

# Application Express

## Just Plug-it In

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Niantic Systems

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## *Speaker Qualifications*

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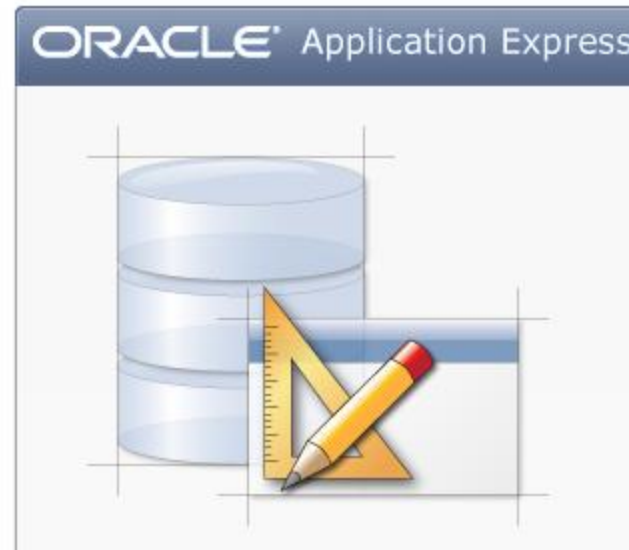
- Josh Millinger, President, Niantic Systems, LLC
- CS degrees from UW-Madison, Johns Hopkins
- Former Oracle Sales Consultant and Founder of the Oracle Partner Technology Center
- 15+ Years of Oracle Web Development Experience
- Have Been Developing with and Teaching Apex Since Well Before It Was Even Released as a Product!
- Started with Excel Migration as first project
- Presenter at NYOUG, IOUG, ODTUG, Oracle OpenWorld

- Oracle Consulting with a Focus on Application Express
- Application Express Training
- Oracle Forms/Reports
- Discoverer
- Mentoring
- Forms/Reports to Apex Migration
- Customers in the Federal, Commercial, Healthcare, Higher Education, Financial, and Construction verticals

# Agenda

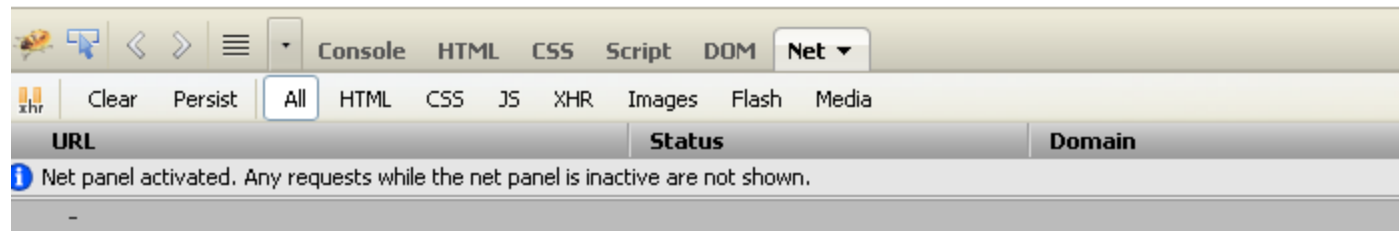
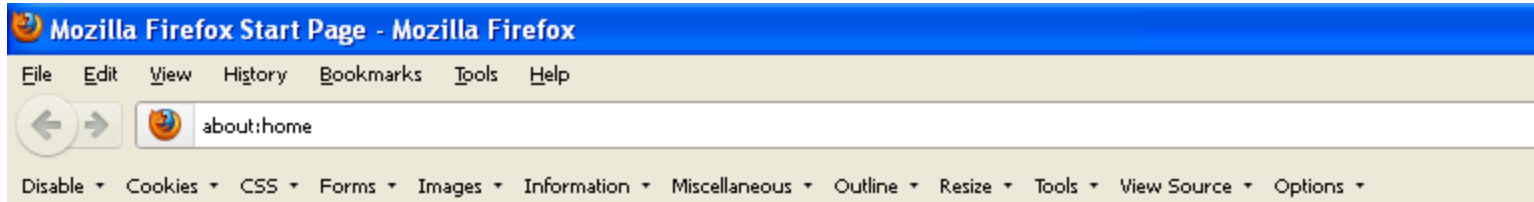
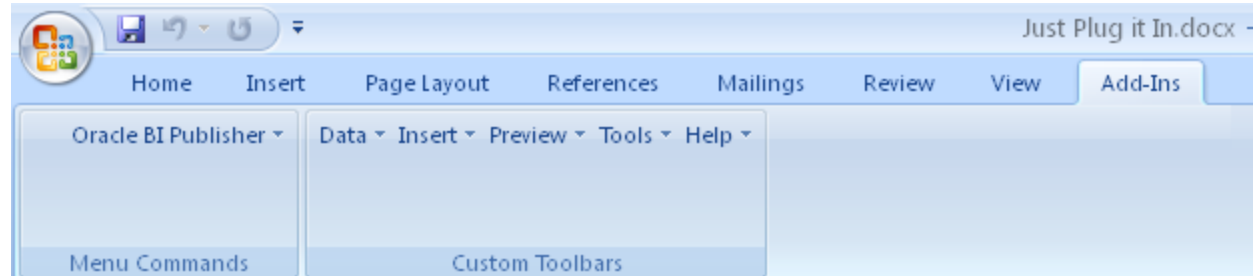
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- What is a Plug-in
- Describe Types of Plug-in
- Demonstrate creating Plug-ins

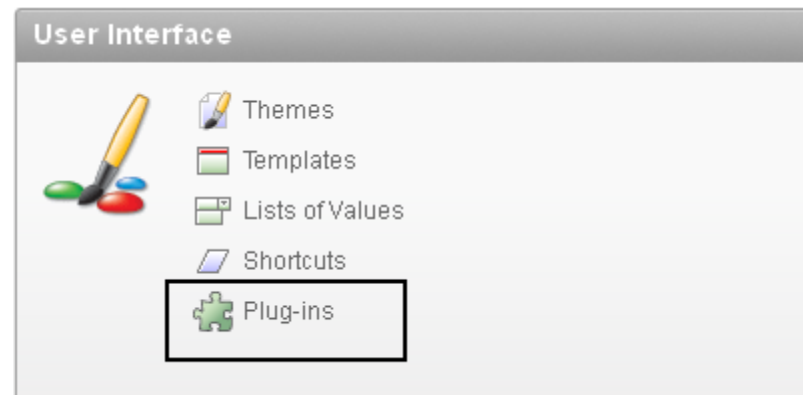


# What is a Plug-in?

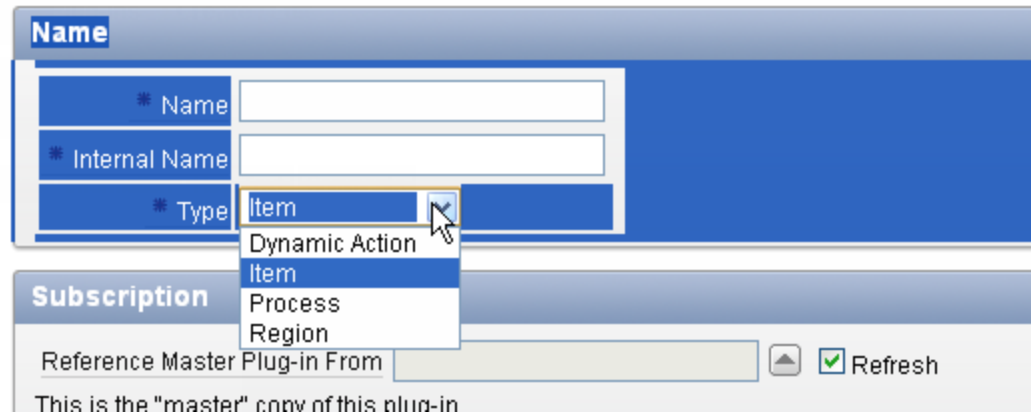
- Think of a Plug-in as an Add-On
- Reusable Code that doesn't come out of the box
- What do you use?



- Tools give you 80%
- ApEx might be closer to 95%
- Last 5% we need plug-ins for
- Introduced in version 4.0
- Shared Component



- In ApEx4.0 there are four different types
  - Item
  - Region
  - Dynamic Action
  - Process

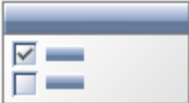


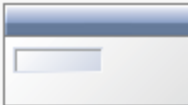


A screenshot of the Oracle APEX plug-in configuration interface. The 'Name' section contains three fields: '\* Name', '\* Internal Name', and '\* Type'. The '\* Type' dropdown menu is open, showing options: 'Item', 'Dynamic Action', 'Item', 'Process', and 'Region'. Below the 'Name' section is the 'Subscription' section, which includes a 'Reference Master Plug-in From' field, an up arrow icon, a checked 'Refresh' checkbox, and a note: 'This is the "master" copy of this plug-in'.

- Plug-ins appear as option depending on what you try to create

**Create Item**

Page: **4 - Temperature**

Select Item Type:

- Check Box  

- Date Picker  

- File Browse  

- Hidden  

- Password  

- Plug-ins  


**Create Item** Cancel < Previous Next >

Page: **4 - Temperature**

Plug-in:

- Masked Text Field
- NYOUG From To Date Picker
- Star Rating
- graph bar



Instead of creating a text box or radio group, or other built-in

Examples:

- Rating Stars
- Popup LOV showing multiple columns

A screenshot of a web form titled 'Form on CUSTOMERS'. The form contains several input fields: 'Customer Name', 'Address', 'City', 'State', and 'Zipcode', each with a corresponding text box. Below these fields is a 'Rating' section with a minus sign icon and five stars, where the first three stars are red and the last two are grey.

Regions have two parts

- Template
- Content
  - Plug-ins help derive the content portion
  - Could be HTML, Chart, Map, etc

Label Cloud

DEPTNO

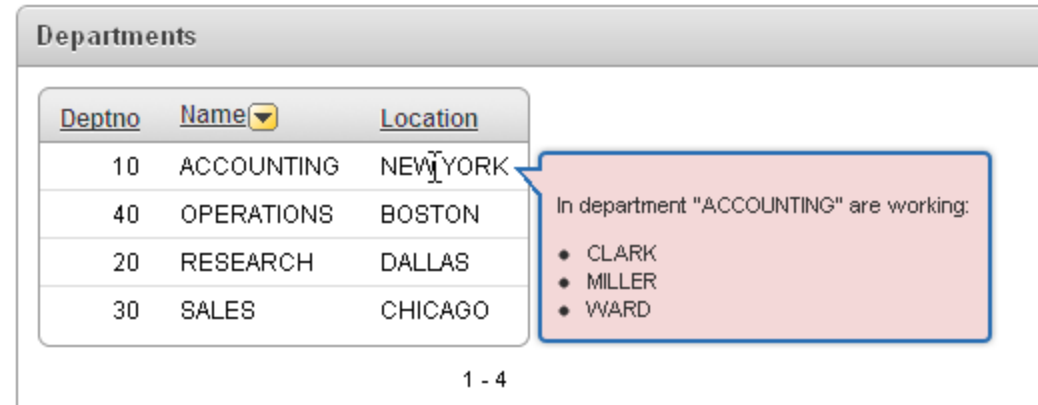
MARTIN JAMES SMITH MILLER WARD **BLAKE JONES KING**  
**FORD** TURNER **CLARK** ALLEN ADAMS **SCOTT**



Dynamic Action new in 4.0  
Helped non JS developers  
Helped JS with productivity  
Four types:

- Component
- Effect
- Style
- Notification

Could be used for Modal Windows

A screenshot of a web application interface showing a table titled 'Departments'. The table has three columns: 'Deptno', 'Name', and 'Location'. The 'Name' column has a dropdown arrow. The table contains four rows of data. A tooltip is displayed over the 'ACCOUNTING' row, containing the text 'In department "ACCOUNTING" are working:' followed by a bulleted list of names: 'CLARK', 'MILLER', and 'WARD'.

| Deptno | Name       | Location |
|--------|------------|----------|
| 10     | ACCOUNTING | NEW YORK |
| 40     | OPERATIONS | BOSTON   |
| 20     | RESEARCH   | DALLAS   |
| 30     | SALES      | CHICAGO  |

In department "ACCOUNTING" are working:

- CLARK
- MILLER
- WARD

1 - 4

## *Process Actions Plug-in*

- Processes perform logic
- Render or Submission
- Similar to PL/SQL Stored Procedure
- May be used when schema may not be accessible from schema

Geocode

**Address \***

Latitude 40.283167

Longitude -74.520941

- Name – the name displayed to developers
- Internal Name – used by Apex Repository (keep unique)
- Type – item, region, DA, process, authentication, or authorization
- PL/SQL code – generates code for plug-in
- Standard Attributes

Standard Attributes

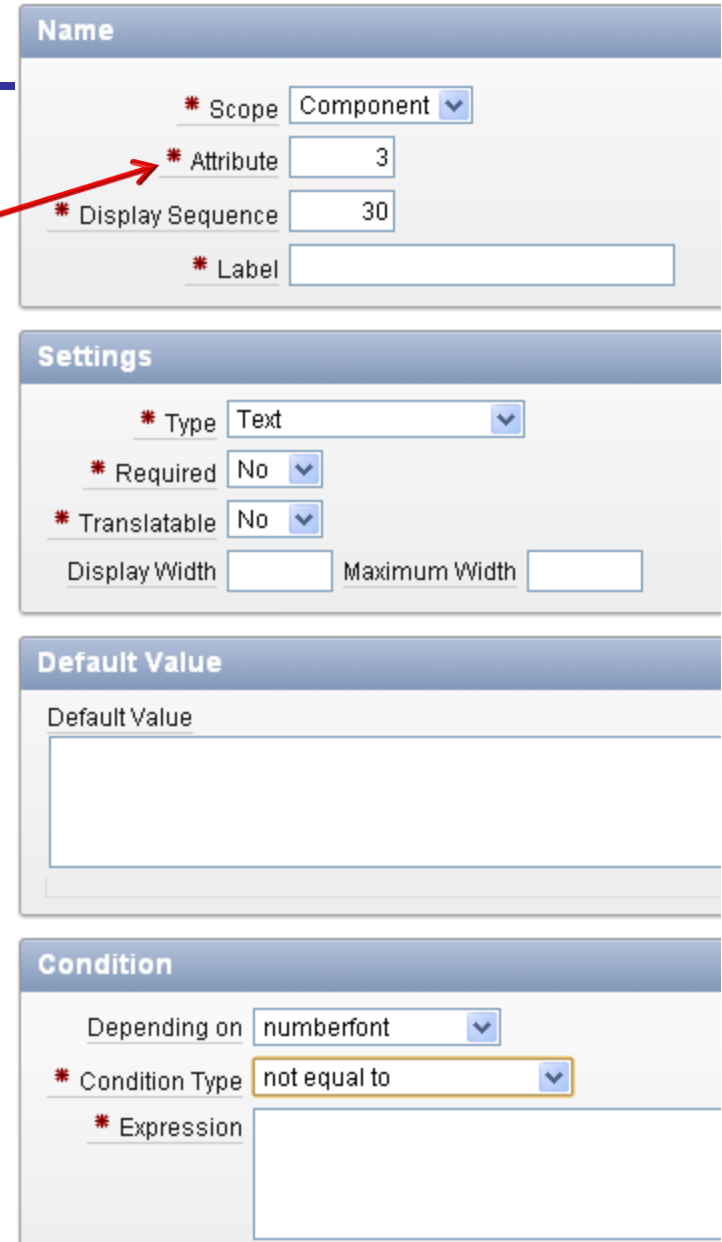
Attributes:

|   |  |   |  |
|---|--|---|--|
| <input checked="" type="checkbox"/> Is Visible Widget                   | <input checked="" type="checkbox"/> Session State Changeable | <input checked="" type="checkbox"/> Has Read Only Attribute | <input type="checkbox"/> Has Escape Output Attribute     |
| <input type="checkbox"/> Has Quick Pick Attributes                      | <input checked="" type="checkbox"/> Has Source Attributes    | <input type="checkbox"/> Format Mask Date Only              | <input type="checkbox"/> Format Mask Number Only         |
| <input checked="" type="checkbox"/> Has Element Attributes              | <input type="checkbox"/> Has Width Attributes                | <input type="checkbox"/> Has Height Attribute               | <input type="checkbox"/> Has Element Option Attribute    |
| <input checked="" type="checkbox"/> Has Encrypt Session State Attribute | <input type="checkbox"/> Has List of Values                  | <input type="checkbox"/> List of Values Required            | <input type="checkbox"/> Has LOV Display Null Attributes |
| <input type="checkbox"/> Has Cascading LOV Attributes                   |  |   |  |

- File Prefix – derives where files can references #PLUGIN\_PREFIX#
- Custom Attributes – settable attributes
  - Application Level
  - Component Level
- Files - any files that can uploaded so they are part of plugin
- Events – associated with plug-in and fire during execution
- Version – used to document which version is implemented
- About URL – where to find out more about plug-in

# Attributes

- Application Level – Set once and used for all instances of plugin
- Component Level – Can be different for all instances within an application



**Name**

- \* Scope
- \* Attribute
- \* Display Sequence
- \* Label

**Settings**

- \* Type
- \* Required
- \* Translatable
- Display Width  Maximum Width

**Default Value**

Default Value

**Condition**

- Depending on
- \* Condition Type
- \* Expression

Need to make specific calls depending on type (Item)

```
function <myfunction> (  
    p_item          in apex_plugin.t_page_item,  
    p_plugin        in apex_plugin.t_plugin,  
    p_value         in varchar2,  
    p_is_readonly   in boolean,  
    p_is_printer_friendly in boolean )  
    return apex_plugin.t_page_item_render_result
```

[http://docs.oracle.com/cd/E23903\\_01/doc/doc.41/e21676/apex\\_plugin.htm#BAJDAEJE](http://docs.oracle.com/cd/E23903_01/doc/doc.41/e21676/apex_plugin.htm#BAJDAEJE)

Can have validation function if data is being entered.

| Callbacks                |   |
|--------------------------|---|
| Render Function Name     | <input type="text" value="render_mygraph"/>   |
| AJAX Function Name       | <input type="text"/>                          |
| Validation Function Name | <input type="text" value="vaildate_mygraph"/> |



## *Within code you can reference:*

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### Region:

- ID
- Static Id
- Name
- Type
- Source
- Error\_message
- Attributes 1 -10

### Item:

- Id
- Name
- Label
- Plain\_label
- Format\_mask
- Is\_required
- Lov\_definition
- Attributes 1 - 10

# Highly Rated Plug-ins

**DTreeTable**

|   | Name   | Manager | Department | Location |
|---|--------|---------|------------|----------|
| ▼ | KING   |         | ACCOUNTING | NEW YORK |
| ▼ | JONES  | KING    | RESEARCH   | DALLAS   |
| ▼ | SCOTT  | JONES   | RESEARCH   | DALLAS   |
|   | ADAMS  | SCOTT   | RESEARCH   | DALLAS   |
| ▼ | FORD   | JONES   | RESEARCH   | DALLAS   |
|   | SMITH  | FORD    | RESEARCH   | DALLAS   |
| ▼ | BLAKE  | KING    | SALES      | CHICAGO  |
|   | ALLEN  | BLAKE   | SALES      | CHICAGO  |
|   | WARD   | BLAKE   | SALES      | CHICAGO  |
|   | MARTIN | BLAKE   | SALES      | CHICAGO  |
|   | TURNER | BLAKE   | SALES      | CHICAGO  |
|   | JAMES  | BLAKE   | SALES      | CHICAGO  |
| ▼ | CLARK  | KING    | ACCOUNTING | NEW YORK |

# Highly Rated Plug-ins

## Departments

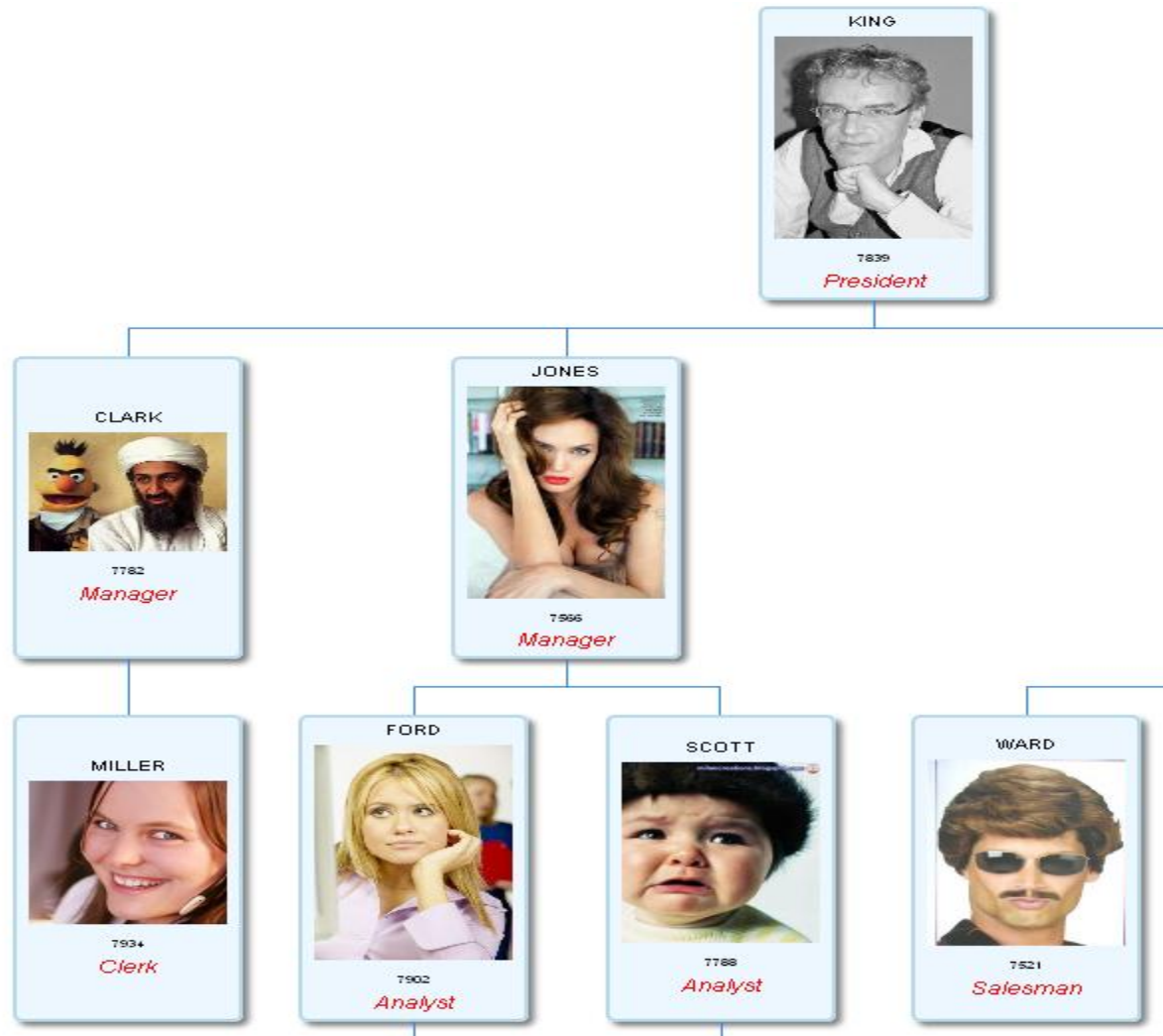
| <u>Deptno</u> | <u>Name</u> ▼ | <u>Location</u> |
|---------------|---------------|-----------------|
| 10            | ACCOUNTING    | NEW YORK        |
| 40            | OPERATIONS    | BOSTON          |
| 20            | RESEARCH      | DALLAS          |
| 30            | SALES         | CHICAGO         |

In department "ACCOUNTING" are working:

- CLARK
- MILLER
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1 - 4

# Highly Rated Plug-ins – Google Visualizations



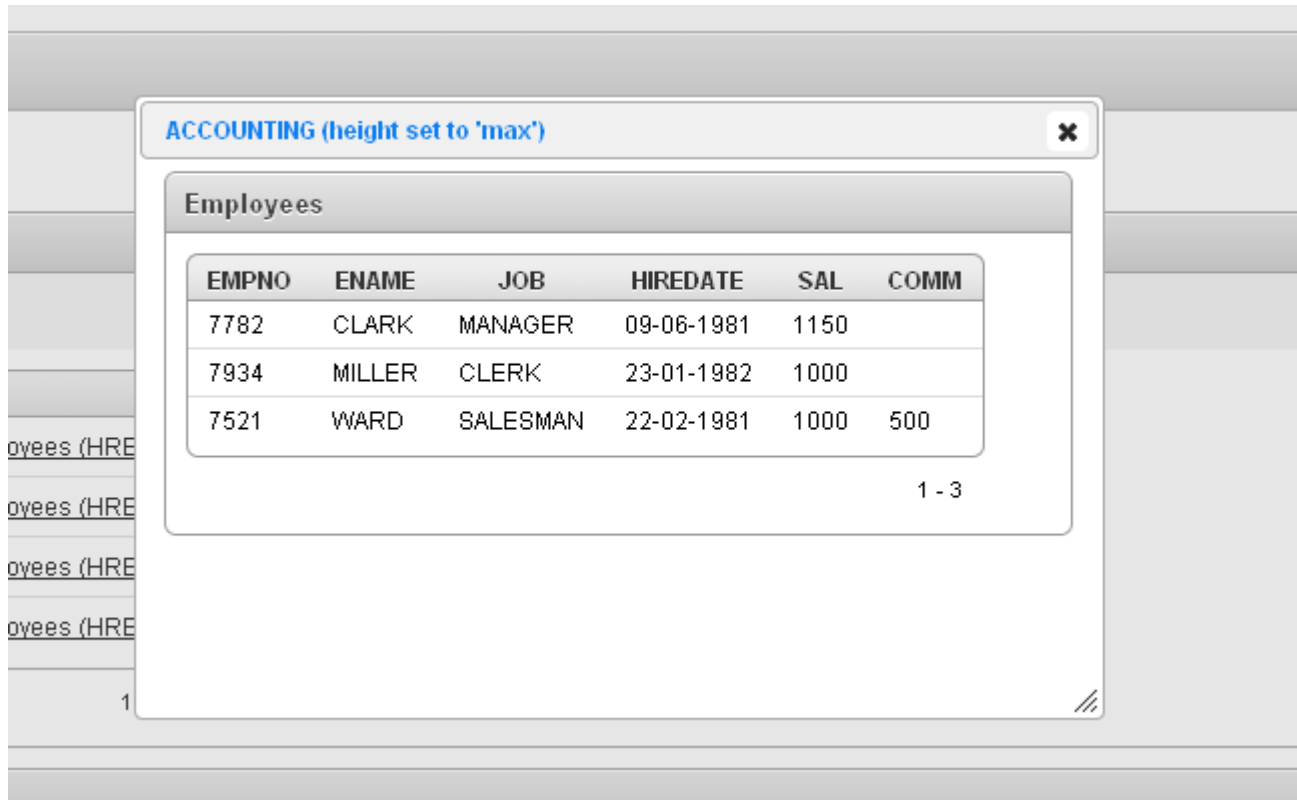
# Highly Rated Plug-ins – Super LOV

Employees ✕

Search   ← Page 1 →

| Employee   | Job     | Salary | Employee2  | Employee3  | Employee4  | Employee5  | Employee6  |
|------------|---------|--------|------------|------------|------------|------------|------------|
| 1231       | MANAGER | 2345   | 1231       | 1231       | 1231       | 1231       | 1231       |
| ADAMS      | CLERK   | 1101   | ADAMS      | ADAMS      | ADAMS      | ADAMS      | ADAMS      |
| ADAMS      | CLERK   | 1100   | ADAMS      | ADAMS      | ADAMS      | ADAMS      | ADAMS      |
| Al Bundy 1 | ANALYST | 1612   | Al Bundy 1 | Al Bundy 1 | Al Bundy 1 | Al Bundy 1 | Al Bundy 1 |

# Highly Rated Plug-ins – Dialog Boxes

A screenshot of a software application window titled 'ACCOUNTING (height set to 'max')'. Inside the window, there is a sub-dialog box titled 'Employees' which contains a table of employee data. The table has six columns: EMPNO, ENAME, JOB, HIREDATE, SAL, and COMM. The data rows are: (7782, CLARK, MANAGER, 09-06-1981, 1150), (7934, MILLER, CLERK, 23-01-1982, 1000), and (7521, WARD, SALESMAN, 22-02-1981, 1000, 500). Below the table, there is a page indicator '1 - 3'. The background of the application window shows a list of 'Employees (HRE' entries.

There are several resources that can be found online for downloading existing Apex plug-ins:

<http://www.oracle.com/technetwork/developer-tools/apex/application-express/apex-plug-ins-182042.html>

<http://www.apex-plugin.com/>

Also, a recent book by Martin D'Souza was released and can be found on most bookstore retailer sites.

[http://www.amazon.com/Expert-Oracle-Application-Express-Plugins/dp/1430235039/ref=sr\\_1\\_4?ie=UTF8&qid=1323137011&sr=8-4](http://www.amazon.com/Expert-Oracle-Application-Express-Plugins/dp/1430235039/ref=sr_1_4?ie=UTF8&qid=1323137011&sr=8-4)

## *Creating a Plug-in*

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1. Create a Plug – in for graphing a single value within form
2. Create Region Plug-in for showing Google Money Chart.



**Questions?**

**Topics for Next Time?**

# Thank You!

**Josh Millinger**

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