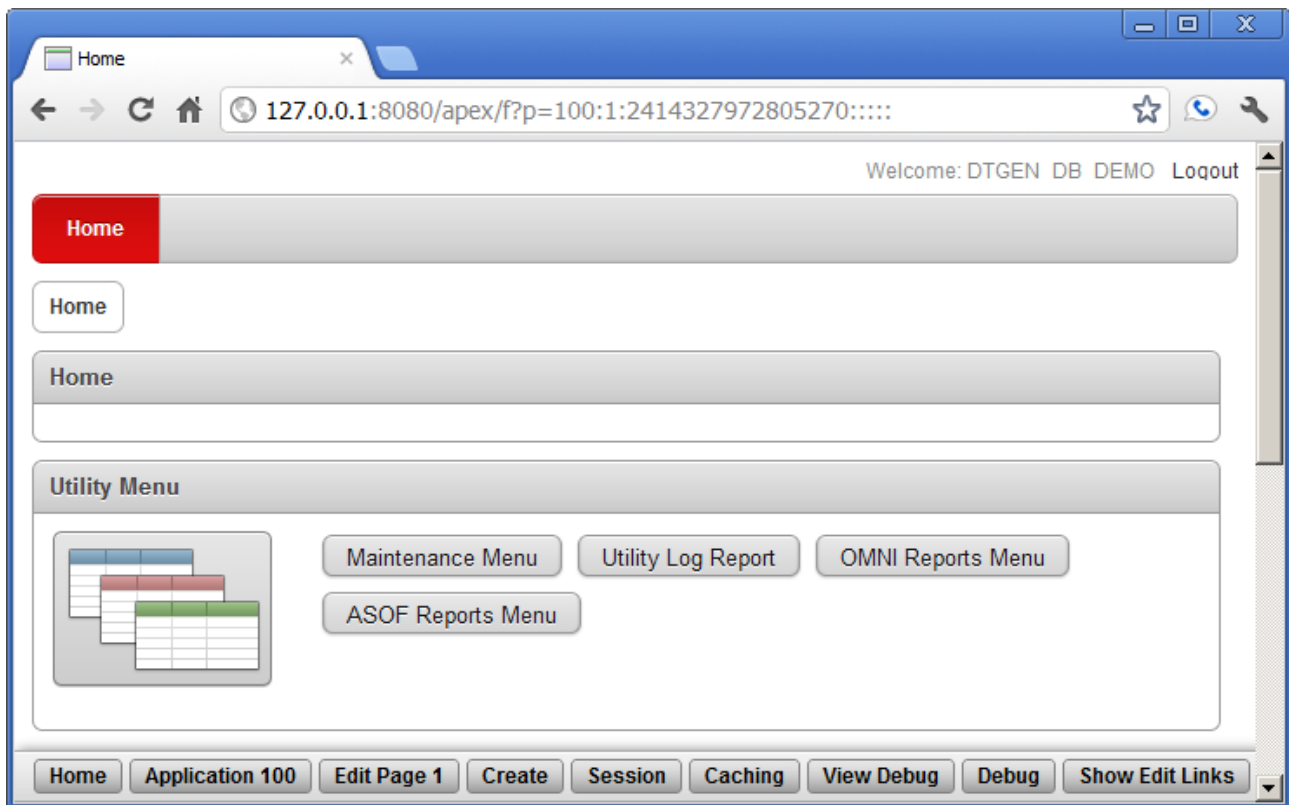
Event Sequence:

APEX Forms

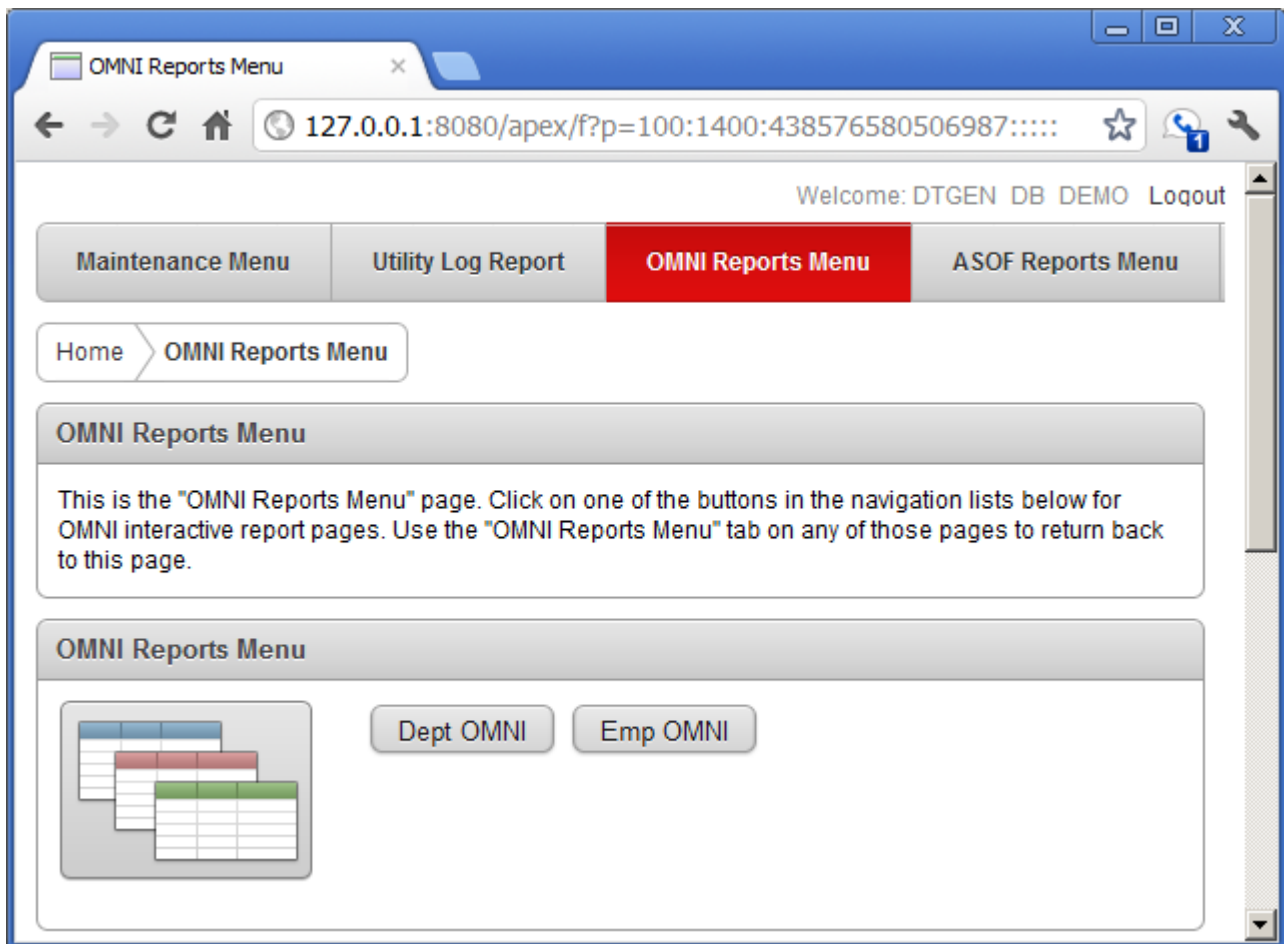
Exercise #3 does not modify the database. This exercise can be repeated without problem.

Exercise #2 showed the grid edit, filterable domain data, and also the history of an entity instance, specifically the instance history of the SALES department. Between active, history, and pop audit data, coupled with the ability change natural key data and most any other data item, finding a specific record can be a challenge. The OMNI view is a standard APEX interactive report that combines all the data from active, history, and pop audit into one searchable view.

Navigate to the home page of the generated application. If starting this exercise from the end of exercise #2, click the "Home" link in the breadcrumb at the top left of the "Dept Main" form. The home page should look like this:



Click the "OMNI Reports Menu" button in the "Utility Menu" pane.



Click the "Emp OMNI" button in the "OMNI Reports Menu" pane.

Emp OMNI

Welcome: DTGEN DB DEMO Logout

Dept OMNI Emp OMNI

Home Maintenance Menu Emp OMNI

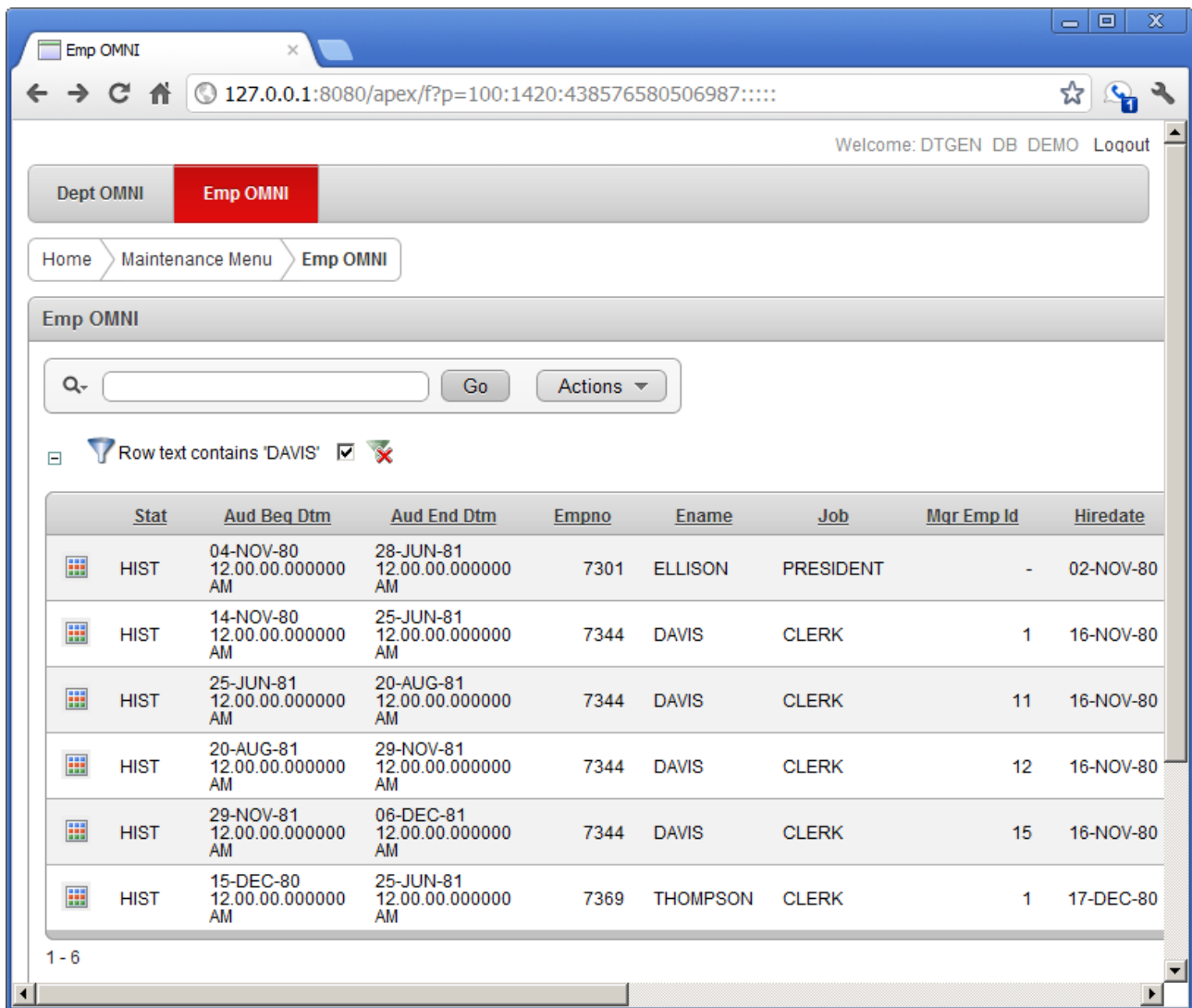
Emp OMNI

Q- Go Actions

Stat	Aud Beg Dtm	Aud End Dtm	Empno	Ename	Job	Mgr Emp Id	Hiredate	Sal	Comm	Dept Id	Eff Beg Dtm	Eff End Dtm	Aud E
ACT	26-FEB-83 12.00.00.000000 AM	-	7369	SMITH	CLERK	18	17-DEC-80	800	-	2	26-FEB-83 12.00.00.000000 AM	-	SMITH
ACT	12-MAY-81 12.00.00.000000 AM	-	7499	ALLEN	SALESMAN	8	20-FEB-81	1600	300	3	15-MAY-81 12.00.00.000000 AM	-	THOMF
ACT	14-MAY-81 12.00.00.000000 AM	-	7521	WARD	SALESMAN	8	22-FEB-81	1250	500	3	15-MAY-81 12.00.00.000000 AM	-	THOMF
ACT	29-NOV-81 12.00.00.000000 AM	-	7566	JONES	MANAGER	15	02-APR-81	2975	-	2	29-NOV-81 12.00.00.000000 AM	-	SMITH
ACT	30-NOV-81 12.00.00.000000 AM	-	7698	BLAKE	MANAGER	15	01-MAY-81	2850	-	3	29-NOV-81 12.00.00.000000 AM	-	SMITH
ACT	26-NOV-81 12.00.00.000000 AM	-	7782	CLARK	MANAGER	15	09-JUN-81	2450	-	1	29-NOV-81 12.00.00.000000 AM	-	SMITH
ACT	06-SEP-81 12.00.00.000000 AM	-	7844	TURNER	SALESMAN	8	08-SEP-81	1500	0	3	08-SEP-81 12.00.00.000000 AM	-	SMITH
ACT	26-SEP-81 12.00.00.000000 AM	-	7654	MARTIN	SALESMAN	8	28-SEP-81	1250	1400	3	28-SEP-81 12.00.00.000000 AM	-	SMITH
ACT	18-NOV-81 12.00.00.000000 AM	-	7839	KING	PRESIDENT	-	17-NOV-81	5000	-	1	17-NOV-81 12.00.00.000000 AM	-	SMITH
ACT	05-DEC-81 12.00.00.000000 AM	-	7900	JAMES	CLERK	8	03-DEC-81	950	-	3	03-DEC-81 12.00.00.000000 AM	-	SMITH
ACT	01-DEC-81 12.00.00.000000 AM	-	7902	FORD	ANALYST	6	03-DEC-81	3000	-	2	03-DEC-81 12.00.00.000000 AM	-	SMITH
ACT	21-JAN-82 12.00.00.000000 AM	-	7934	MILLER	CLERK	9	23-JAN-82	1300	-	1	23-JAN-82 12.00.00.000000 AM	-	JAMES
ACT	11-DEC-82 12.00.00.000000 AM	-	7788	SCOTT	ANALYST	6	09-DEC-82	3000	-	2	09-DEC-82 12.00.00.000000 AM	-	JAMES
ACT	12-JAN-83 12.00.00.000000 AM	-	7876	ADAMS	CLERK	20	12-JAN-83	1100	-	2	12-JAN-83 12.00.00.000000 AM	-	SMITH
HIST	04-NOV-80 12.00.00.000000 AM	28-JUN-81 12.00.00.000000 AM	7301	ELLISON	PRESIDENT	-	02-NOV-80	4000	-	1	02-NOV-80 12.00.00.000000 AM	30-JUN-81 12.00.00.000000 AM	DAVIS

1 - 15

In the form above the first 15 of all the EMP records in the database are shown. These include records from EMP_ACT, EMP_HIST, and EMP_PDAT. To narrow the records to only those that have the name DAVIS, enter DAVIS to the right of the magnifying glass icon and click the "Go" button.



Emp OMNI

Welcome: DTGEN DB DEMO Logout

Dept OMNI Emp OMNI

Home Maintenance Menu Emp OMNI

Emp OMNI

Q- Go Actions

Row text contains 'DAVIS' ☒ ☐

Stat	Aud Beg Dtm	Aud End Dtm	Empno	Ename	Job	Mgr Emp Id	Hiredate
HIST	04-NOV-80 12.00.00.000000 AM	28-JUN-81 12.00.00.000000 AM	7301	ELLISON	PRESIDENT	-	02-NOV-80
HIST	14-NOV-80 12.00.00.000000 AM	25-JUN-81 12.00.00.000000 AM	7344	DAVIS	CLERK	1	16-NOV-80
HIST	25-JUN-81 12.00.00.000000 AM	20-AUG-81 12.00.00.000000 AM	7344	DAVIS	CLERK	11	16-NOV-80
HIST	20-AUG-81 12.00.00.000000 AM	29-NOV-81 12.00.00.000000 AM	7344	DAVIS	CLERK	12	16-NOV-80
HIST	29-NOV-81 12.00.00.000000 AM	06-DEC-81 12.00.00.000000 AM	7344	DAVIS	CLERK	15	16-NOV-80
HIST	15-DEC-80 12.00.00.000000 AM	25-JUN-81 12.00.00.000000 AM	7369	THOMPSON	CLERK	1	17-DEC-80

1 - 6

Only 6 records are returned, each with the name DAVIS in the record somewhere. All of these records are from the EMP_HIST table.

Logout of the application clicking the "Logout" link at the top right of the page. Logout of APEX by clicking the "Logout" link at the top right of any APEX page (not shown here).