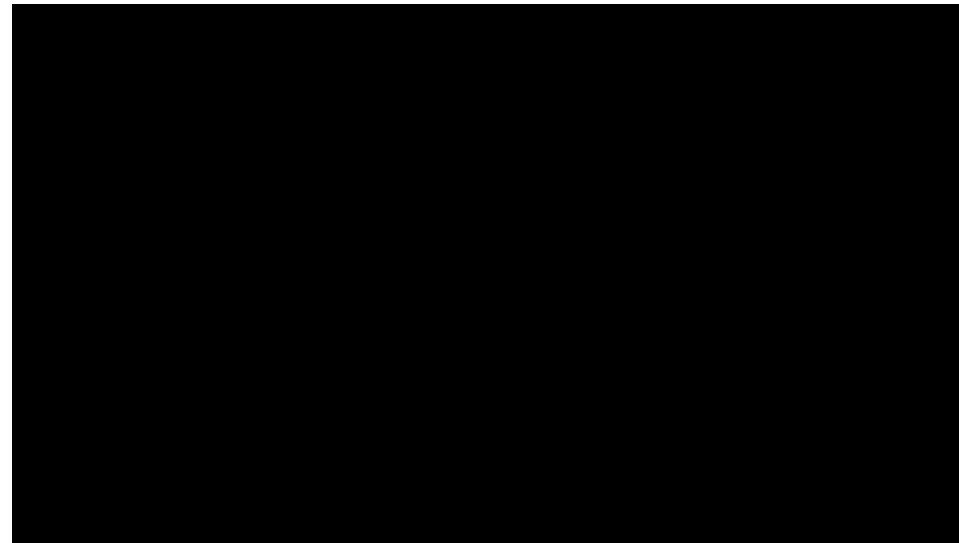


Prelude ...



APEX Interactive Reports

DEEP DIVE

APEX 5 Preview

Karen Cannell

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TH TECHNOLOGY



About Me ...

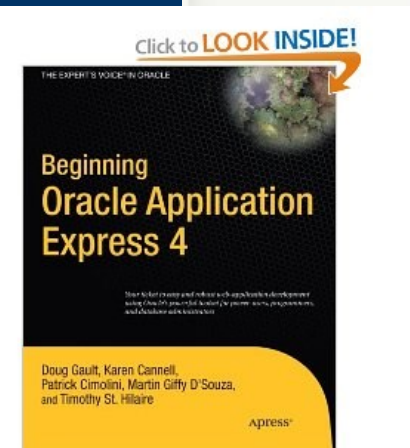
Karen Cannell ~ Consultant, **TH TECHNOLOGY**

- Mechanical/SW Engineer - Analyzed, designed, developed, converted, upgraded, enhanced legacy & database applications for 25+ years
- Building APEX applications for government, medical, engineering industries since HTMLDB
- Leveraging the Oracle 10g, 11g, 12c suite of tools
- Oracle Ace Associate  
- Editor **ODTUG** Technical Journal

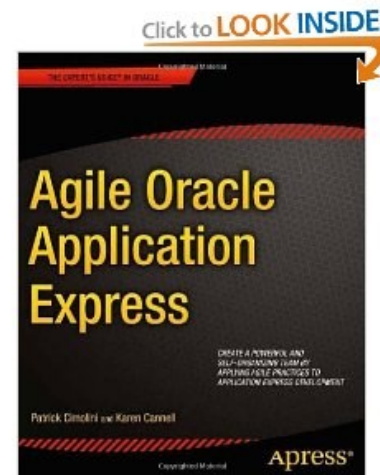
Send Me ODTUG Technical Journal Content!

We Have Books ...

- **Beginning Application Express**
- **4.2, APress, 2013**



- **Agile Oracle Application Express**
APress, 2012



About You ... (Audience Background)

- New to APEX?
- APEX Experience?
- APEX Versions?
- Interactive Reports Experience?

New Stuff or Old?
APEX5 Ready?

NOTE TO EARLY SLIDE DOWNLOADERS

- Many of these slides **HAVE CHANGED** as APEX 5 EA 3.0 was released 2 weeks ago.
- Please download the updated slides from the RMOUG Training Days site

Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle

Agenda / Session Objectives

● Key New Features:

- APEX 5.0 New Features
- IRs in Page Designer

● Caveats:

- Understand Limitations
- Workarounds for Major Limitations

● Customizations:

- Appearance
- IR Structure and JS Changes
- PDF Printing Options

APEX IR 30-second Intro

- Introduced in APEX 3.1
- Instead of Classic Reports
 - One –Way Upgrade
- Search Bar
- Activity Menu
 - Select, Filter, Aggregate, Highlight, Chart, Break, Sort, Compute, Flashback, Download, Save Report, **Group By, Pivot**
-  User Control,  Developer Effort

Developer *and* User Team

For maximum value:

Know Your Users
“*though APEX IR give the end user great power to format and arrange reports to their needs, the **developer needs to be aware of end user needs** to prepare and deliver the appropriate APEX IR query to support them.*”

Know What Your Users Do

Agenda

- **Key New Features:**
 - APEX 5.0 New IR Features
 - IRs in Page Designer
 - Multiple IRs on One Page

APEX 5.0 New Features

- Appearance, Usability and Accessibility
 - Sort Behavior now Sort Class
 - Menus Updated
 - Modal Dialogs
- **Action Menu**
 - **Group By** Enhancements column Limit increase
 - **Pivot**
 - **Subscription** – End is now End *Date*
- Manage Saved Reports and Subscriptions at Application Level

APEX 5.0 New Features, cont'd

- “Multiple Interactive Reports”
More than One IR Per Page!

to do this one ...

Things Have Changed



Things Look Different ...

- Page Designer
- Usability, Appearance, Accessibility
 - Menus
 - Modal Dialogs
 - Icons

Rendering

- Page 4: Interactive Report - Real Data
 - Pre-Rendering
 - Regions
 - Breadcrumb
 - Breadcrumb
 - Attributes
 - Content Body
 - Interactive Report Test - Real Small Data Set**
 - Columns
 - Attributes
 - Dynamic Actions
 - New
 - Highlight Sigma Grade Values
 - Highlight Outliers
 - True
 - Execute JavaScript Code
 - Execute JavaScript Code
 - False
- Post-Rendering

Grid Layout Messages Page Search Help

Interactive Report - Real Data

Header

Page Level Tabs

Icon Nav Bar

Breadcrumb

- Breadcrumb
 - Items
 - Region Content
 - Sub Regions

Content Body

- Interactive Report Test - Real Small Data Set**
 - Items
 - Region Content
 - Right of Interactive Report Search Bar
 - Sub Regions

Footer

Property Editor - Region

Footer Text

Condition

Read Only

Type - Select -

Security

Authorization Scheme - Select -

Configuration

Build Option - Select -

Server Cache

Caching Disabled

Customization

Customizable Not Customizable By End Us

Comments

Comments Plain Interactive Report built in APEX 5.0 EA 2.0

Audit Information

Gallery





Regions Items Buttons

Breadcrumb Calendar Calendar (Template) Chart

- Dynamic Actions
- Processing
- Page Shared Components

Column Heading Menu

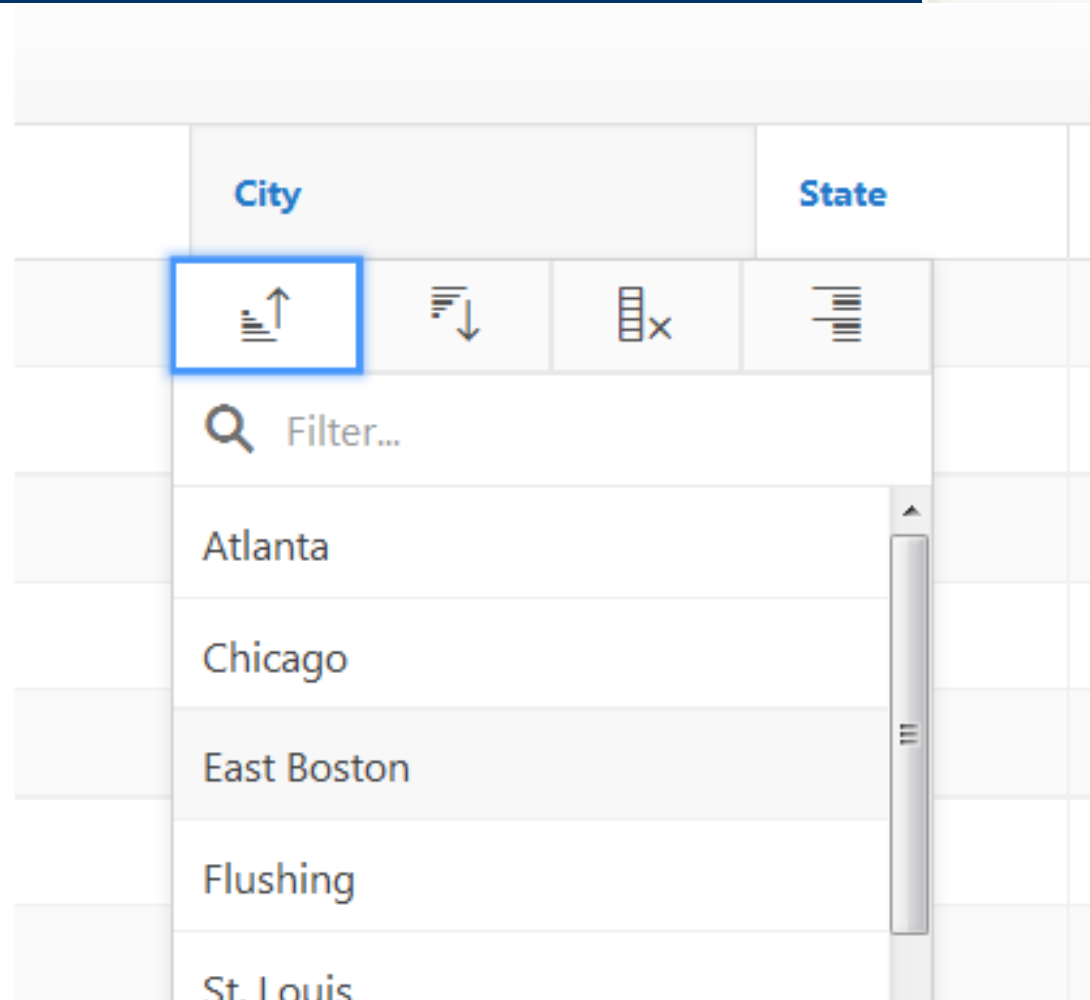
 APEX 4.2






	City	State	ZIP Code	
	   			R
	<input type="text"/>			
ay	Atlanta			R
	Chicago			
	East Boston			
I Blvd.	Flushing			
	St. Louis			
	Sterling			R
	Windsor Locks			
	Chicago	IL	60666	



Column Heading Menu on *Click*

APEX 5



City	State
	
	
 Filter...	
Atlanta	
Chicago	
East Boston	
Flushing	
St. Louis	

Developer - Report Attributes

- Selective End User Features
 - Per Report
 - Per Column

Search Bar

Include Search Bar

Search Field

Finder Drop Down

Rows Per Page Selector

Actions Menu

Include in Actions Menu:

Select Columns Filter Sort Control Break Highlight

Compute Aggregate Chart Flashback Save Report

Reset Help Download

Button Template

Finder Image

Actions Menu Image

Search Button Label

Maximum Rows Per Page

Page Designer - Report Attributes

Property Editor - Attributes

The screenshot displays the Oracle Application Express Page Designer interface. On the left, a tree view shows the page structure under 'Rendering' > 'Demo Customers' > 'Regions' > 'Content Body' > 'DEMO_CUSTOMERS' > 'Attributes'. The 'Attributes' property is selected. The main area shows the 'Property Editor - Attributes' dialog with a '▼ Actions Menu' section. This section contains several properties, each with 'Yes' and 'No' radio buttons:

- Include Actions Menu: Yes (selected), No
- Filter: Yes (selected), No
- Select Columns: Yes (selected), No
- Rows Per Page: Yes (selected), No
- Sort: Yes (selected), No
- Control Break: Yes (selected), No

Below the 'Actions Menu' section, there are several rows of 'Yes' and 'No' radio buttons, likely for other report attributes. The bottom of the page features the RMOUG logo and the text 'Interactive Reports ... Deep Dive'.

<= APEX 4.2 Action Menu

My Orders

Search Bar

Rows 15 Go

Sales Rep = 'DEMO' Control Summary

Small Orders

Order #	Customer Name	Order Month	Order
7	LaGuardia, Fiorello	February 2009	
3	Hartsfield, William	March 2009	
1	Dulles, John	March 2009	
4	Logan, Edward	March 2009	
2	Hartsfield, William	March 2009	
10	Bradley, Eugene	February 2009	
9	Lambert, Albert	February 2009	
6	OHare, Edward "Butch"	February 2009	
8	Lambert, Albert	February 2009	
5	Logan, Edward	March 2009	
			Sum

Link to Single Row

Action Menu

- Select Columns
- Filter
- Sort
- Control Break
- Highlight
- Compute
- Aggregate
- Chart
- Flashback
- Save Report
- Reset
- Help
- Download

APEX 5+ Action Menu

Go 1. Primary Report Rows 15 Actions

Reset Report Enter New Order >

Customer Name	Sales Rep	Order Items	Order Total	Order Date	Order Month
Bradley, Eugene	DEMO	3	\$870.00	/2014	June 2014
Hartsfield, William	DEMO	3	\$730.00		June 2014
OHare, Frank	DEMO	4	\$1,060.00		June 2014
Logan, Edward	DEMO	7	\$905.00		June 2014
Logan, Edward	DEMO	4	\$1,515.00		May 2014
Lambert, Albert	DEMO	5	\$950.00		May 2014
LaGuardia, Fiorello	DEMO	5	\$1,090.00	5/13	May 2014
Hartsfield, William	DEMO	5	\$1,640.00	5/11/2014	May 2014

- Select Columns
- Filter
- Format ▶
- Flashback
- Save Report
- Reset
- Help
- Download
- Subscription

- Sort
- Control Break
- Highlight
- Compute
- Aggregate
- Chart
- Group By
- Pivot



Modal Dialogs

- Pulldown Dialogs are now Modal
- “Improved Usability”
- Better Appearance
- Column Headings
 - Click vs. Mouseover



Things ARE Different ...

- Action Menu Enhancements
 - GROUP BY
 - PIVOT
- New Classes, ID's
- New JavaScript / jQuery

Let's Look at New Features First ...

GROUP BY

- Up to 8 Columns (up from 3)
- APEX 3 – Build Your Own
- APEX 4 - 3 Column Group By
- APEX 5 – 8 Column Group By
- GROUP BY is Single View, Fixed Report
 - Other IR Features Disabled
 - GROUP BY *or* Main Report *or* Chart *or* Pivot



Pivot

Old Way

	Closed		On-Hold		Open		Pending	
Dname	Cost	Budget	Cost	Budget	Cost	Budget	Cost	Budget
ACCOUNTING	650	1,200	9,500	7,000	-	-	-	-
RESEARCH	3,400	1,800	8,000	7,000	-	-	-	-
SALES	100	200	-	-	300	500	-	-
-	4,700	5,000	6,250	10,550	27,250	53,800	0	43,300
	8,850	8,200	23,750	24,550	27,550	54,300	0	43,300

- Printing
- Relations with Other IR Options

Traditional Pivot Query

```
SELECT
  agency,
  area_code,
  year,
  MAX ( CASE WHEN miy = '01' THEN sum_costs ELSE NULL END) jan_costs,
  MAX ( CASE WHEN miy = '02' THEN sum_costs ELSE NULL END) feb_costs,
  MAX ( CASE WHEN miy = '03' THEN sum_costs ELSE NULL END) mar_costs,
  MAX ( CASE WHEN miy = '04' THEN sum_costs ELSE NULL END) apr_costs,
  MAX ( CASE WHEN miy = '05' THEN sum_costs ELSE NULL END) may_costs,
  MAX ( CASE WHEN miy = '06' THEN sum_costs ELSE NULL END) jun_costs,
  MAX ( CASE WHEN miy = '07' THEN sum_costs ELSE NULL END) jul_costs,
  MAX ( CASE WHEN miy = '08' THEN sum_costs ELSE NULL END) aug_costs,
  MAX ( CASE WHEN miy = '09' THEN sum_costs ELSE NULL END) sep_costs,
  MAX ( CASE WHEN miy = '10' THEN sum_costs ELSE NULL END) oct_costs,
  MAX ( CASE WHEN miy = '11' THEN sum_costs ELSE NULL END) nov_costs,
  MAX ( CASE WHEN miy = '12' THEN sum_costs ELSE NULL END) dec_costs,
  MAX ( CASE WHEN miy = '00' THEN sum_costs ELSE NULL END) unk_costs,
  MAX( sum_costs) yr_costs
FROM
( SELECT ...
  FROM ...
  WHERE
  GROUP BY ROLLUP ( ... )
)
WHERE ...
GROUP BY agency, area_code, year
```

Traditional Pivot Query

```
SELECT
```

```
  agency,  
  area_code,  
  year,
```

```
  MAX ( CASE WHEN miy = '01' THEN sum_costs ELSE NULL END)  
  jan_costs,
```

```
  MAX ( CASE WHEN miy = '02' THEN sum_costs ELSE NULL END)  
  feb_costs,
```

```
  MAX ( CASE WHEN miy = '03' THEN sum_costs ELSE NULL END)  
  mar_costs,
```

```
  MAX ( CASE WHEN miy = '04' THEN sum_costs ELSE NULL END)  
  apr_costs,
```

```
  MAX ( CASE WHEN miy = '05' THEN sum_costs ELSE NULL END)  
  may_costs,
```

```
  ...
```



Known Columns Only

Pivot Tables – Known Columns

- Known Columns and Column Names

ex: Project by **Status**

Budget by **Month**

vs

- Unknown Columns and Column Names

ex: Project by Year

Status by Project

<Data> by Year

Standard APEX IR Needs Column Names



Pivot Queries

- Traditional SQL
 - MAX (CASE or DECODE ...)
 - CASE to filter values into columns
 - MAX to flatten the results
 - Need Known Columns

- 11g PIVOT and UNPIVOT

- PIVOT
- PIVOT ... XML

<http://www.oracle.com/technology/pub/articles/oracle-database-11g-top-features/11g-pivot.html>



Pivot Query Options, cont'd

- PIVOT PL/SQL Package - Kyte
 - In Expert One on One
- Dynamic SQL Pivoting - AMIS Solution
 - TYPE, TYPE BODY
 - Pipelined Table Function

<http://technology.amis.nl/blog/1207/dynamic-sql-pivoting-stealing-antons-thunder>

PIVOT - The APEX 5 Easy Way

Dname	Closed		On-Hold		Open		Pending	
	Cost	Budget	Cost	Budget	Cost	Budget	Cost	Budget
ACCOUNTING	650	1,200	9,500	7,000	-	-	-	-
RESEARCH	3,400	1,800	8,000	7,000	-	-	-	-
SALES	100	200	-	-	300	500	-	-
-	4,700	5,000	6,250	10,550	27,250	53,800	0	43,300
	8,850	8,200	23,750	24,550	27,550	54,300	0	43,300



Subscription – Pre APEX 5.0

“End” is a Repeat Count

The screenshot shows the 'Add Subscription' form with the following fields and values:

- Search: [] Go
- Reports: 1. Primary Report
- Actions: [v]
- Email Address: []
- Subject: Primary Report
- Frequency: Daily
- Starting From: 27-MAY-14
- Ending: - No End Date -
- Day: [v]

The 'Ending' dropdown menu is open, showing a list of numbers from 1 to 19. A red arrow points to the number 8. An 'Apply' button is visible next to the dropdown.



Subscription – APEX 5.0 +

- “End” is a true End Date

The screenshot displays the 'Subscription' configuration dialog box. The fields are as follows:

- Email Address:
- Subject:
- Frequency:
- Starting From:
- Ending:

The calendar is open for June 2014, with the 24th selected. The time is set to 08:37 PM. The background shows a list of tasks:

Task	Status
Email Integration	Compl
APEX Environment Configuration	Config
APEX Environment Configuration	Create
Maintain Support Systems	Arrang
Migrate Access Application	Identif
APEX Environment Configuration	Run in



Subscription, Download → Email

Do You Really Want Users Emailing Data?

Consider:

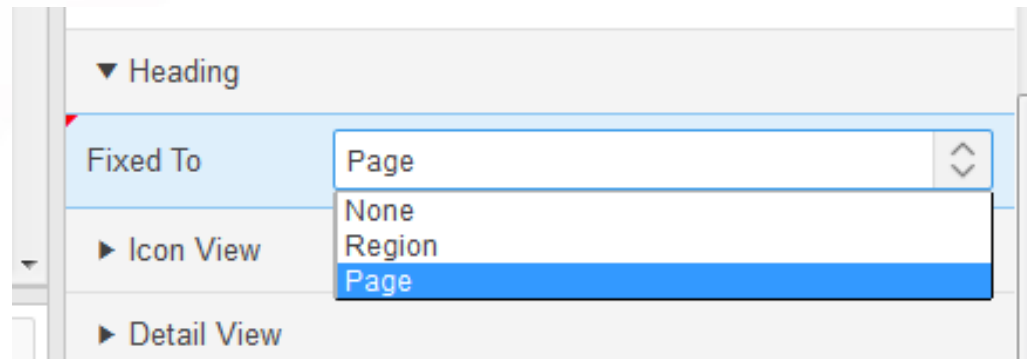
- Email Filters
- Tracking
- Limit Report Data
- Disable Subscription
- Disable Download → Email

Manage at Application Level

- Administration for Saved Reports, Subscriptions Now at Application Level
- Used to Be Each Interactive Report Page

Floating Column Headers

● Heading Attribute



- Page – Aligns Multiple IR Headers Together w Top of Page
- Region – “Sticks” w/in Region Scroll
- None – Headers Scroll off the page

Floating Column Headers

 Yeah!

MULTI-IR PROJECTS

Department	Cost	Budget	Balance	Empno	Ename	Job	Mgr	Hiredate	Sal	Comm	De
OPERATIONS	\$23,100.00	\$20,300.00	-\$2,800.00	7566	JONES	MANAGER	7839	02-APR-81	2975	-	
RESEARCH	\$7,350.00	\$24,400.00	\$17,050.00	7788	SCOTT	ANALYST	7566	09-DEC-82	3000	-	
SALES	\$16,200.00	\$14,750.00	-\$1,450.00	7902	FORD	ANALYST	7566	03-DEC-81	3000	-	
				7369	SMITH	CLERK	7902	17-DEC-80	800	-	
				7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	
				7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	
				7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	

Multiple Interactive Reports

Oracle Application Express 5.0

Oracle Application Express 5.0 will focus on both new features and enhancements to existing functionality to improve developer productivity and is planned to incorporate the following:

- Page Designer - New page definition IDE which incorporates tree controls, drag and drop layout editor, and a property editor.
- Multiple Interactive Reports – Allow any number of Interactive Reports to be defined on a single page.
- Modal Dialog - Enhance the ability to declaratively define modal dialogs.
- Navigation Lists - Ability to define hierarchical lists for navigation, with pull-down menus and sub-menus, instead of being constrained by

● “Any Number” of IR Per Page!

Thank you! ...

Refresher Course

- Underused IR Features:
 - IR_<COLUMN_NAME>
 - CIR – Clear IR (clear all)
 - RIR – Reset IR (to default settings)

Reference IR Columns and Filter Values

● IREQ_<column_alias>	Equals
● IR_< <column_alias>	Equals
● IRLT_< <column_alias>	<
● IRLTE_< <column_alias>	<=
● IRGT_< <column_alias>	>
● IRGTE_< <column_alias>	>=
● IRLIKE_< <column_alias>	SQL LIKE
● IRN_< <column_alias>	NULL
● IRNN_< <column_alias>	NOT NULL
● IRC_< <column_alias>	Contains
● IRNC_< <column_alias>	Not Contains

No BETWEEN, IN, NOT IN

Pre APEX 5 – IR%_COLUMN

Single IR On the Page:

- Reference IR Column Name

IR_COLUMN_NAME

- Create and use IR filter options:

IR%_COLUMN_NAME

Multi IR: – IR%**[STATIC_ID]**_COLUMN

Multiple IRs On the Page:

- Reference IR [Static ID]Column Name

IR[STATIC_ID] _COLUMN_NAME

- Create and use IR filter options:

IR%[STATIC_ID]**_COLUMN_NAME**

Assign IR STATIC_ID

The screenshot displays the Oracle APEX 5 Interactive Reports configuration interface. The main workspace shows a report structure with regions: ITEMS, REGION CONTENT, SUB REGIONS, and a CONTENT BODY region containing a 'Multi-IR Projects' header and various navigation buttons (PREVIOUS, ITEMS, REGION CONTENT, SUB REGIONS, NEXT). A red callout box with the text "Give each IR a STATIC_ID" points to the 'Static ID' field in the 'Advanced' section of the configuration panel on the right. The 'Static ID' field is currently set to 'IRBASE'. Other configuration options visible include Column Span (Automatic), Column CSS Classes, Column Attributes, Custom Attributes, Region Image, Image Tag Attributes, Region Display Selector (Yes/No), Exclude Title from Translation (Yes/No), and Header and Footer (Header Text).

Assign Column Link Attributes

The screenshot displays the Oracle APEX Page Designer interface for 'Application 11839'. The main workspace shows a grid layout with regions like 'ITEMS', 'REGION CONTENT', and 'SUB REGIONS'. A red box labeled 'Column Link Attributes' points to the 'Link' section in the right-hand 'Column' properties panel. This panel is circled in red and contains the following settings:

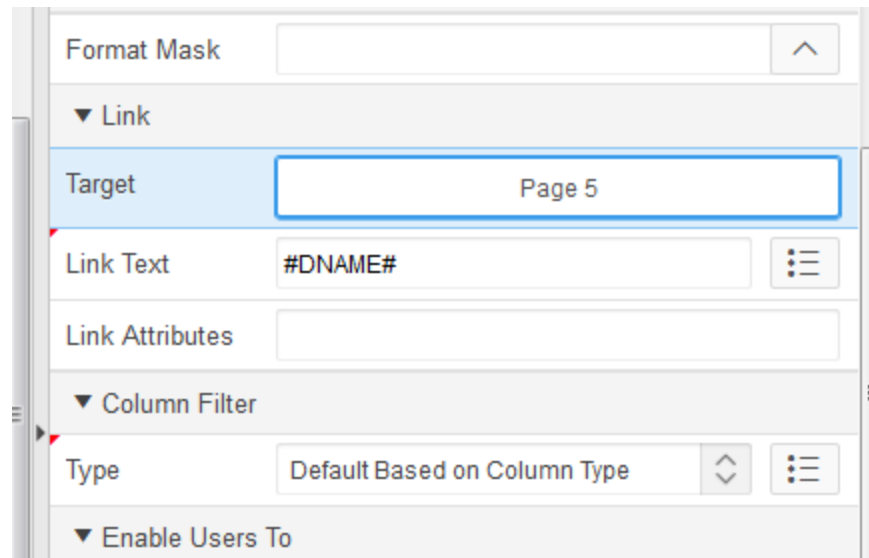
- Target:** Page 5
- Link Text:** #DNAME#
- Link Attributes:** (empty field)
- Column Filter:** Type: Default Based on Column Type
- Enable Users To:**
 - Hide: Yes (checked), No
 - Sort: Yes (checked), No
 - Filter: Yes (checked), No
 - Highlight: Yes (checked), No
 - Control Break: Yes (checked), No
 - Aggregate: Yes (checked), No

The left-hand 'Rendering' tree shows the 'Multi-IR Projects' column selected, with 'DNAME' highlighted as the column attribute.



Assign Column Link Attributes

- Not Easy To Find in Page Designer ...
- Click on Target ...



Format Mask

▼ Link

Target

Link Text

Link Attributes

▼ Column Filter

Type

▼ Enable Users To

Assign Column Link Attributes

- Link Target is a Modal Popup

Link Builder - Target

▼ Target

Type Page in this application

Page 5

▼ Set Items

Name	Value
IREQIRTWO_DEPTNO	#DEPTNO#

▼ Clear Session State

Clear Cache

Reset Pagination Yes No

▼ Advanced

Request

Cancel Clear OK

Reference IR Columns and Filter Values

● IREQ[STATIC_ID]_<column_alias>	Equals
● IR[STATIC_ID]_< <column_alias>	Equals
● IRLT[STATIC_ID]_< <column_alias>	<
● IRLTE[STATIC_ID]_< <column_alias>	<=
● IRGT[STATIC_ID]_< <column_alias>	>
● IRGTE[STATIC_ID]_< <column_alias>	>=
● IRLIKE[STATIC_ID]_< <column_alias>	SQL LIKE
● IRN[STATIC_ID]_< <column_alias>	NULL
● IRNN[STATIC_ID]_< <column_alias>	NOT NULL
● IRC[STATIC_ID]_< <column_alias>	Contains
● IRNC[STATIC_ID]_< <column_alias>	Not Contains

No BETWEEN, IN, NOT IN

Developer Features – CIR and RIR

- CIR[STATIC_ID] and RIR[STATIC_ID]
are Buggy in APEX 5.0 EA 2.0. 3.0

... OR we don't know the right syntax ...

Multi IR Demo – “The Dashboard”

Home ▼

Home → Multi IR

Q ▼ Go Actions ▼

Deptno	Dname	Loc
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

1 - 4

Q ▼ Go Actions ▼

☰ Deptno = 20

Empno	Ename	Job	Mgr	Hiredate	Sal	Comm	Deptno
7369	SMITH	CLERK	7902	17-DEC-80	800	-	20
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000	-	20
7876	ADAMS	CLERK	7788	12-JAN-83	1100	-	20
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20

1 - 5

Q ▼ Go Actions ▼

☰ Deptno = 20

Project	Task name	Start date	End date	Status	Assigned to	Cost	Budget	Manager
Maintain Support Systems	HR software upgrades	23-APR-14	18-JUN-14	On-Hold	Pam King	8000	7000	7902
APEX Environment Configuration	Determine Web listener configuration(s)	24-APR-14	24-APR-14	Closed	James Cassidy	100	100	7566
Email Integration	Complete plan	30-APR-14	05-JUN-14	Closed	Mark Nile	3000	1500	7566
APEX Environment Configuration	Configure Workspace provisioning	02-MAY-14	02-MAY-14	Closed	John Watson	200	100	7566
APEX Environment Configuration	Create pilot workspace	02-MAY-14	02-MAY-14	Closed	John Watson	100	100	7902

1 - 5



Imagine ...

- Using IREQ[**STATIC_ID**]**_COLUMN** to **Link/Jump/Drill Between IRs** on the Same Page ...

Column Link

Link Text ^ ?

DNAME Icon 1 Icon 2 Icon 3 Icon 4 Icon 5 Icon 6 Icon 7 Icon 8

Link Attributes ?

Target ^ ?

Page ^ ?

Reset Pagination

Request ?

Clear Cache ^ ?

Name ?	Value ?
Item 1 <input type="text" value="IREQRTWO_DEPTNO"/> ^ ?	Value 1 <input type="text" value="#DEPTNO#"/> ^ ?
Item 2 <input type="text"/> ^ ?	Value 2 <input type="text"/> ^ ?

Imagine

- Using IR Link/Jump Page ...

Link Builder - Target

▼ Target

Type: Page in this application

Page: 5

▼ Set Items

Name	Value
IREQIRTWO_DEPTNO	#DEPTNO#

▼ Clear Session State

Clear Cache

Reset Pagination: Yes No

▼ Advanced

Request

Cancel Clear OK

Imagine ...

- Passing IREQ[**STATIC_ID**]**_COLUMN** to **Control a Set of IRs** on the Same Page

Early Adopter OR “It Is What It Is”



Agenda: Caveats



- Limitations ... How To Deal w Them
 - New Feature Caveats
 - Old, Developer *and* User Limitations

Limitations

- One Size Fits All Features
- Minor & Less-Known Limitations
 - Still have 32K row limit
 - Charts: 1000 element limit
 - Filters: Commas, SYSDATE, Bugs w/GTE Links
 - Aggregates: Not BI
 - Chart, Group By, Pivot
 - Are “Single View”
 - Other IR Functions Disabled or Limited on these Views

Too Much?

- “One-Size-Fits-All”

Really ?

- Developer Can Enable/Disable
 - *per IR (as of APEX 5)*
 - *per Column*
- Developer Can Add Condition on Link Column
- Conditional Pages

Pre APEX 5, Need multiple IRs on multiple pages for more complex authorizations

APEX IR: Too Much?

- *Use The Settings*
- Declaratively Turn Off Features
- Disable Control Summary
 - `display:none;`
 - On `a-IRR-controlPanel` or specific `a-IRR-<element>`
 - Provide Manually-created RESET or CLEAR buttons

APEX IR: Not Enough?

- *Extend the Toolbar (Widget)*
- Outside the Toolbox
- Provide Manually-created Custom Buttons
- Provide Custom Actions
- Plugins
- Whatever You Can Code ...

**Unless You Use Standard API,
Not Supported**

Limitations – Developers & Users

- 32K Row Limit
- Search Bar All-Column Not DATE-Savvy
- Aggregate Behavior
 - IR is NOT BI Savvy

Know Your Users

Limitations – Dynamic DATE filter

- SYSDATE as Filter Value
 - Use “Is in the last” w/ large value - User
 - Build a Specific URL Filter and Link Column - Dev
 - Build SQL Report to look like a Menu
 - Ex: Bonus Eligible Date
 - Build Derived Column – Dev
 - Ex: CASE WHEN <condition> THEN

```

          'Yes'
        ELSE
          'No'
        END  overdue
  
```

Know Your Users

Aggregate Behavior – Not BI

Original Report Display

Region: West

State	County	City	Population
CA	Orange County	Irvine	100
CA	Orange County	Orange	200
CA	Los Angeles	Hollywood	300
CA	Los Angeles	Universal City	400
Sum			1,000

Know Your Users

Use Group By

Intended Result

Actual APEX IR Result

Region: West

State	County	Population	State	County	Population
CA	Orange County	300	CA	Orange County	100
CA	Los Angeles	700	CA	Orange County	200
Sum		1,000	CA	Los Angeles	300
			CA	Los Angeles	400
			Sum		1,000



Limitations – Developers & Users

Charts

- Chart *or* Data Set (*or* Group By *or* Pivot)
- Charting Limits
 - 1000 elements Vert, Horiz., Line; 2D Pie
 - Aggregate then chart?
- Chart Labels
 - Vertical Bart Chart may not Display All Labels
- Chart Education!

Know Your Users

Limitations – Developers & Users

Search Columns

- Search Drop Down – Max # is 1000 Columns
- Report Attributes List – Max 100 Columns

Volume of Data Returned

- ? ~ 85K Rows?

THINK ... what do users *really* need?

Know Your Users

Limitations – Developers & Users

APEX IR is **NOT** MS Excel !!

- Arrow Up/Down Right/Left Navigation
- Freeze Columns, Freeze Headers
- WYSIWYG Printing
- Download Data Set
- RETRAINING MAY BE REQUIRED
 - ELSE Plug-Ins

Know Your Users

What do users *really* need?

Agenda: Customizations



- IR Structure and JS Changes
- Appearance
- PDF Print Options

APEX 5.0 New IR Features

- Remember ...



APEX 5.0 IR Structure

- Everything is Changed ...




```

<div class="t-Body-col t-Body-col--main">
<div id="DEPTS" class="t-IRR-region ">
  <h2 class="u-VisuallyHidden">Departments</h2>
  <div id="DEPTS_ir" class="a-IRR-container">
    <div id="DEPTS_worksheet_region" class="a-IRR" aria-live="polite">
      <div id="DEPTS_single_row_view" class="a-IRR-singleRowView"></div>
      <div id="DEPTS_full_view" class="a-IRR-fullView">
        <div id="DEPTS_toolbar" class="a-IRR-toolbar">
        <div id="DEPTS_content" class="a-IRR-content">
          <div id="DEPTS_dialog_js" class="a-IRR-dialogBody" style="display:none">
          </div>
          <style id="DEPTS_worksheet_css" type="text/css">
            <input id="DEPTS_worksheet_id" type="hidden" value="186567292878242260">
            <input id="DEPTS_app_user" type="hidden" value="THTECH">
            <input id="DEPTS_report_id" type="hidden" value="186572956897284285">
            <div id="DEPTS_chart" class="a-IRR-chartView"></div>
            <div id="DEPTS_group_by" class="a-IRR-groupByView"></div>
            <div id="DEPTS_pivot" class="a-IRR-pivotView"></div>
          <div id="DEPTS_data_panel" class="a-IRR-reportView">
            <table id="186567292878242260" class="a-IRR-table" summary="">
              <tbody>
                <tr>
                  <th id="LINK" class="a-IRR-header ">
                  <th id="C186567443293242262" class="a-IRR-header is-active">
                  <th id="C186567586744242262" class="a-IRR-header ">
                </tr>
                <tr>
                  <td headers="LINK">
                  <td headers="C186567443293242262">
                  <td headers="C186567586744242262">NEW YORK</td>
                </tr>
                <tr>
                <tr>
              </tbody>
            </table>
          </div>
        </div>
      </div>
    </div>
  </div>

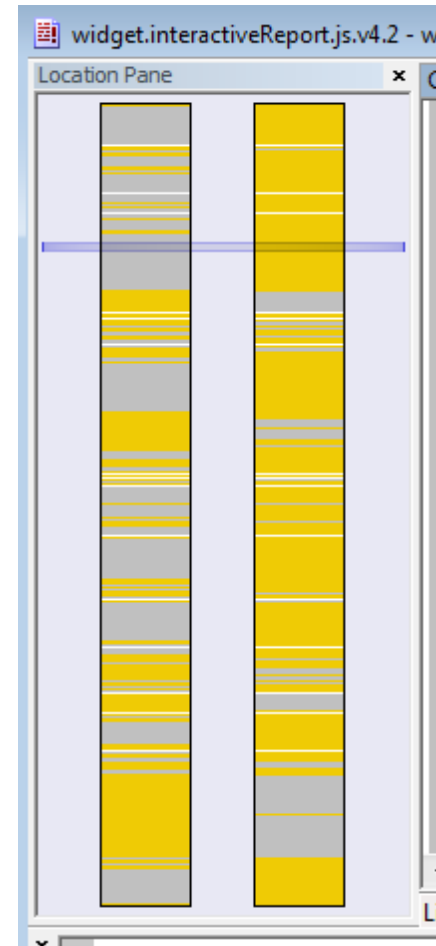
```

APEX 5.0 IR jQuery

- widget.interactiveReport.js
- Whole New Code Base

widget.interactiveReport.js

- Same Name
- Different Contents



RESET `widget.interactiveReport.js?v=4.2...`

```
/**  
 * Reset current worksheet report to initial state  
 * @function  
 */  
this.reset = function() {  
    that.action('RESET', false, false, false);  
};
```


RESET widget.interactiveReport.js?v=5.0.00.20

```
/**
 * Reset current worksheet report to initial state
 * @function
 * */
_reset: function() {
    this._action( "RESET" );
},
```

SEARCH [widget.interactiveReport.js?v=4.2...](#)

```

/**
 * Runs the basic search functionality of the worksheet.
 * @param {String} [pThis] if set to SEARCH check
 * @param {Number} [pRows]
 *
 */
this.search = function(pThis, pRows) {
    var lSearch = that.item.search();
    var lSearch_Col = that.item.search_column();
    var lReport = $v('apexir_REPORT_ID');
    var lTemp;
    if (pThis='SEARCH') {
        if (pRows) {
            that.get.addParam('p_widget_num_return', pRows);
        } else {
            if ($x('apexir_NUM_ROWS')) {
                that.get.addParam('p_widget_num_return', $v('apexir_NUM_ROWS'));
            }
        }
    }
    if ( apex.item( lSearch ).isEmpty() ) {
        that.get.AddArrayItems2($x_FormItems('apexir_TOOLBAR'),1);
        that.pull(lReport);
    } else {
        if (pThis='SEARCH') {
            //lTemp = [$v('apexir_CURRENT_SEARCH_COLUMN'),'contains',$v(lSearch),$v('apexir_NUM_ROWS')];
            that.get.AddArrayItems2($x_FormItems('apexir_TOOLBAR'), 1);
        }
    }
}

```

SEARCH `widget.interactiveReport.js?v=5.0.00.20`

```
/**
 * Runs the basic search functionality of the worksheet.
 * @param {String} [pThis] if set to SEARCH check
 * @param {Number} [pRows] Optionally set to control the number of rows displayed, needs to be done with the search
 * because the user could enter a new search, then select the rows which would issue the search
 */
_search: function( pThis, pRows ) {
    var lData, lFArrays,
        o = this.options,
        lSearch = this._getElement( "search_field" ).val();

    // Searching switches back to report view mode/type
    o.viewMode = "REPORT";
    o.reportViewMode = "REPORT";

    // If pRows passed, this has been changed and the new value used, but only allow if either actions menu
    // row select, or search bar row select is enabled
    if ( pRows && ( o.rowsPerPage || o.rowsPerPageSelect ) ) {
        o.currentRowsPerPage = pRows * 1;
    }

    lFArrays = this._utilGetFormElAttributes( this._getId( "toolbar_controls" ) );
    lData = {
        f01: lFArrays.ids,
        f02: lFArrays.values
    };
};
```

```

/**
 * Runs the basic search functionality of the worksheet.
 * @param {String} [pThis] if set to SEARCH check
 * @param {Number} [pRows] Optionally set to control the number of rows displayed, needs to be done with the search
 * because the user could enter a new search, then select the rows which would issue the search
 */
_search: function( pThis, pRows ) {
    var lData, lFArrays,
        o = this.options,
        lSearch = this._getElement( "search_field" ).val();

    // Searching switches back to report view mode/type
    o.viewMode = "REPORT";
    o.reportViewMode = "REPORT";

    // If pRows passed, this has been changed and the new value used, but only allow if either actions menu
    // row select, or search bar row select is enabled
    if ( pRows && ( o.rowsPerPage || o.rowsPerPageSelect ) ) {
        o.currentRowsPerPage = pRows * 1;
    }

    lFArrays = this._utilGetFormElAttributes( this._getId( "toolbar_controls" ) );
    lData = {
        f01: lFArrays.ids,
        f02: lFArrays.values
    };
    if ( lSearch === "" ) {
        this._pull( null, this.reportId, lData );
    } else {
        this._action( "QUICK_FILTER", lData );
    }
},

```

5.0 Changes - Impact on Existing Code

- Appearance
 - CSS (less of a problem due to Universal Theme)
- PL/SQL
 - Collection Logic, References
- JavaScript
 - Custom Code, References
- Dynamic Actions

**Whatever was Done Non-Standard Will
Need Refactoring!**

Anything that Uses Standard API

- ...is **SAFE**

- ex:

apexrefresh for IR refreshes - Supported

vs.

gReport.search - Not supported

Refactor Example

- Dynamic Action – APEX 4.2
- jQuery w CSS References

```
var rows = $('table.apexir_WORKSHEET_DATA tbody tr:gt(0)');
rows.each(function(idx) {
  var Flags = $(this).children("td[headers='FLAGS']").text();

  if( Flags == 'Outlier')
  {
    $(this).children("td").css("background-color", "#FCF067");
  }
});
```

Refactor Example

● Dynamic Action – APEX 5.0 Style

```
var rows = $('table.a-IRR-table tbody tr:gt(0)');
rows.each(function(idx) {
  var Flags =
$(this).children("td[headers='C226567807683389364']").text();

  if( Flags == 'Outlier')
  {
    $(this).children("td").css("background-color","#FCF067");
  }
});
```


APEX 5 IR Migration

**IFF You Have Custom Code that Does
Not Use the Standard APIs ...
You Will Need To Refactor**

Appearance

Pre APEX 5.0

- Default Appearance is Blah
- Customization via CSS (Hard, Customized)

APEX 5.0

- Appearance is Better
- Customization is Easy!
 - Template Options
 - Template Styles
 - Universal Theme, ThemeRoller

Pre APEX 5: CSS Anatomy of an IR

- Search Bar → apex_finderbar
- Control Panel → apexir_CONTROL_PANEL
- Worksheet → apexir_WORKSHEET
- Column Search → apexir_columnsearch
- All in apex_<version>.css
See ...\\images\\css\\uncompressed for readable version

Do Not Modify the Original!

apexir_WORKSHEET_DATA

```
table.apexir_WORKSHEET_DATA{border:0px
    #ffffff solid;}
table.apexir_WORKSHEET_DATA tfoot tr
    td{background:#efefef;}
table.apexir_WORKSHEET_DATA th{
    background:#4e4e4e;
    font-weight:bold;
    color:#ffffff;
    border-top:1px #ccc solid;
    border-bottom:1px #aaa solid;
    font-size:11px;
    white-space:nowrap;
    vertical-align:center;
    letter-spacing:1;
    background-image:url(../ws/report_bg.gif);
    background-repeat:repeat-x;
}
```

```
table.apexir_WORKSHEET_DATA td{
    background:#efefef;
    border-top:1px #fff solid;
    border-bottom:1px #ccc solid;
    font-size:8pt;
    padding:3px 9px;
    empty-cells:show !important;
}
```

```
table.apexir_WORKSHEET_DATA th div{
    color:#ffffff;
    font-size:11px;
    letter-spacing:1;
    text-decoration:underline;
    cursor:pointer;
    margin:3px 9px;
}
```

Custom Appearance: Pre APEX 5

- **Copy** IR CSS into a New File: my_custom_IR.css
- Place Custom CSS File **after** apex_#_#.css
- Change as Little as Possible
- Web Developer: Edit CSS for Visual Feedback
 - Try Out Your Settings
- Test Test Test
- Test in all Supported/Used Browsers
- Test in End User Browsers
 - Common User Browser Settings often Different than Developer Settings!
- **TEST TEST TEST**

APEX 5+: CSS Anatomy of an IR

- ~~● Search Bar → /...~~
- ~~● Control Panel →~~
- ~~● Worksheet → a...~~
- ~~● Column Search →~~
- Use **Template Options**
- Create/Upload **Template Styles**

No Need for All That Custom CSS!

APEX 5 IR “Cheat Sheet”

- apexir_ ... Ids → **STATIC_ID_ ...**
- apex_ classes → **a-IRR-...**
- APEX 5 Adds a Few More
- JavaScript widget is revamped
widget.interactiveReport.min.js?v=5.0.0.00.20
- The name is the same ... not much else.

The following tables are *for comparison and guideline use only*. The exact IDs, classes and JavaScript functions used will depend on the complete settings and current state of the Interactive

In General:
CSS:
 apexir_ IDs are replaced by corresponding STATIC_ID_<element> IDs where STATIC_ID is the declared or defaulted Static Id of the IR Region. If the developer does not declare a Static Id, APEX
 apex_ classes are replaced by corresponding a-IRR-<element> classes
JavaScript:
 The <JavaScript> is replaced by a new JavaScript widget: widget.interactiveReport.min.js?v=5.0.0.00.20
 The legacy gReport.search/controls/dialog JavaScript functions have been replaced by equivalent (or improved) widget functions.

Table 1 - CSS IDs and Classes

APEX 4.2 and below			APEX 5		
ID	Class	JavaScript	ID	Class	
apexir_REGION_ID			STATIC_ID_ir	t-IRR-region	
apexir_WORKSHEET_REGION	apex_worksheet		STATIC_ID_worksheet_region	a-IRR	
apexir_DETAIL	apex_detail		STATIC_ID_single_row_view	a-IRR-singleRowView	
apexir_REPORT	apex_report		STATIC_ID_full_view	a-IRR-fullView	
apexir_TOOLBAR	apex_toolbar		STATIC_ID_toolbar	a-IRR-toolbar	
apexir_TOOLBAR_OPEN	apexir_TOOLBAR_OPEN		STATIC_ID_toolbar_controls	a-IRR-controls	
apexir_TOOLBAR_CLOSE	apexir_TOOLBAR_CLOSE				
apexir_COLUMN_SELECTOR					
apexir_SEARCHDROPROOT	apexir_SEARCHICON				
apexir_CURRENT_SEARCH_COLUMN					
apexir_SEARCHDROP					
apexir_SEARCH_COLUMN_DROP					
apexir_SEARCH	apexir_SEARCH	gReport.search('SEARCH')			
apexir_btn_SEARCH	<your button class>	gReport.search('SEARCH')	STATIC_ID_Column_search_drop	a-IRR-colSearch	
apex	apexir_SAVED_REPORTS			a-IRR-savedReports	
				a-IRR-views	
apexir_SEARCH_BAR_OPTIONS					
apexir_NUM_ROWS	apexir_ROW_SELECT_LIST	onchange="gReport.search('SEAR	STATIC_ID_row_select		
	apexir_ACTION_MENU			a-IRR-actions	
		onclick="gReport.controls.menu		a-Button a-IRR-button a-IRR-	
	dhtmlMenuLGButton	(this,'apexir_ACTIONSMENU',fals	STATIC_ID_actions_buttons	button-actions a-	
		e); return false;"		MenuButton	
		onmouseover="dhtml_CloseAllS			
		ubMenusL(this)" href="javascrip			
apexir_ACTIONSMENU	dhtmlSubMenu	t:gReport.dialog2('SHOW_COLU	STATIC_ID_column_search_root	a-IRR-colSelector	
apexir_FORMAT_MENU	dhtmlSubMenu	MN','COLUMN');"			
apexir_WORKSHEET			STATIC_ID_content	a-IRR-content	
apexir_CONTROL_PANEL	drop_panel		STATIC_ID_dialog_js	a-IRR-dialogBody	
apexir_WORKSHEET			STATIC_ID_worksheet_id		
			STATIC_ID_worksheet...		

APEX IR PDF Print OOTB Options

- Print Attributes - Generic Template Only
 - Same Width Columns
 - Basic Header/Footer Settings
- Issues:
 - Equal Column Widths
 - No-Print Columns
 - No Highlighting, Formatting
 - Break Columns?
 - Pivot? Chart? Group By?

APEX IR PDF Print Problem

- Need to Capture As-Is Report Query and Configuration

One Option:

- APEX 4.1: APEX_IR_QUERY
 - Modified SS Version for Sorts, Column Order
 - Modify Your Version for Your Needs
- APEX 4.2 +: APEX_IR Package
- APEX 5: APEX_IR Package

PDF Print Options

- Report Query
 - Capture SQL via APEX_IR (or Pre APEX 4.2 Equiv)
- Report Layout
 - XSL-FO Named Column Template
 - Stylus Studio, FO Designer, BI Publisher Desktop, Manual

**This Approach for Fixed Columns Only –
Not True WYSIWYG**

PDF Print Options

Report Query

- Create TYPE to Hold Report Structure
- Create Views w Same Structure as the TYPE
- Create FUNCTION to use Dynamic SQL to Select from View based on APEX_IR_QUERY Output, Return Table Type
- Parameters APP_ID, Page, Session, IR ID, Any IR Parameters

PDF Print Options

Report Query

Edit Source Query

Source Query:

```
(SELECT
  instrument_name,
  test_name,
  reagent,
  units,
  lot_number,
  lab_name,
  inst,
  n,
  TO_CHAR(mean, '999,990.9990') mean,
  TO_CHAR(sd, '999,990.9990') sd,
  TO_CHAR(cv*100, '999,999.0') || '%' cv,
  TO_CHAR(te_percent*100, '99.0') || '%' te_percent,
  TO_CHAR(te_units, '990.90') te_units,
  TO_CHAR(peer_mean, '999,990.9990') peer_mean,
  TO_CHAR(sigma_actual, '999,990.0') sigma_actual,
  TO_CHAR(sigma_bias, '999,990.0') sigma_bias,
  flags,
  TO_CHAR(grade_actual, '990.0') grade_actual,
  TO_CHAR(grade_bias, '990.0') grade_bias,
  te_method,
  pg_uid,
  outlier_flag,
  ROWNUM
```

PDF Print

● Function Returns Table Type

```
ROW_NUMBER( ) OVER (PARTITION BY pg_uid  
ORDER BY APEX_IR_QUERY.IR_QUERY_SORT(:APP_ID, :APP_PAGE, :APP_SESSION), me  
FROM TABLE( GET_IR_ORY('THTECH',  
:APP_ID,  
:APP_PAGE,  
:APP_SESSION)  
) ORDER BY o_rn));
```

PDF Print Options

Report Layout

```

<?xml version='1.0'?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform" xmlns:s="http://www.stylusstudio.com/xquery">
  <xsl:template match="/">
    <fo:root xmlns:fo="http://www.w3.org/1999/XSL/Format">
      <fo:layout-master-set>
        <fo:simple-page-master master-name="default-page" page-height="8.5in" page-width="11in"
          margin-left="0.5in" margin-right="0.5in" margin-top="0.25in" margin-bottom="0.25in">
          <fo:region-body margin-top="0.25in" margin-bottom="0.5in"/>
          <fo:region-before extent="1.0in"/>
          <fo:region-after extent="0.3in"/>
        </fo:simple-page-master>
      </fo:layout-master-set>
      <fo:page-sequence master-reference="default-page">
        <fo:static-content flow-name="xsl-region-before" font-size="8pt" font-family="times,serif" color="red" text-align="center">
          <fo:table>
            <fo:table-column column-width="5in"/>
            <fo:table-column column-width="5in"/>
            <fo:table-body>
              <fo:table-row>
                <fo:table-cell>
                  <fo:block text-align="start" color="#006633" font-size="12pt" font-family="times,serif" font-weight="bold">
                    <fo:block><xsl:text> Quest Diagnostics</xsl:text></fo:block>
                  </fo:block>
                </fo:table-cell>
                <fo:table-cell>
                  <fo:block text-align="end" color="black">

```

PDF Print Options

PDF Output Button

● example



Inst Type	Test	Reagent	Units	QC Lot	Laboratory	Inst	N	Mean	SD	CV %	TEa %	TEa Fixed	Peer Mean	#	# w/Bias	Flags	Grade	Grade w/Bias
1			SI D6	5 9			31	27.6580	0.3580	1.3%	15.0%		27.8015	11.6	11.2		98.0	97.4
1			SI D6	5 9			31	27.9450	0.4410	1.6%	15.0%		27.8015	9.5	9.2		97.0	96.3
1			SI D6	5 6			33	45.2940	0.5340	1.2%	15.0%		45.4045	12.7	12.5		98.3	98.1
1			SI D6	5 6			33	45.5150	0.5920	1.3%	15.0%		45.4045	11.5	11.3		98.0	97.7
1			SI D6	5 2			33	66.3300	0.8740	1.3%	15.0%		66.7255	11.4	10.9		97.9	97.2
1			SI D6	5 2			33	67.1210	0.7720	1.2%	15.0%		66.7255	13.0	12.5		98.4	97.8
1				5 9			31	1.0750	0.0190	1.8%	20.0%		1.0795	11.3	11.1		97.9	97.5
1				5 9			31	1.0840	0.0210	1.9%	20.0%		1.0795	10.3	10.1		97.5	97.1
1				5 6			33	2.9180	0.0940	3.2%	20.0%		2.9355	6.2	6.0		93.0	92.1
1				5 6			33	2.9530	0.0720	2.4%	20.0%		2.9355	8.2	8.0		96.0	95.3
1				5 2			33	5.5160	0.1000	1.8%	20.0%		5.5515	11.0	10.7		97.8	97.2
1				5 2			33	5.5870	0.1230	2.2%	20.0%		5.5515	9.1	8.8		96.7	96.1
1			SI D6	5 9			31	11.0480	0.1910	1.7%	15.0%		11.0915	8.7	8.4		96.4	95.9
1			SI D6	5 9			31	11.1350	0.2060	1.9%	15.0%		11.0915	8.1	7.9		95.9	95.3
1			SI D6	5 6			32	29.8910	0.6950	2.3%	15.0%		30.0108	6.5	6.3		93.5	92.7
1			SI D6	5 6			33	30.1270	0.7260	2.4%	15.0%		30.0108	6.2	6.1		93.0	92.3
1			SI D6	5 2			33	55.8610	1.0050	1.8%	15.0%		56.2140	8.3	8.0		96.1	95.2
1			SI D6	5 2			33	56.5670	1.2310	2.2%	15.0%		56.2140	6.9	6.6		94.3	93.2
			SI D6	5 9			24	26.1790	0.2300	.9%	15.0%		27.8108	17.1	10.4	Comments	99.1	90.4
			SI D6	5 9			29	26.3520	0.3540	1.3%	15.0%		27.8108	11.2	7.3	Comments	97.8	88.5
			SI D6	5 9			40	26.4480	0.6620	2.5%	15.0%		27.8108	6.0	4.0	Comments	92.5	79.5
System	APTT		SI D6	5 9	ALCADA 100L	CXV560	51	26.4700	0.2500	.9%	15.0%		27.8108	15.9	10.8	Consensus	98.9	92.2

PDF Output - Limitations

- Named Columns
- Set Column Order - **Not WYSIWYG**
- **Tedious**
- Future:
 - Edit XSL-FO Template to handle Conditional Column
 - Generate XSL-FO Template On The Fly
 - ALGEN Modification
 - See George Barra for original ALGEN

PDF Output – Other Options

- Plugins
- PL/PDF
- Jasper Reports
- BIRT
- Export to Excel Options
- Node.js output to Word, Excel

**Depends On Your Needs –
Know Your Users**

APEX 5.1 SOD

“PDF Printing – Improve the printing capabilities utilizing the Oracle REST Data Services FOP Support.”

- FOP 1.1 Embedded in APEX REST Services

Customizations: Demo



LEGOJANG.com

Recap:

Enhancements

APEX 5.0 New Features

APEX 5.0 New CSS

APEX 5.0 New JavaScript

Caveats

Limitations & Workarounds

Customizations

Limitations & Workarounds



Resources

- **APEX 5.0 Early Adopter 3.0**

<http://apexea.oracle.com>

- **The APEX OTN Forum -**

<http://forums.oracle.com/forums/forum.jspa?forumID=137> .

- **APEX Interactive Report OBE's**

http://www.oracle.com/technology/products/database/sql_developer/index.html

- **AMIS Pivot Implementation for pre APEX 5**

<http://....>

- **APEX 5 IR Cheat Sheet**

<http://thtechnology.com/APEX5>

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ODTUG

Questions ?

APEX IR DEEP DIVE

APEX 5 Preview

Karen Cannell

kcannell@thtechnology.com



TH TECHNOLOGY

Thank You ~

APEX IR DEEP DIVE

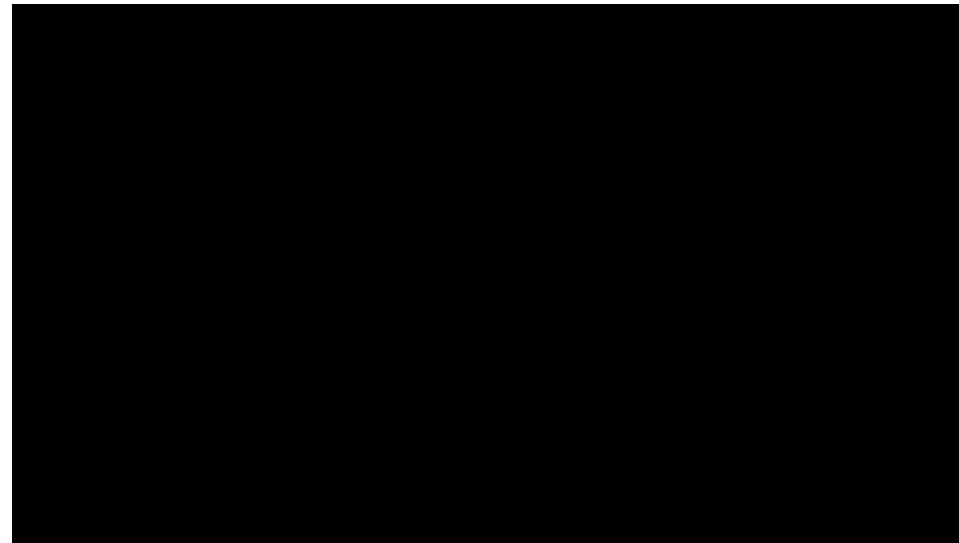
APEX 5 Preview

Please fill out the evaluations!
Karen Cannell



TH TECHNOLOGY

Nostalgia ...



Ch, Ch, Ch, Ch, Ch, Ch, Ch



Appendix:

- Multiple IR on Single Page, Pre-APEX 5



Pre APEX 5: One IR per Page

- ***Need*** for > 1 APEX IR ?

- **IFF So: Iframe**

Sample Application

ADMIN [Print](#) [Logout](#)

- Home
- Customers
- Customers & Orders
- Products
- Orders
- Charts
- Admin

Rows

[Create Customer >](#)

Top Customers	
LaGuardia, Fiorello	\$3,800.00
Hartsfield, William	\$2,598.00
Dulles, John	\$1,200.00
Logan, Edward	\$790.00
Bradley, Eugene	\$500.00
Lambert, Albert	\$490.00
OHare, Edward "Butch"	\$250.00

Customer Name	Address	City	State	ZIP Code
Bradley, Eugene	Schoephoester Road	Windsor Locks	CT	06096
Dulles, John	45020 Aviation Drive	Sterling	VA	20166
Hartsfield, William	6000 North Terminal Parkway	Atlanta	GA	30320
LaGuardia, Fiorello	Hangar Center, Third Floor	Flushing	NY	11371
Lambert, Albert	10701 Lambert International Blvd.	St. Louis	MO	63145
Logan, Edward	1 Harborside Drive	East Boston	MA	02128
OHare, Edward "Butch"	10000 West OHare	Chicago	IL	60666

“First” IR,
on the
main page

1 - 7

This is a 2nd IR on the same page!

Rows

Name	Category	Avail?	List Price	Unit	Sales	# Cust	Dt Sold	Img
3.2 GHz Desktop PC	Computer	Y	1200	4	4800	2	24-MAR-2009 02:29PM	
MP3 Player	Audio	Y	199	1	199	1	19-MAR-2009 02:29PM	
Bluetooth Headset	Phones	Y	40	2	80	2	04-MAR-2009 02:29PM	
PDA Cell Phone	Phones	Y	250	3	750	3	09-MAR-2009 02:29PM	

“Second” IR is
in an iframe
(really in
separate app)



Pre APEX 5 > 1 IR: IFRAME

- Create the first IR on the main page
- Create then next IR in separate app
 - Plain Page Template
 - Plain Region – No Template
- Create an HTML Region on main page
- Enter Iframe reference in Region Source

Iframe Source

Source

Region Source

```
<iframe style="overflow:auto;width:100%;height:100%;" frameborder="0"  
src="f?p=108.:1:&SESSION_ID.::::">  
  <p>Your browser does not support iframes.</p>  
</iframe>
```