



Oracle APEX - Building Database Applications

Description:

BISP is committed to provide BEST learning material to the beginners and advance learners. In the same series, we have prepared a complete end-to-end Hands-on Beginner's Guide for Oracle Application Express. The document focuses on basic keywords, terminology and definitions one should know before Oracle APEX and creating 1st Database Application. **Join our professional training program and learn from experts.**

History:

Version	Description Change	Author	Publish Date
0.1	Initial Draft	Shiva Kant Pandey	Aug 2012
0.1	Review#1	Amit Sharma	Aug 2012

Table of Contents

Application Builder	3
Difference between Database application & Websheet Applications	3
Stepwise Procedure of Building Database Applications.....	3
Working with component Application Builder :.....	4
To Create an Application Using First Subcomponent (Database Applications) :	5
To Create an Application Using Second Subcomponent (Spreadsheet Applications) :	10
To Create an Application Using Third Subcomponent (Websheet Applications) :.....	16
Installation of Packaged Application Using fourth Subcomponent (Packaged Applications)	19

BIS

Application Builder

Oracle Application Builder is one of the Oracle Apex Components & it is mainly used to develop new applications.

It can mainly build two types of application & these are

- Database Application
- Websheet applications

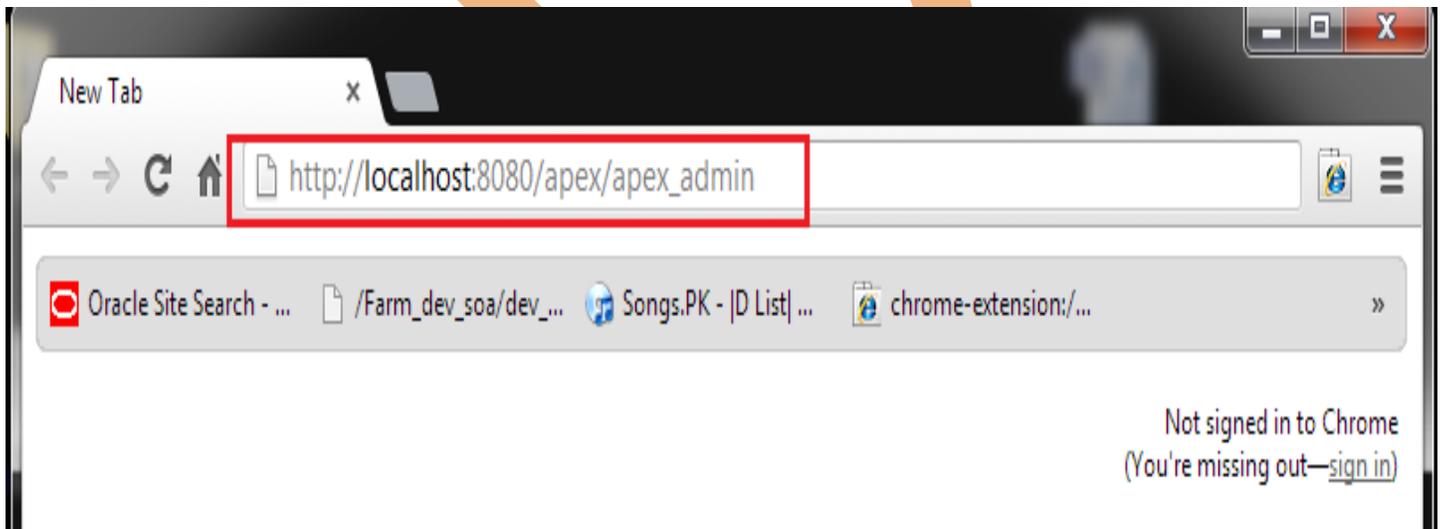
Difference between Database application & Websheet Applications

- A database application is a collection of pages that share a common session state and authentication. Developers create database objects using SQL Workshop and then create an application using a wizard. Database application enables developers to manually control all aspects of the development process. You can manually add and customize components (reports, charts, or forms), page controls (buttons, items, list of values), and shared components (breadcrumbs, lists, or tabs)
- A websheet application is geared for the business user and requires no prior development experience. Each websheet application is a collection of pages designed for Web-based data entry and reporting. When you create a websheet application, Application Builder automatically handles the creation of tables, triggers, and sequences. Websheets offer an easy, declarative approach to report and form layout as well as the creation list of values and validations

Stepwise Procedure of Building Database Applications

Step 1:

Open internet browser & write " http://localhost:8080/apex " into the URL address bar & click Enter button to open Oracle Apex Admin login page .



Step 2: To login inside work space complete required blank fields

- Workspace = BHEL
- Username = DEV01
- Password = *****
- Click Login to application express

Application Express Login



Oracle Application Express is a rapid Web application development tool that lets you share data and create custom applications. Using only a Web browser and limited programming experience, you can develop and deploy powerful applications that are both fast and secure. [Learn how to get started.](#)

Workspace

Username

Password

[Reset Password](#)

Login to Application Express

Working with component Application Builder:

Step 3: Click on Application Builder to create or edit an application

Step 4: Now Application Builder is further divided into following sub components :

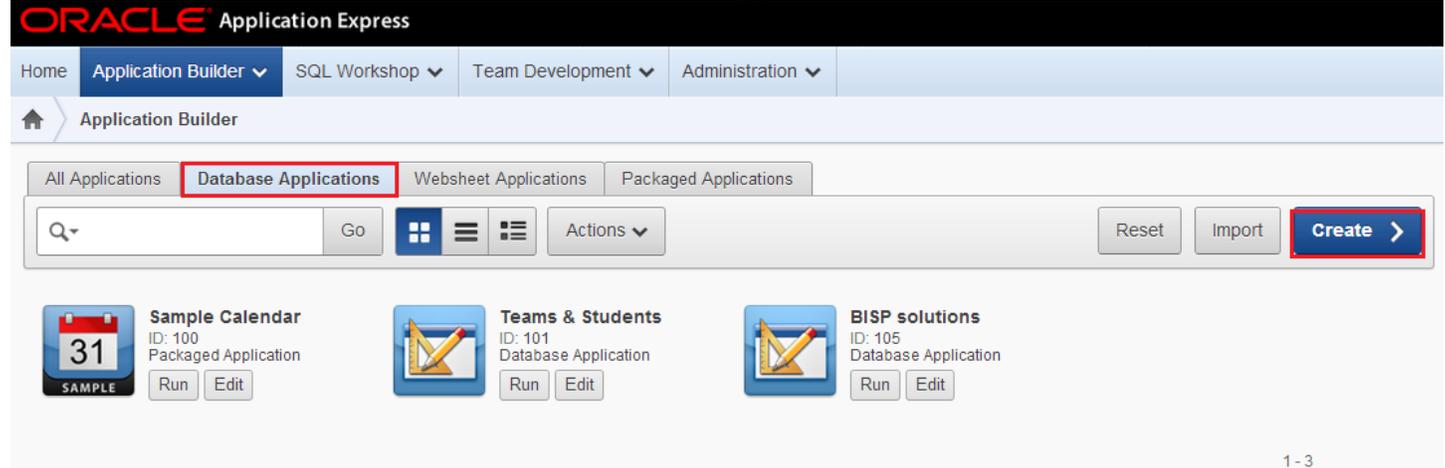
- Database Applications
- Websheet Applications
- Spread Sheet Applications
- Packaged Applications

So from above snapshot this application builder have some featured buttons like Reset , Import , Create a new application Button , Action Button etc.

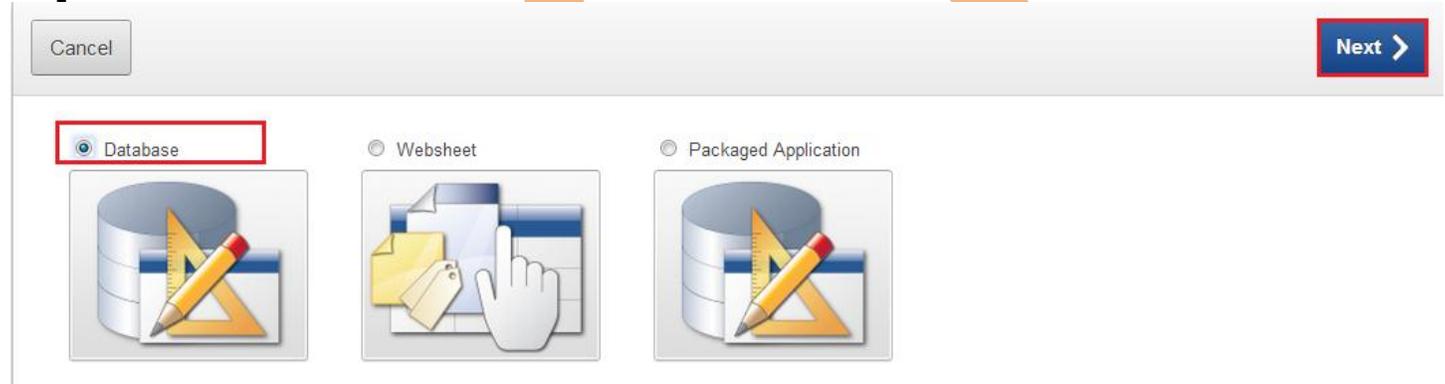
Now We can Create a new Application from the following four ways i.e by using these four sub components of Application builder one by one.

To Create an Application Using First Subcomponent (Database Applications) :

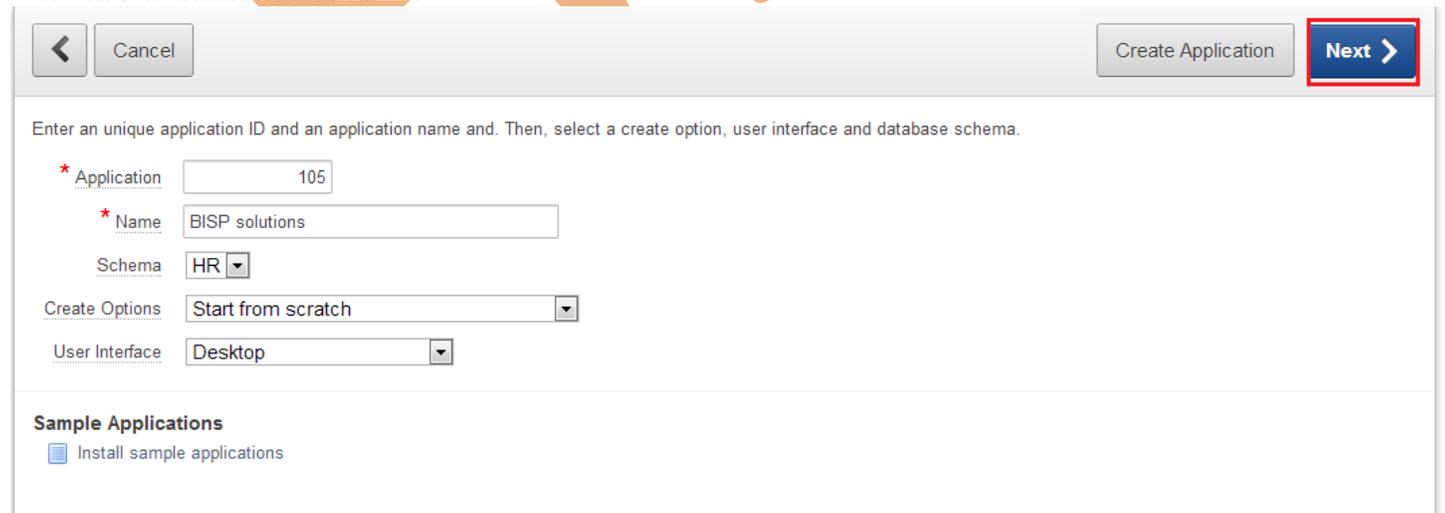
Step 5: Click on create button to create database Application



Step 6: Click on Database then click to Next



Step 7 : Enter an Unique application ID & an Application Name & then select a create option , user interface & database schema



Fill all the required empty fields

➤ Application = 105

www.bisptrainings.com

www.bispsolutions.com

- Name = BISP Solutions
- Schema = HR
- Create Options = Start from Scratch
- User Interface = Desktop
- Click Next

Step 8: Select Page Type = Blank & Page Name= HOME
Then Click to **Add Page** to add next page .

← Cancel

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

Add Page Add Page

Select Page Type:

Blank Report Report and Form Form
 Tabular Form Master Detail Chart

Action: Add blank page to application

Page Name

Step 9: Add Page & Select Page Type = Report & Form also provide detail for next page i.e
Table Name = Students & Implementation = Classic

← Cancel

Page	Page Name	Page Type	Source Type	Source	Delete
1	<u>HOME</u>	Blank	-	-	X

Add Page

Select Page Type:

Blank Report Report and Form Form

Tabular Form



Master Detail



Chart



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

Subordinate to Page: HOME (1)

Table Name: STUDENTS

Implementation: Classic

Step 10: Click Next Button

Create Application

Next >

Step 11: Select No if don't want to copy shared components from another application & then Click Next

Method Name Pages Shared Components Attributes User Interface Theme Confirm



Cancel

Next >

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, copy the shared components from an existing application.

Copy Shared Components from Another Application:

Yes

No

Step 12 : Page for authentication is open so fill all the required fields

- Authentication Scheme = Application Express
Note : This Authentication consists primarily three schemes for login security purpose & these are [1] Application express [2] Database Account [3] No Authentication
- Tabs = One Level of Tabs
- Language = English (en)
- User Language Preference Derived From = Application Primary Language
- Click to Next

Method Name Pages Shared Components **Attributes** User Interface Theme Confirm

Authentication Scheme: **Application Express**
 Tabs: **One Level of Tabs**
 Language: English (en)
 User Language Preference Derived From: **Application Primary Language**
 Date Format:
 Date Time Format:
 Timestamp Format:
 Timestamp Time Zone Format:

Step 13: Select a theme for example select Midnight Blue (Theme 3)

Show **All Themes**

Select a theme:

Simple Red (Theme 1)



Builder Blue (Theme 2)



Midnight Blue (Theme 3)



Step 14: Take a look of summary before Confirm then click to **Create Application**

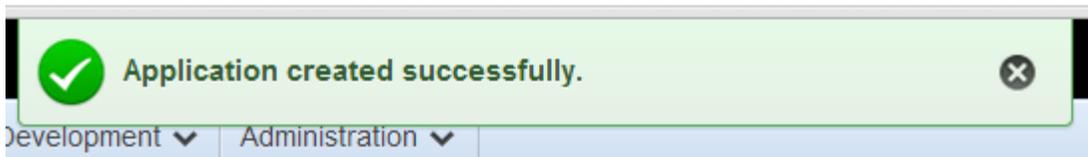
Method Name Pages Shared Components Attributes User Interface Theme **Confirm**

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

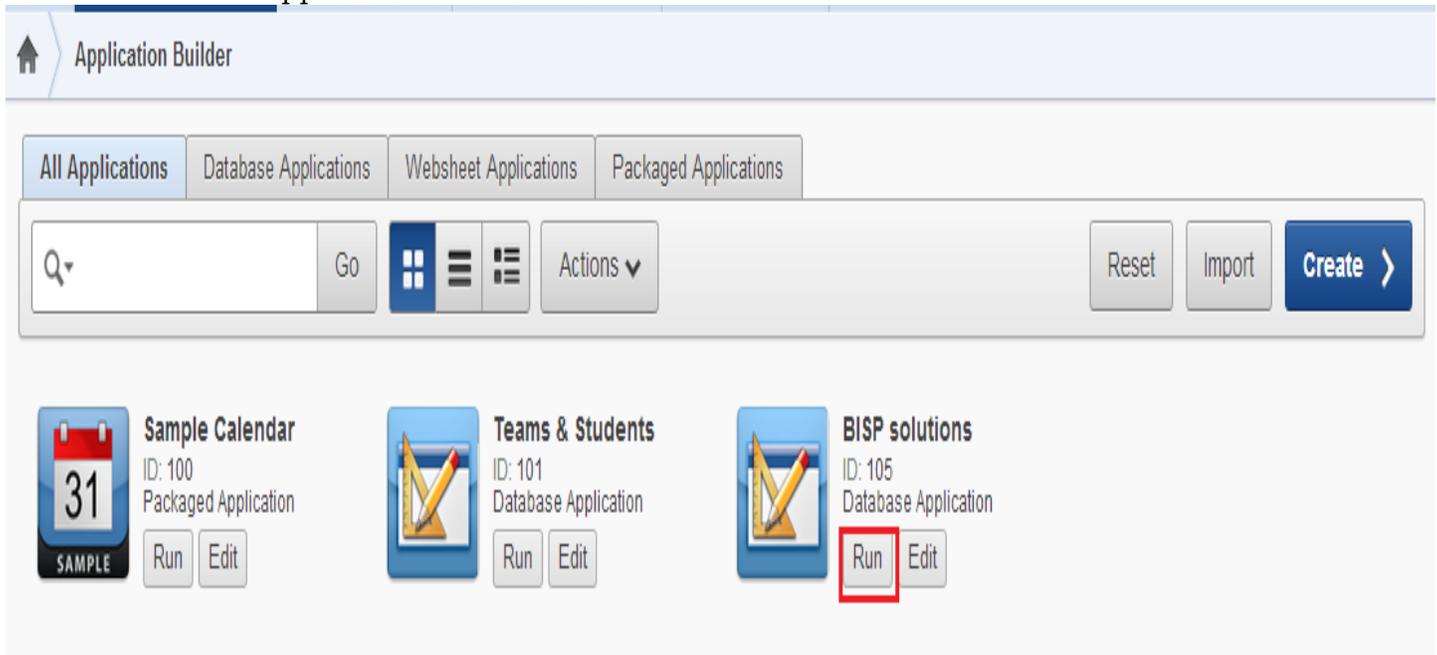
Application	105
Name	BISP solutions
Parsing Schema	HR
Default Language	en
Tabs	One Level of Tabs
Default Authentication Scheme	Application Express Authentication
Theme Type	Standard
UI Theme	Midnight Blue

Save this definition as a design model for reuse

A message will appear confirming that Application Created Successfully .

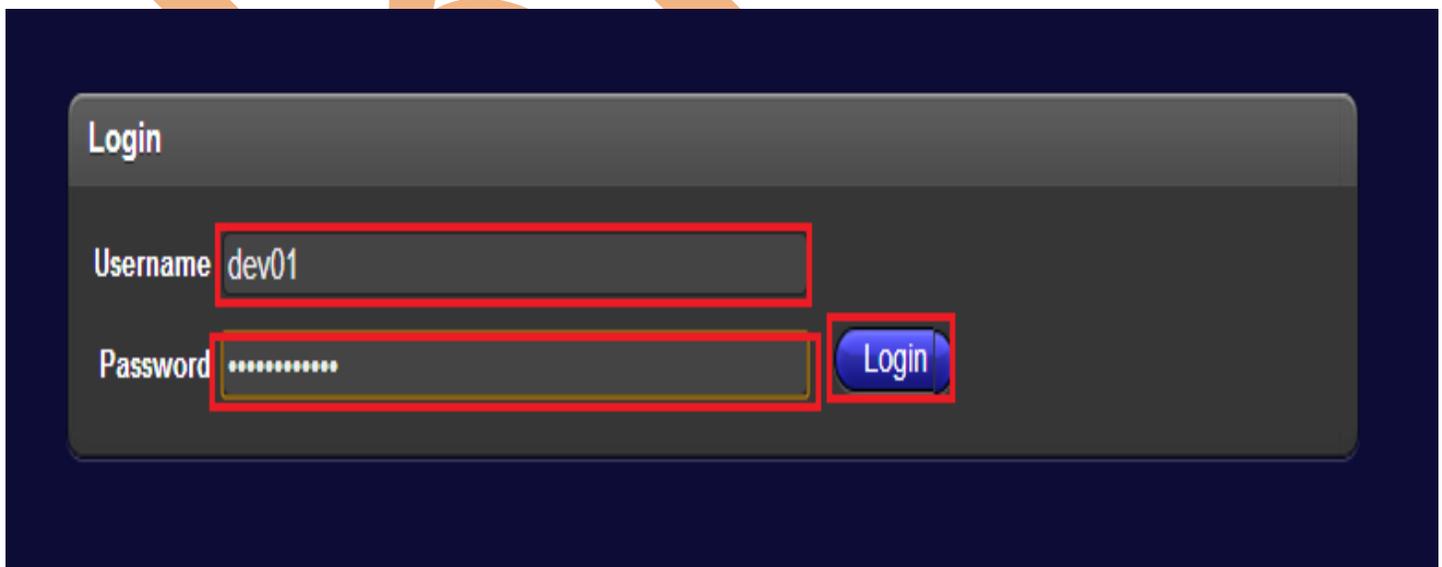


Step 15: Observe that an application named as BISP solutions is created successfully & hence to run this database application click on **Run**

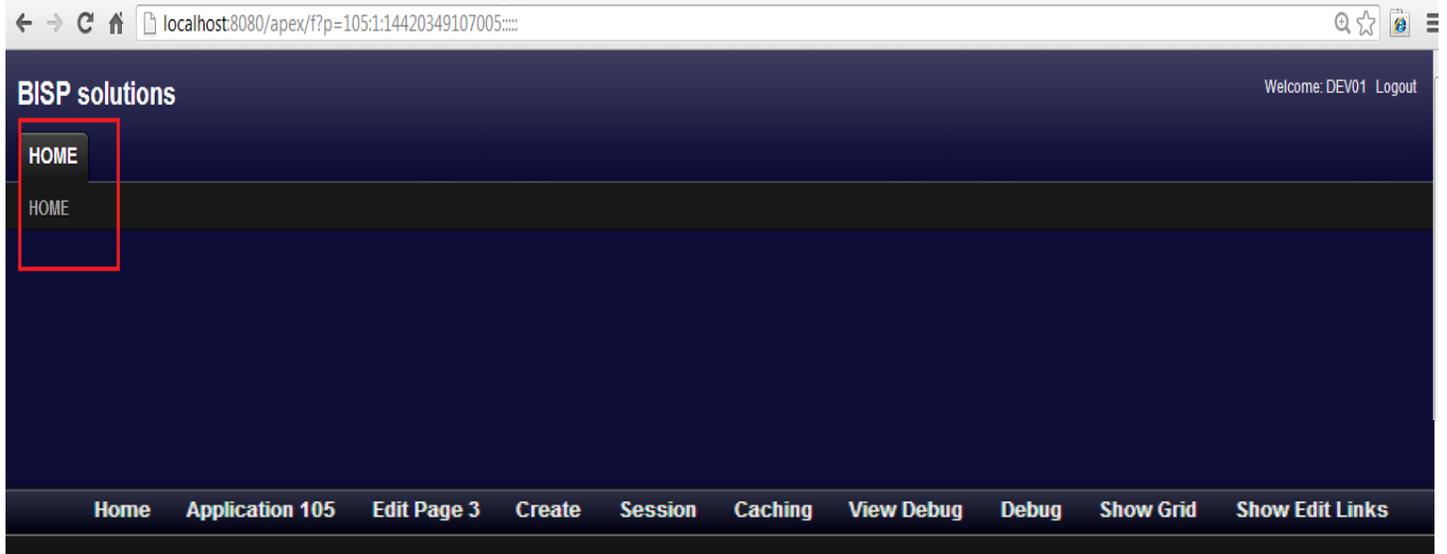


Step 16: Login page of this application will appear so fill all the login details such as

- Username = dev01
- Password = ***** (Password of developer workspace)
- Click on Login

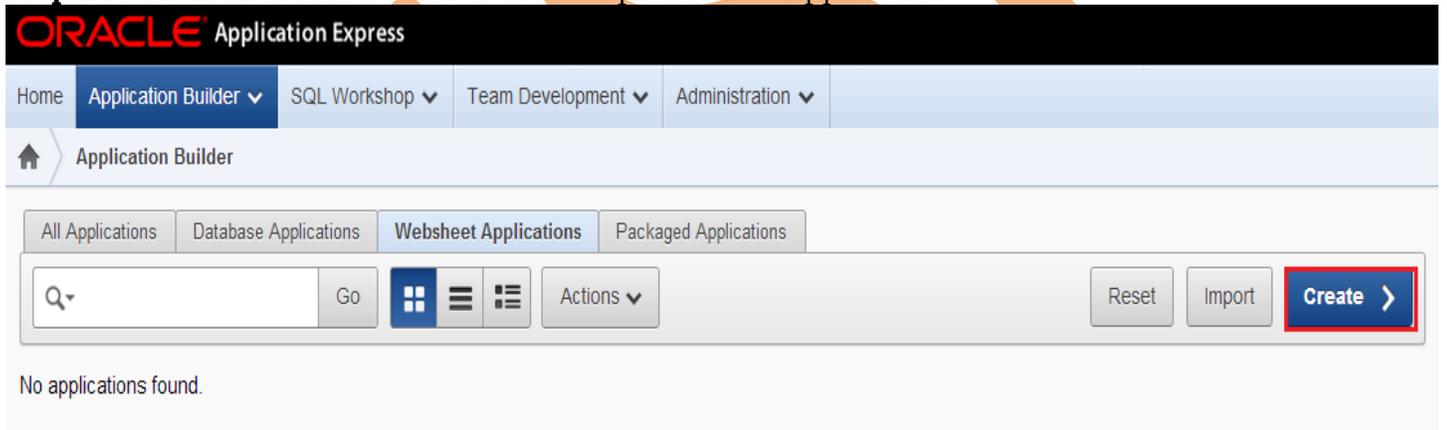


Now we have entered successfully inside an application named BISP Solutions based on database application . Also if we want to add pages or to manage this application click on Edit Page or use footer menu to edit this database application .



To Create an Application Using Second Subcomponent (Spreadsheet Applications) :

Step 17: Click on create button to create Spreadsheet Application



Step 18: Click on **From Spreadsheet** then click to Next



Step 19: 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 www.bisptrainings.com www.bispsolutions.com

newly created table. So Import From = Upload file , Comma separated (*.csv) or tab delimited) .Then Click Next

← Cancel Next >

Create Application

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

Step 20: Click on **Choose File** to choose a csv file .

← Cancel

Your file is being uploaded

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

* Text File **Choose File** No file chosen

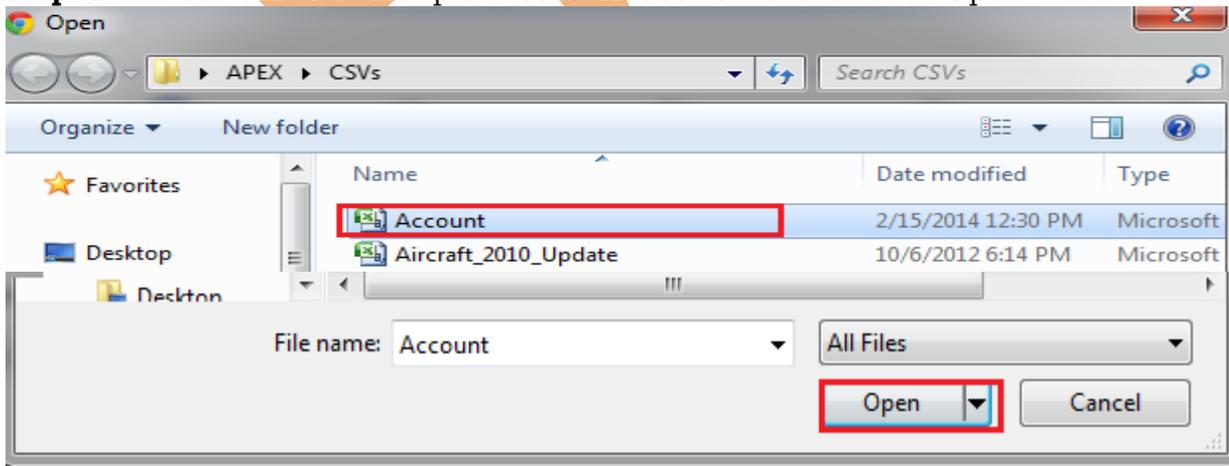
* Separator .

Optionally Enclosed By

First row contains column names.

File Character Set

Step 21: Select a file for example choose **Account** file then click Open



Step 22: Click Next

Your file is being uploaded

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

* Text File Account.csv

* Separator .

Optionally Enclosed By

First row contains column names.

File Character Set

Step 23: This page previews how your table will look . You can modify the suggested table name, change the column names or data types , or specify which column to include so provide following details :

- Schema = HR
- Table Name Accounts
- Column Names = ACNUM , BRANCHCODE , CUSTOMER TYPECODE
- Then click on 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	ACNUM	BRANCHCODE	ACTYPECODE	CUSTOMERTYPECODI
Data Type	<input type="text" value="NUMBER"/>	<input type="text" value="NUMBER"/>	<input type="text" value="NUMBER"/>	<input type="text" value="NUMBER"/>
Format	<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"/>
Upload	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>
Row 1	31001	310	210	1
Row 2	31102	311	215	2
Row 3	31203	312	212	3
Row 4	31304	313	213	4
Row 5	31405	314	214	5

Step 24: Fill the required details as shown below :
Singular Name = Accounts

Plural Name = Accounts

Column User Interface is mainly provided to change column name according to User therefore

- ACNUM = ACCOUNT NUMBER
- BRANCHCODE = BRANCH CODE
- ACTYPECODE = ACCOUNT TYPE CODE
- CUSTOMERTYPECODE = CUSTOMER TYPE CODE
- Click on Next

Schema: HR
Table Name: ACCOUNTS

* Singular Name: Accounts
* Plural Name: Accounts

Column User Interface Defaults

Column	Label
ACNUM	Account Number
BRANCHCODE	Branch Code
ACTYPECODE	Account Type Code
CUSTOMERTYPECODE	Customer Type Code

Navigation: Cancel, Next >

Step 25: Fill the required details as shown below :

- Application Name = Accounts
- Create Mode = Read and Write
- Report Implementation = Interactive
- Click Next

Schema: HR
Table Name: ACCOUNTS

* Application Name: ACCOUNTS

Create Mode: Read Only Read and Write

Report Implementation: Interactive

Navigation: Cancel, Next >

Step 26: Select Theme for your Spreadsheet Application then click Next

Show

Select a theme:

Scarlet (Theme 21)


Bluejay (Theme 22)


Uniframe (Theme 23)


Step 27: Check Summary & Click on Create Application

Owner: HR

Table: ACCOUNTS

Application Name: ACCOUNTS

Theme: Scarlet (21)



Step 28: Spreadsheet application named Accounts Created Successfully Now to run it Click **Run Application**

Successfully Created Application



The application has been successfully created.



Run Application



Edit Application

Step 29: This is Login Page of Spreadsheet application so provide required credentials such as

- Username = dev01

- Password = ***** (Password of developer workspace)
- Click on Login

Login

Username

Password

Step 30: Now Successfully Entered inside Accounts Application & check that all the data from Accounts .csv file is available here now to edit particular row click on pencil icon

ACCOUNTS

Accounts

Home

Q-

	Account Number	Branch Code	Account Type Code	Customer Type Code
	31001	310	210	1
	31102	311	215	2
	31203	312	212	3
	31304	313	213	4
	31405	314	214	5
	31006	310	210	6
	31107	311	215	7
	31208	312	212	8
	31309	313	213	9

Step 31: Now Update accounts row & click Apply Changes.

Accounts

Home > Update Accounts

Accounts

Cancel Delete Apply Changes

Account Number 31001

Branch Code 310

Account Type Code 210

Customer Type Code 1

1 of 15

Next >

To Create an Application Using Third Subcomponent (Websheet Applications) :

Step 32: Click on create button to create Websheet Application

ORACLE Application Express

Home Application Builder SQL Workshop Team Development Administration

Application Builder

All Applications Database Applications **Websheet Applications** Packaged Applications

Q- Go Actions Reset Import **Create**

No applications found.

Step 33: When we want to create first time a new websheet application it shows an error saying

Cancel **Manage Websheet Database Objects >**

Invalid Websheet Objects

The database objects required to create Websheet applications are either invalid or do not exist. Please contact your Workspace Administrator.

Sample Applications

Install sample applications

that " The database objects required to create Websheet applications are either invalid or do not exist. Please contact your workspace Administrator " So solution of this issue is that logout from www.bisptrainings.com www.bispsolutions.com

development workspace & login from Application Express Login workspace & then Click on **Manage Worksheet Database Objects** .

Step 34: In order to run Worksheets, the following tables are required so these tables will be created in your chosen schema , if you would rather create the Worksheet objects in a new schema use the Request Database Schema wizard so Click on **Next**

Cancel Next >

In order to run Worksheets, the following tables are required:

- APEX\$_ACL
- APEX\$_WS_FILES
- APEX\$_WS_HISTORY
- APEX\$_WS_LINKS
- APEX\$_WS_NOTES
- APEX\$_WS_ROWS
- APEX\$_WS_TAGS
- APEX\$_WS_WEBPG_SECTIONS
- APEX\$_WS_WEBPG_SECTION_HISTORY

These tables will be created in the HR schema. If you would rather create the Worksheet objects in a new schema use the [Request Database Schema](#) wizard.

Step 35: Worksheet database Objects created

Manage Worksheet Objects Create Worksheet



Worksheet database objects created.

Step 36: Login again through developer mode

Application Express Login



Oracle Application Express is a rapid Web application development tool that lets you share data and create custom applications. Using only a Web browser and limited programming experience, you can develop and deploy powerful applications that are both fast and secure. [Learn how to get started.](#)

Workspace

Username

Password

[Reset Password](#)

Login to Application Express

Step 37: Open Application Builder ---> Worksheet Applications ----> Create

Home Application Builder SQL Workshop Team Development Administration

Application Builder

All Applications Database Applications Websheet Applications Packaged Applications

Q- Go Actions

Reset Import **Create >**

No applications found

Step 38: Fill all the required blank spaces such as :

- Websheet = 112
- Name =Websheet Demo
- Allow SQL and PL/SQL = No
- Click on **Create Websheet**

< Cancel **Create Websheet**

Websheet: 112

Name: Websheet Demo

Allow SQL and PL/SQL: No

Workspace Name: BHEL

Schema: HR

Include Getting Started Guide

Step 39: Websheet Created Successfully Now click on **Run Websheet** to run websheet application

tion Express **✔ Websheet created.**

SQL Workshop Team Development Administration

ite Websheet

Websheet Created



Websheet Name: **Websheet Demo**

Workspace Name: **BHEL**

Run Websheet

Step 40: Login into Websheet application with the application Express Credentials such as Username & Password as shown in figure then click into **Login** Button.

Now we have successfully created & entered into Websheet application named as Websheet Demo. Now for doing further tasks or to make your application more interactive use Control panel situated at the right hand side of the application . Also to View , Create , Edit , Data Grid & Administration use the above tabs under Websheet Demo & modify your application .

Installation of Packaged Application Using fourth Subcomponent (Packaged Applications)

Step 41: Open Application Builder ---> Packaged Applications

Note : Packaged Applications are those which are already created by Oracle Team & given for learning purpose .

Home Application Builder SQL Workshop Team Development Administration

Application Builder Packaged Applications

All Applications Database Applications Websheet Applications Packaged Applications

All Categories All Applications

Step 42: Choose an application from a list of packaged applications for Example Data Reporter & then Click on **Install Application**

Application Builder Packaged Applications Data Reporter

All Applications Database Applications Websheet Applications Packaged Applications

 **Data Reporter**
Knowledge Management, Tracking, Project Management

Install Application

Step 43: Select Authentication = Application Express Accounts then Click to Next

Cancel Next

Application Name: Data Reporter

Authentication: Application Express Accounts

Step 44: Check Installation Summary Then Click on **Install Application**

Cancel Install Application



Application Name: Data Reporter
Authentication: Application Express Accounts
Workspace Name: BHEL
Schema: HR

Step 45: Application Installed successfully now Click on **Run Application**

Run Application

Application Installed Successfully. ✕



Application Name: Data Reporter
Workspace Name: BHEL

Step 46: Login into Data Reporter by using Application Express Credentials such as

- Username = dev01
- Password = *****
- Click Login

Data Reporter

Username: dev01

Password: []

Login

Step 47: Click On Demo Project Calendar

Data Reporter Reports Dashboard Data Sources Administration Help dev01 Logout

Search Filter v Reset New >

To run a report click on the report, use the search and filter controls to help locate the report you wish to run.

Demo Projects Calendar
Calendar Report on data in Demo Projects table
Default

Now this packaged application named as Data Reporter consist of Demo Project Calendar & now we can see detailed view of this calendar . So likewise we have lots of packaged application to practice & only we have to install & run .



Demo Projects Calendar

Calendar Report on data in Demo Projects table

[Permalink](#)

Monthly View

Navigation buttons: Back, Star, Edit, History, Email, Export

February 2014							
Previous						Today	Next
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
26	27	28	29	30	31	1	
		Train Developers in APEX Train Developers in APEX		Load Packaged Applications		Forms Conversion Software Projects Tracking	
2	3	4	5	6	7	8	
Public Website	Load Packaged Applications Forms Conversion	Load Packaged Applications		Migrate Access Application Public Website		Software Projects Tracking Email Integration	

