



BE REMARKABLE



# SQL TOOLS FOR FUNCTIONAL USERS

SESSION 36046  
10<sup>th</sup> November 2016

ADU 9-11 NOVEMBER 2016

# PRESENTERS

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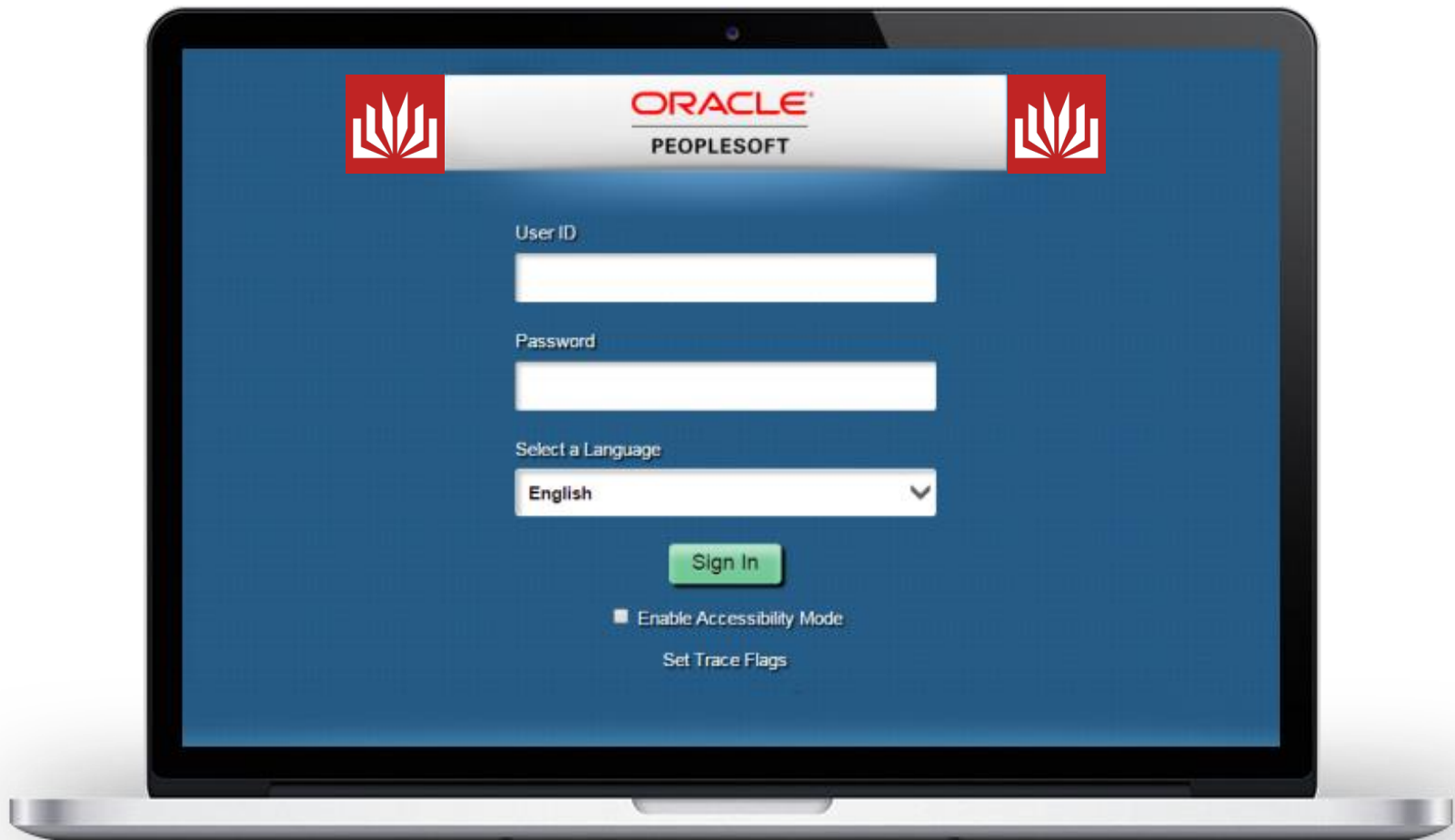
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- Ranked in top 3% of Universities Globally
- 50,000 Students
- 5 campuses
- 200 degrees
- Rated 5 stars for graduate employability
- 4,000 Staff
- 200,000 Alumni across 130 nationalities

# GRIFFITH UNIVERSITY

ADU 9-11 NOVEMBER 2016



### Database Infrastructure

- Oracle 12c Real Application Clusters Database/Dataguard
- Oracle 12c Grid Infrastructure/ASM

### Peopletools 8.54/8.55

- PeopleTools 8.54.18
- PeopleTools 8.55.08 (Upgrade go-live 25/11)

### PeopleSoft

- Campus Solutions 9.0 (bundle 42 go-live 25/11)
- Integration Hub Portal 9.1
- Finance 9.2 Bundle 36 (9.2 project underway)
- HR 9.2 (pum 17 go-live 25/11)

# ORGANIZATION & ORACLE

# OVERVIEW

1

Oracle SQL  
Developer  
*Tips and Tricks*

2

Surveillance App  
Engine  
Custom Application  
Engine for data  
surveillance





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# ORACLE SQL DEVELOPER

Tips and Tricks for  
Functional Analysts



# ORACLE SQL DEVELOPER

*“Modern Technology has become a total phenomenon for civilization, the defining force of a new social order in which efficiency is no longer an option but a necessity imposed on all human activity.”*

**Jacques Ellul**  
French Philosopher

Oracle SQL Developer is a great tool that enhances productivity and simplifies several functional tasks to achieve greater efficiency that we all require in today's world.



# ORACLE SQL DEVELOPER

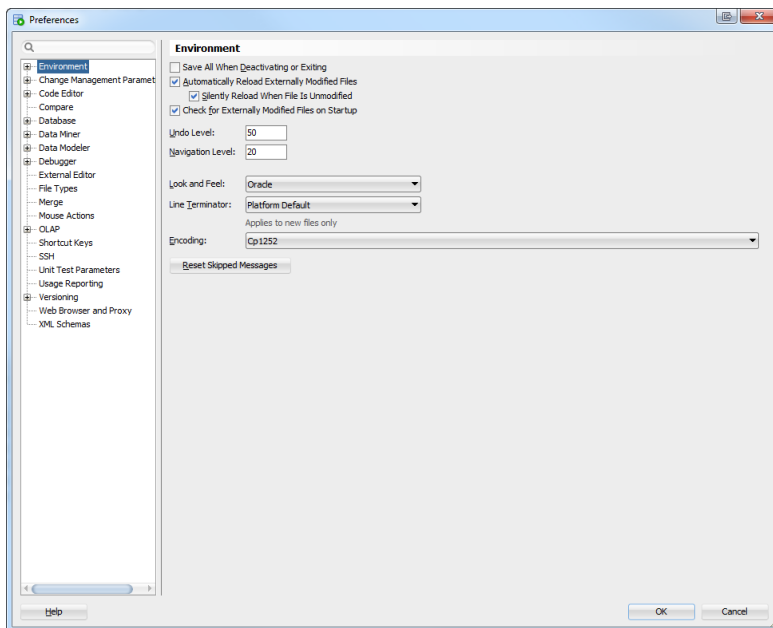
Tips and Tricks for  
Functional Analysts

- Useful Preferences
- Snippets
- Navigating through database objects
- Query Builder
- User Defined Reports





# USEFUL PREFERENCES

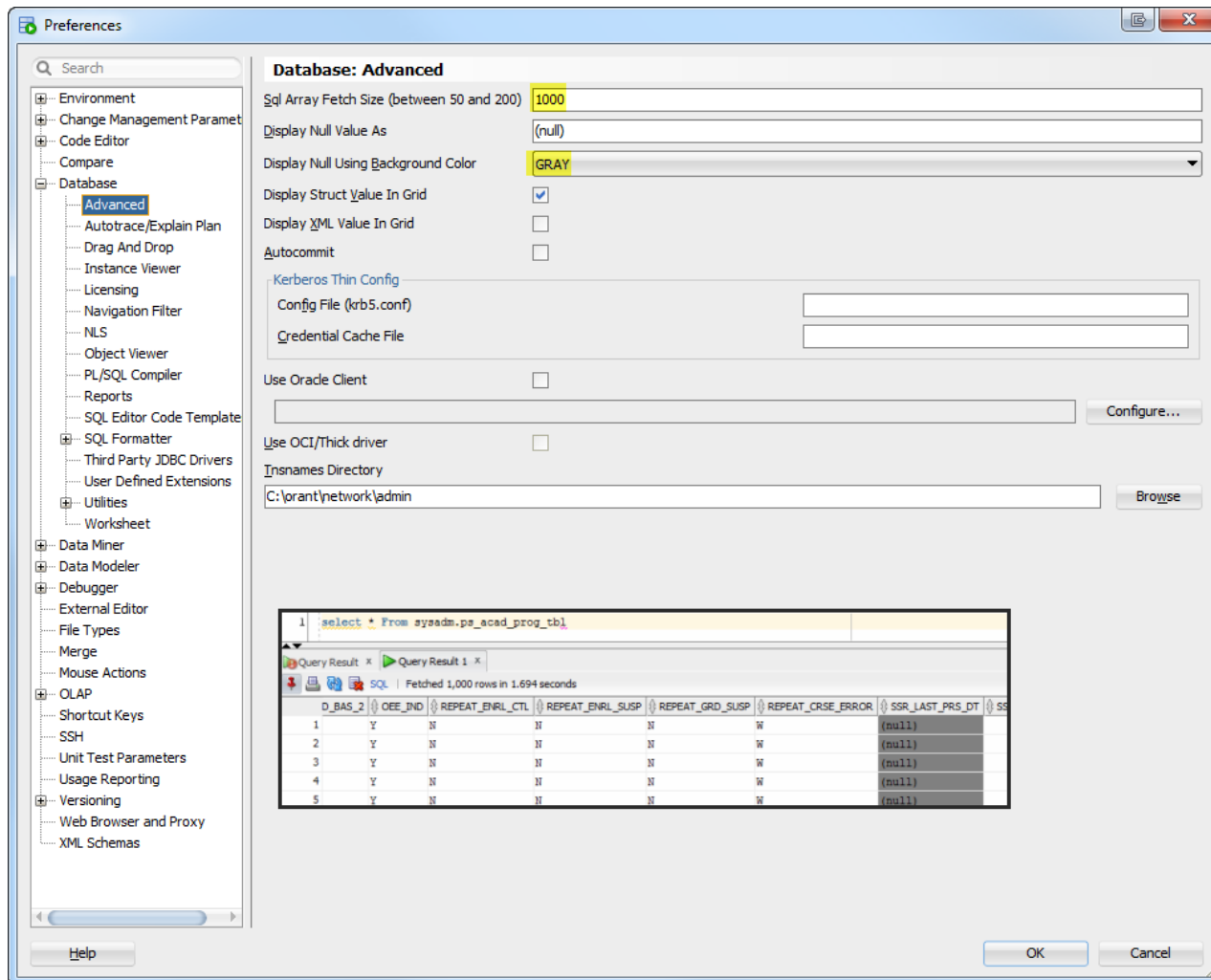


## Useful Preferences for Power Users

- SQL Array Fetch Size
- Completion Insight
- Navigation Filter
- SQL Editor Code Templates
- Multiple Query Tabs



# USEFUL PREFERENCES



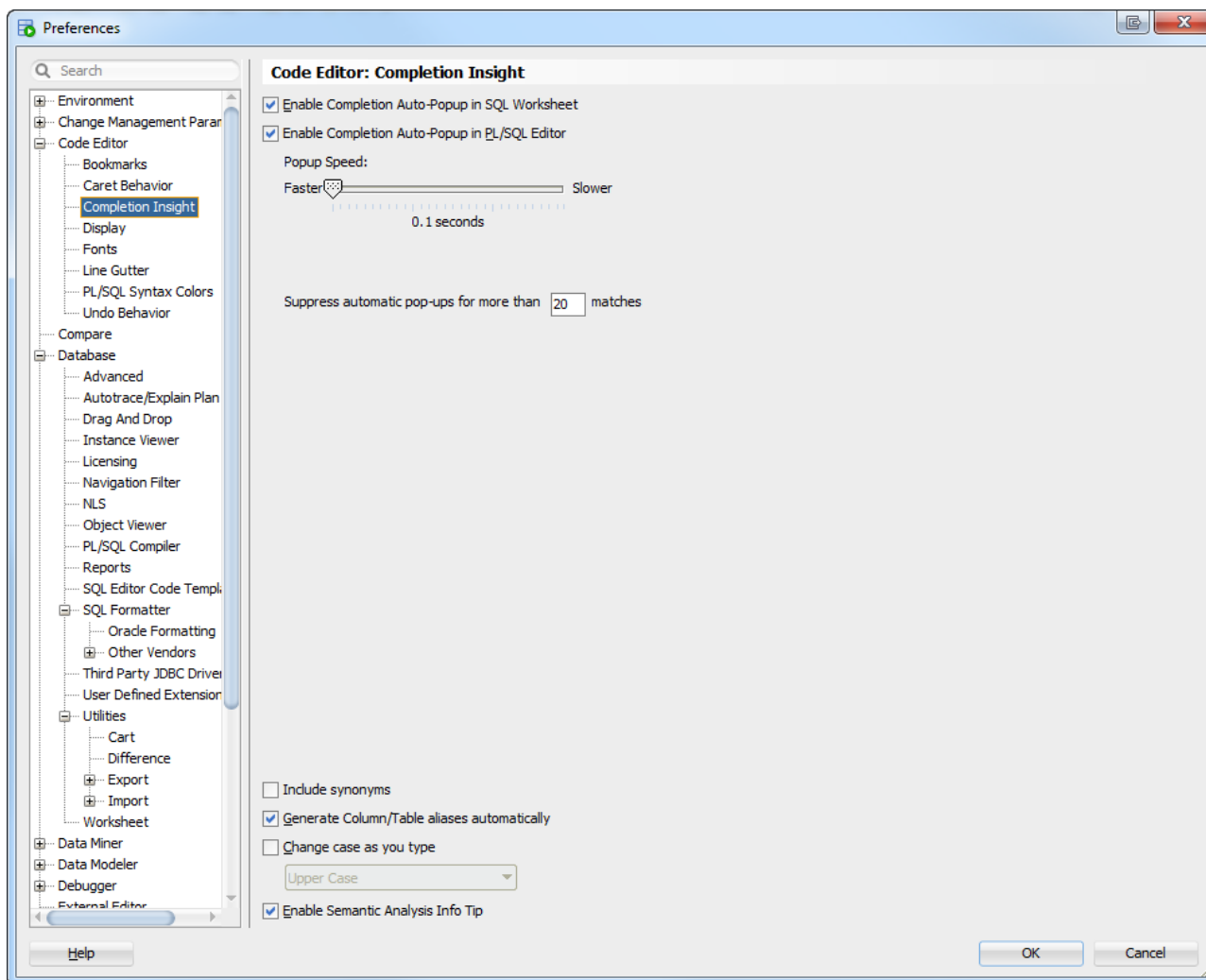
## SQL Array Fetch Size

## Database:Advanced

- SQL Array Fetch Size of 1000 returns up to 1000 rows a statement is run (As per Screenshot). Scrolling down through the worksheet returns more rows.
- Display Null Value as a specific colour and text to differentiate nulls from ' ' (blank spaces)

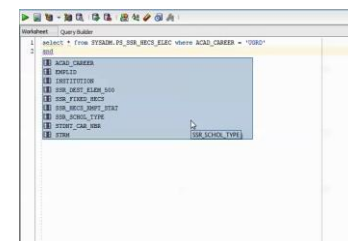


# USEFUL PREFERENCES



## Code Editor: Completion Insight

- Predictive text for database objects and basic functions

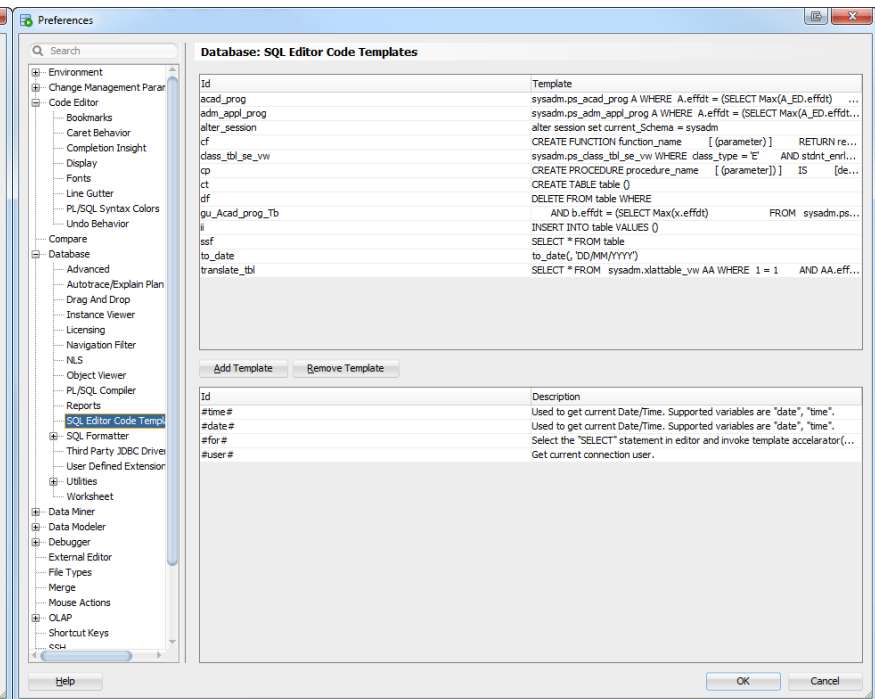
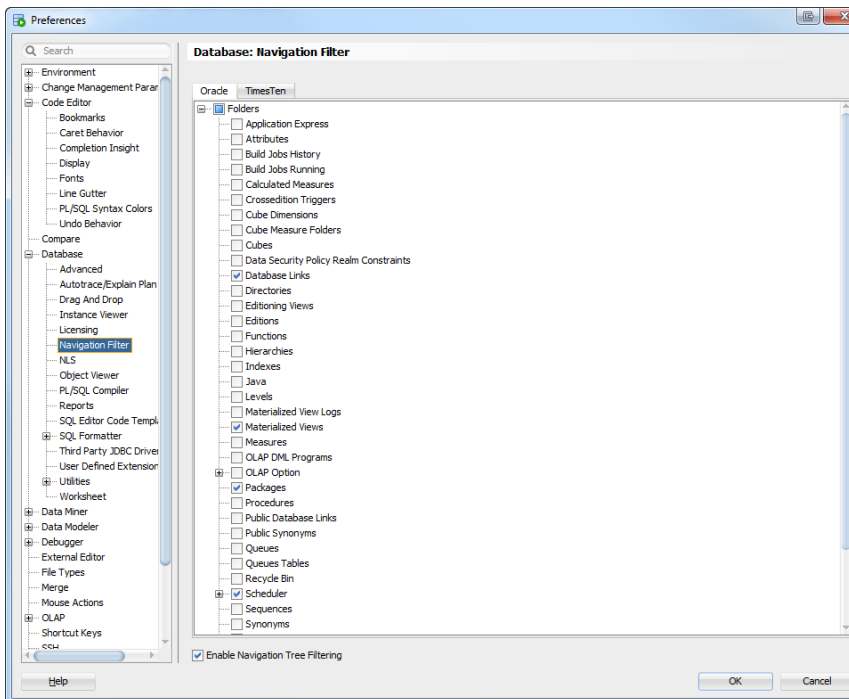




# USEFUL PREFERENCES

## Navigation Filter

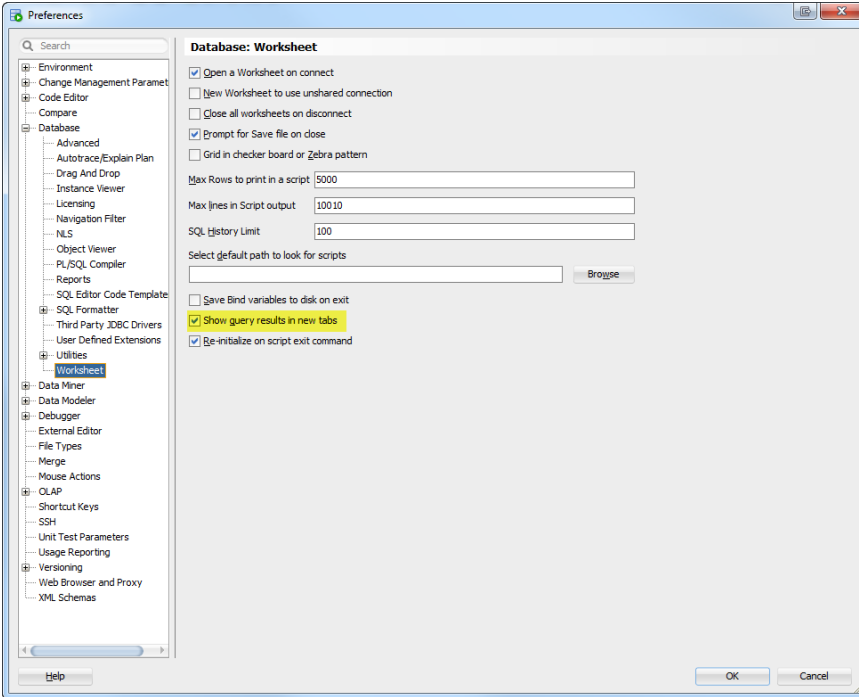
## SQL Editor Code Templates





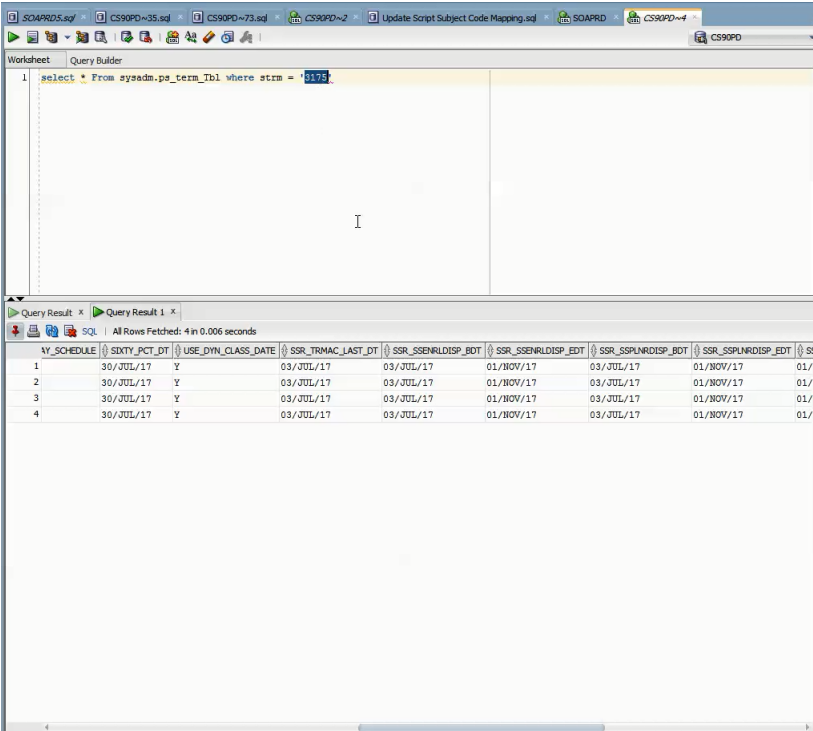
# USEFUL PREFERENCES

## Multiple Query Tabs



**Database: Worksheet**

- ☒ Open a Worksheet on connect
- ☐ New Worksheet to use unshared connection
- ☐ Close all worksheets on disconnect
- ☒ Prompt for Save file on close
- ☐ Grid in checker board or Zebra pattern
- Max Rows to print in a script: 5000
- Max lines in Script output: 10010
- SQL History Limit: 100
- Select default path to look for scripts:  Browse
- ☐ Save Bind variables to disk on exit
- ☒ **Show query results in new tabs**
- ☒ Re-initialize on script exit command



Query Builder

```
select * from sysadm.pa_term_tbl where strm = '5175'
```

Query Result 1

All Rows Fetched: 4 in 0.006 seconds

SY_SCHEDULE	SIXTY_PCT_DT	USE_DYN_CLASS_DATE	SSR_TRMAC_LAST_DT	SSR_SSENRLDISP_BDT	SSR_SSENRLDISP_EDT	SSR_SSPUNRLDISP_BDT	SSR_SSPUNRLDISP_EDT	SS
1	30/JUL/17	Y	03/JUL/17	03/JUL/17	01/NOV/17	03/JUL/17	01/NOV/17	01/
2	30/JUL/17	Y	03/JUL/17	03/JUL/17	01/NOV/17	03/JUL/17	01/NOV/17	01/
3	30/JUL/17	Y	03/JUL/17	03/JUL/17	01/NOV/17	03/JUL/17	01/NOV/17	01/
4	30/JUL/17	Y	03/JUL/17	03/JUL/17	01/NOV/17	03/JUL/17	01/NOV/17	01/



# NAVIGATING THROUGH DATABASE OBJECTS

Connections

- CS90DEV
- CS90PD
- CS90PR1
- CS90PS
- Tables (Filtered)
- Views
- Packages
- Materialized Views
- Database Links
- Scheduler
- Other Users (Filtered)
- SYSADM
  - Tables (Filtered)
    - PS\_ADJ\_TERM\_TBL
    - PS\_EXT\_TERM\_TBL
    - PS\_TERM\_TBL
  - INSTITUTION
  - ACAD\_CAREER
  - STRM
  - DESCR
  - DESCRSHORT
  - TERM\_BEGIN\_DT
  - TERM\_END\_DT

Reports

- All Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports
  - All Semester Enrolment by Appointment
    - Enrolment Numbers by Minute (Multiple Terms)
    - Enrolment Numbers by Seconds (Multiple Terms)
  - Cumulative Enrolment
  - Open Enrolment Graphs
    - 01. Students Eligible by Appointment
    - 02. Distinct EMPIDs Enrolling
    - 03. Total Students Enrolled (Seconds)
    - 04. Students Enrolled by Minute
    - 05. Students Enrolled (Seconds)
    - 05 Enrolment Numbers by Minute (Multiple Terms)
  - Internal Transfer Report
  - Issue Enrolment

Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashback | Dependencies | Details | Partitions | Indexes | SQL

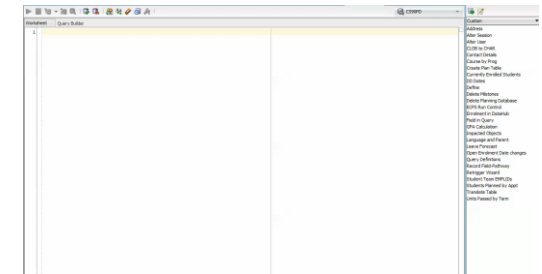
Sort... Filter...

	INSTITUTION	ACAD_CAREER	STRM	DESCR	DESCRSHORT	TERM_BEGIN_DT	TERM_END_DT	SESSION_CODE	WEEKS_OF_INS
1011	GRIFF	UGRD	2164	OUA - Study Session 2, 2016	OUA - Ses2	18/JUL/16	23/OCT/16	1	
1012	GRIFF	PGRD	2166	OUA - Study Session 3, 2016	OUA - Ses3	14/NOV/16	19/FEB/17	1	
1013	GRIFF	PGRD	2167	OUA - Study Period 4, 2016	OUA - SP4	28/NOV/16	26/FEB/17	1	
1014	GRIFF	NAWD	1175	CALL - Term 6, 2017	CALL6 2017	26/JUN/17	28/JUL/17	1	
1015	GRIFF	NAWD	1176	CALL - Term 7, 2017	CALL7 2017	31/JUL/17	01/SEP/17	1	
1016	GRIFF	NAWD	1177	CALL - Term 8, 2017	CALL8 2017	04/SEP/17	06/OCT/17	1	
1017	GRIFF	NAWD	1179	CALL - Term 10, 2017	CALL102017	13/NOV/17	15/DEC/17	1	
1018	GRIFF	PGRD	2183	OUA - Study Period 2, 2018	OUA - SP2	28/MAY/18	26/AUG/18	1	
1019	GRIFF	NAWD	2184	OUA - Study Session 2, 2018	OUA - Ses2	16/JUL/18	21/OCT/18	1	
1020	GRIFF	PGRD	2184	OUA - Study Session 2, 2018	OUA - Ses2	16/JUL/18	21/OCT/18	1	
1021	GRIFF	UGRD	2184	OUA - Study Session 2, 2018	OUA - Ses2	16/JUL/18	21/OCT/18	1	
1022	GRIFF	NAWD	2185	OUA - Study Period 3, 2018	OUA - SP3	27/AUG/18	25/NOV/18	1	
1023	GRIFF	UGRD	2185	OUA - Study Period 3, 2018	OUA - SP3	27/AUG/18	25/NOV/18	1	
1024	GRIFF	PGRD	2185	OUA - Study Period 3, 2018	OUA - SP3	27/AUG/18	25/NOV/18	1	
1025	GRIFF	NAWD	2186	OUA - Study Session 3, 2018	OUA - Ses3	12/NOV/18	17/FEB/19	1	
1026	GRIFF	UGRD	2186	OUA - Study Session 3, 2018	OUA - Ses3	12/NOV/18	17/FEB/19	1	
1027	GRIFF	PGRD	2186	OUA - Study Session 3, 2018	OUA - Ses3	12/NOV/18	17/FEB/19	1	
1028	GRIFF	NAWD	2187	OUA - Study Period 4, 2018	OUA - SP4	26/NOV/18	24/FEB/19	1	
1029	GRIFF	UGRD	2187	OUA - Study Period 4, 2018	OUA - SP4	26/NOV/18	24/FEB/19	1	
1030	GRIFF	PGRD	2187	OUA - Study Period 4, 2018	OUA - SP4	26/NOV/18	24/FEB/19	1	
1031	GRIFF	UGRD	3168	Summer Semester 2016 (Nov-Dec)	Sum Nov 16	28/NOV/16	31/DEC/16	DD4	
1032	GRIFF	NAWD	3168	Summer Semester 2016 (Nov-Dec)	Sum Nov 16	28/NOV/16	31/DEC/16	DD4	
1033	GRIFF	PGRD	3168	Summer Semester 2016 (Nov-Dec)	Sum Nov 16	28/NOV/16	31/DEC/16	DD4	
1034	GRIFF	RSCH	3168	Summer Semester 2016 (Nov-Dec)	Sum Nov 16	28/NOV/16	31/DEC/16	DD4	
1035	GRIFF	UGRD	3169	Summer Semester 2017 (Jan-Feb)	Sum Jan 17	01/JAN/17	10/FEB/17	DD4	
1036	GRIFF	NAWD	3169	Summer Semester 2017 (Jan-Feb)	Sum Jan 17	01/JAN/17	10/FEB/17	DD4	
1037	GRIFF	PGRD	3169	Summer Semester 2017 (Jan-Feb)	Sum Jan 17	01/JAN/17	10/FEB/17	DD4	
1038	GRIFF	RSCH	3169	Summer Semester 2017 (Jan-Feb)	Sum Jan 17	01/JAN/17	10/FEB/17	DD4	
1039	GRIFF	NAWD	3211	Trimester 1 2021	Tri 1 2021	01/MAR/21	28/MAY/21	1	
1040	GRIFF	PGRD	3211	Trimester 1 2021	Tri 1 2021	01/MAR/21	28/MAY/21	1	
1041	GRIFF	RSCH	3211	Trimester 1 2021	Tri 1 2021	01/MAR/21	28/MAY/21	1	
1042	GRIFF	UGRD	3211	Trimester 1 2021	Tri 1 2021	01/MAR/21	28/MAY/21	1	
1043	GRIFF	NAWD	3215	Trimester 2 2021	Tri 2 2021	05/JUL/21	26/SEP/21	1	
1044	GRIFF	PGRD	3215	Trimester 2 2021	Tri 2 2021	05/JUL/21	26/SEP/21	1	
1045	GRIFF	RSCH	3215	Trimester 2 2021	Tri 2 2021	05/JUL/21	26/SEP/21	1	
1046	GRIFF	UGRD	3215	Trimester 2 2021	Tri 2 2021	05/JUL/21	26/SEP/21	1	



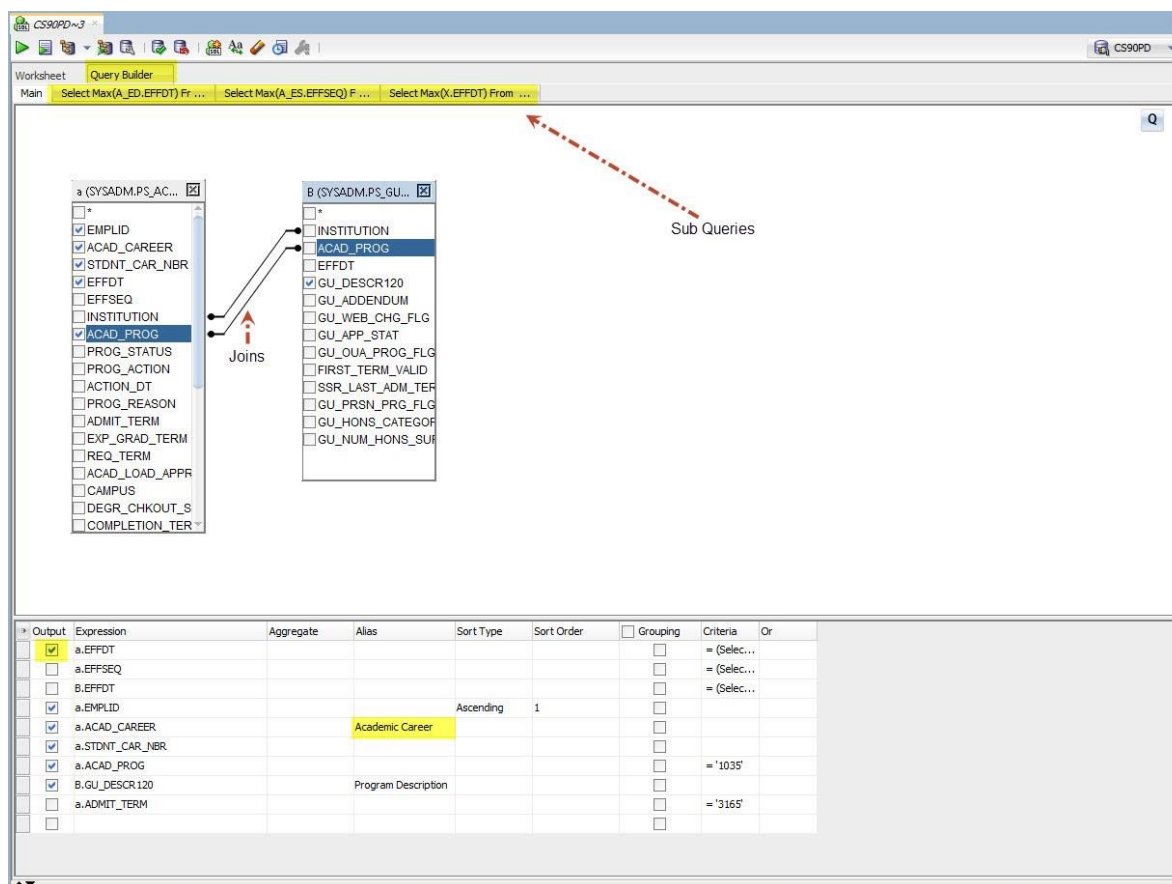
The screenshot shows the Oracle SQL Developer application window. The title bar reads "Oracle SQL Developer : CS90PD~3". The menu bar includes "File", "Edit", "View", "Navigate", "Run", "Source", "Team", "Tools", "Window", and "Help". The "View" menu is currently open, displaying a list of options. The "Snippets" option is highlighted in blue. The background interface shows a "Connections" pane on the left with a tree of database connections, a "Query Builder" tab in the center, and a "Reports" pane at the bottom. The "View" menu options include: Data Modeler, Bookmarks (Ctrl+Shift-K), Breakpoints (Ctrl+Shift-R), Cart, Change Management, Components (Ctrl+Shift-P), Connections, DBA, Data Miner, Dbms Output, Show Only Editor (Ctrl+Shift-Enter), Debugger, Extension Diagnostics, Files, Find DB Object, Log (Ctrl+Shift-L), Map View, OLAP, OWA Output, Processes, Properties (Ctrl+Shift-I), REST Data Services, Recent Objects, Reports, SQL History (F8), SSH, Snippets (highlighted), Task Progress, Thumbnail (Ctrl+Shift-T), Unit Test, Editor, Show Toolbars, Show Status Bar (checked), Refresh (Ctrl-R), and Full Screen.

## Reuse frequently run SQLs with Snippets.





# QUERY BUILDER

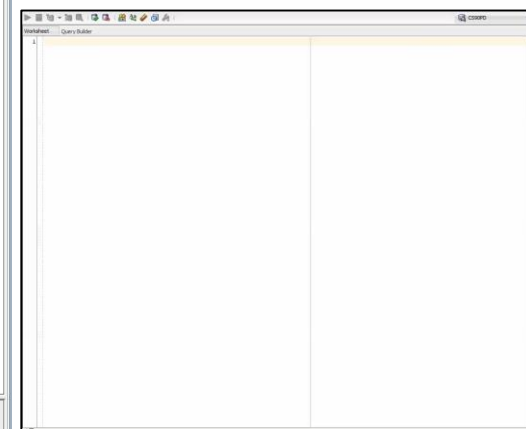


Sub Queries

Joins

Output	Expression	Aggregate	Alias	Sort Type	Sort Order	Grouping	Criteria	Or
<input checked="" type="checkbox"/>	a.EFFDT					<input type="checkbox"/>	= (Selec...	
<input type="checkbox"/>	a.EFFSEQ					<input type="checkbox"/>	= (Selec...	
<input type="checkbox"/>	b.EFFDT					<input type="checkbox"/>	= (Selec...	
<input checked="" type="checkbox"/>	a.EMPLID		Academic Career	Ascending	1	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	a.ACAD_CAREER					<input type="checkbox"/>		
<input checked="" type="checkbox"/>	a.STDNT_CAR_NBR					<input type="checkbox"/>		
<input checked="" type="checkbox"/>	a.ACAD_PROG					<input type="checkbox"/>	= '1035'	
<input checked="" type="checkbox"/>	b.GU_DESCR120		Program Description			<input type="checkbox"/>		
<input type="checkbox"/>	a.ADMIT_TERM					<input type="checkbox"/>	= '3165'	

A visual interface to create queries.





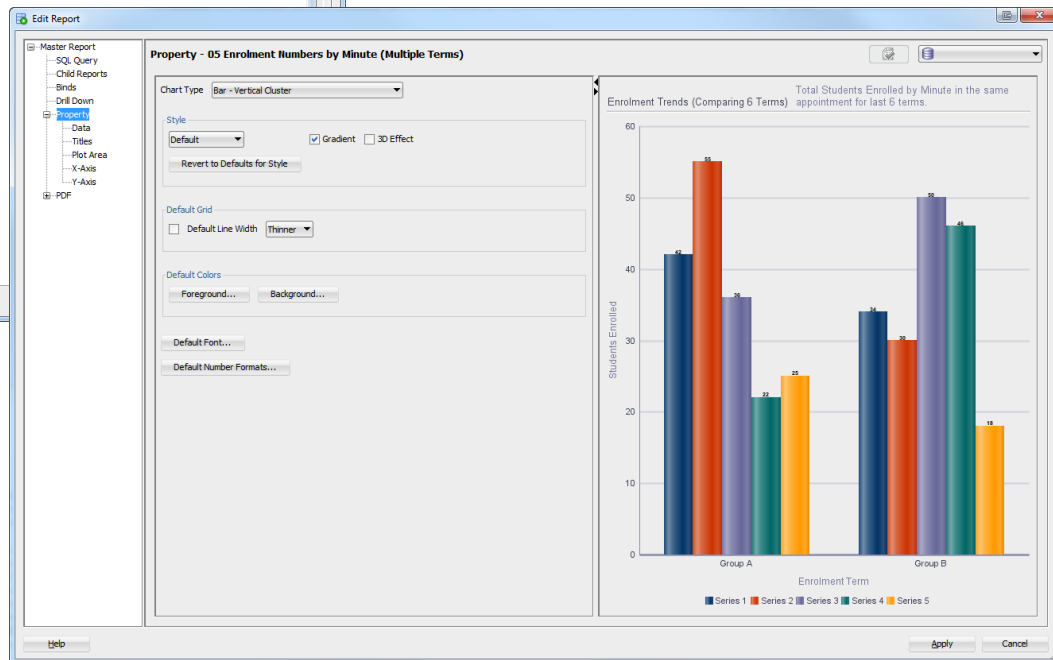
# USER DEFINED REPORTS

SQL Query - 05 Enrolment Numbers by Minute (Multiple Terms)

```

SELECT a.stm,
       b.descr
CASE
  WHEN To_char(To_date(datetime, 'HH24:MI') + 1 / 1440, 'MI') IN ( '01' )
  THEN
    To_char(To_date(datetime, 'HH24:MI') + 1 / 1440, 'MI"st")
  WHEN To_char(To_date(datetime, 'HH24:MI') + 1 / 1440, 'MI') IN ( '02' )
  THEN
    To_char(To_date(datetime, 'HH24:MI') + 1 / 1440, 'MI"nd")
  WHEN To_char(To_date(datetime, 'HH24:MI') + 1 / 1440, 'MI') IN ( '03' )
  THEN
    To_char(To_date(datetime, 'HH24:MI') + 1 / 1440, 'MI"rd")
  ELSE To_char(To_date(datetime, 'HH24:MI') + 1 / 1440, 'MI"ch")
END
|| ' Minute' DATETIME,
trunc(students_enrolled, 0) students_enrolled
FROM (SELECT a.stm,
       To_char(c.dtm_stamp_sec, 'HH24:MI') DATETIME,
       Count (DISTINCT a.emplid) Students_Enrolled
FROM sysdm.ps_pcdnt_caz_term a,
      sysdm.ps_stdtnt_enrl_appt b,
      sysdm.ps_enrl_req_detail c,
      (SELECT stm,
            appointment_nbr,
            To_char(To_char(appt_start_date, 'DD/MM/YYYY'))
            || ' '
            || To_char(appt_start_time, 'HH24:MI'),
            'DD/MM/YYYY HH24:MI') APPT_START
FROM sysdm.ps_apointment_tbl
WHERE stm IN (:STM1, :STM2, :STM3, :STM4, :STM5, :STM6)
and institution = 'GRIF'
and acad_Career= 'UGRD'
AND appointment_nbr <> '0006') i appt

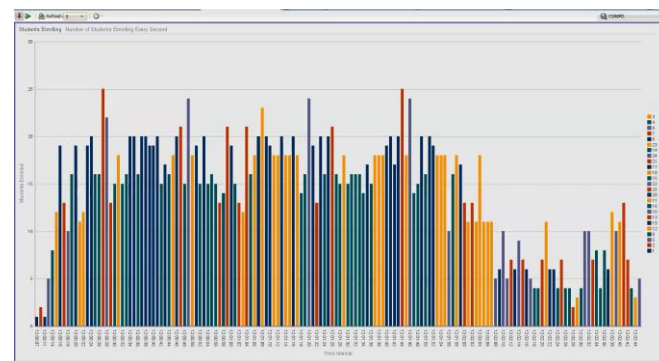
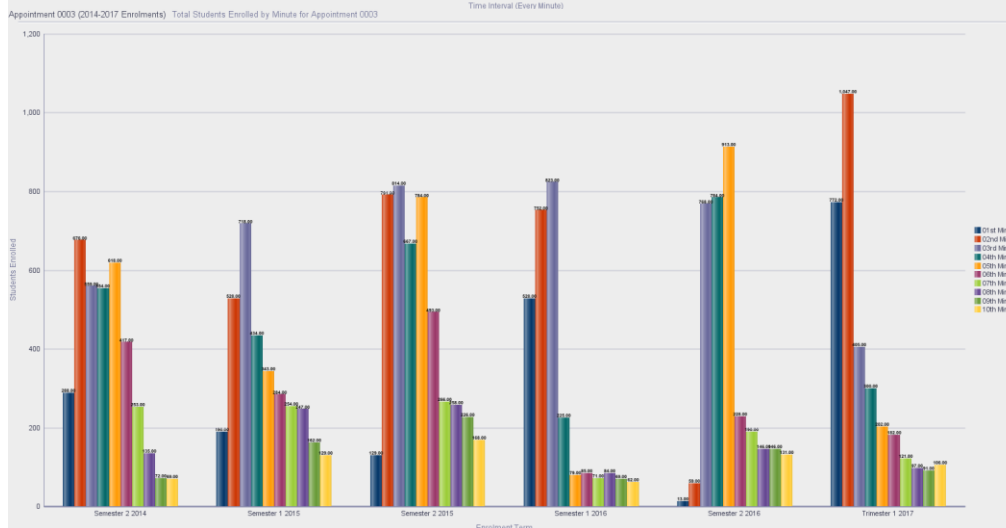
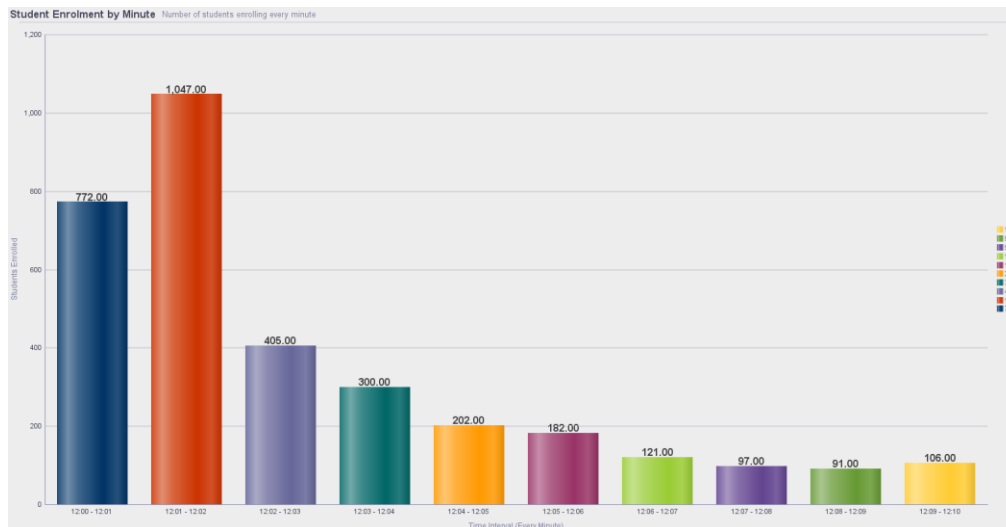
```





# GRIFFITH OPEN ENROLMENT REPORTS

- Monitor Open Enrolment
- Visual Representation of Students enrolling in Real Time
- Understanding Enrolment Trends over Multiple Terms





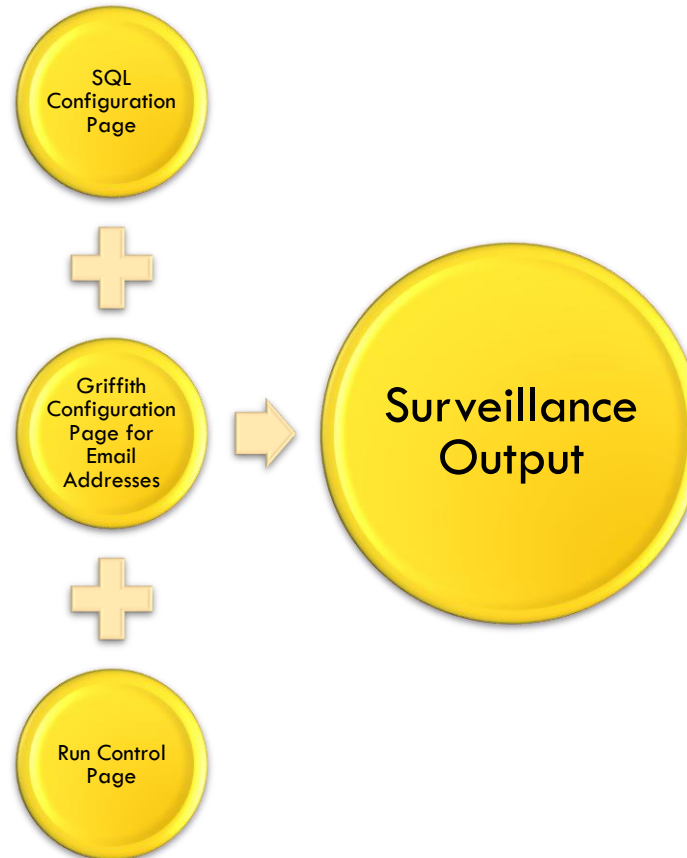
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# SURVEILLANCE APP ENGINE

A custom built application engine to run multiple SQL statements as a batch process.

# SURVEILLANCE APPLICATION ENGINE

Application engine  
to automate  
running of multiple  
SQLs as a batch  
process





# SQL CONFIGURATION PAGE

Surveillance queries

Configuration Type ADU\_PRESENTATION

File Format CSV

Surveillance queries ?

Find | View All First 1 of 1 Last

\*Query Title: Cancelled classes in 3165

Description: Cancelled classes in 3165 Status Active

Comment's

Surveillance SQL: select distinct crse\_id, crse\_offer\_nbr, catalog\_nbr, descr  
From sysadm.ps\_class\_tbl where class\_Stat = 'X'  
and strm = '3165'

Edit SQL

Test SQL

Comma seperated  
Column Headings

COURSE\_ID, COURSE\_OFFER\_NUMBER, CATALOG\_NBR, CLASS\_DESCR

Save Notify

Add Update/Display




# GU CONFIGURATION – EMAIL ADDRESSES

**Configuration**

**SetID:** GRIFF      **Application Code:** GU\_SRVC\_QRY\_ADMIN

**Config**

Find | View All      First ◀ 1 of 1 ▶ Last



**\*Effective Date:** 12/03/2015       **\*Status:** Active ▼       

**\*App. Description:** Surveillance Emails

**Config Data**

Find      First ◀ 1-2 of 2 ▶ Last



1

**\*Field Desc:** Email address  

**\*Config Field Id:** SRVC\_ADMIN







**Field Value:** p.raval@griffith.edu.au

2

**\*Field Desc:** Email address  

**\*Config Field Id:** SRVC\_ADMIN

**Field Value:** p.raval@griffith.edu.au

 Save     Return to Search     Add     Update/Display     Include History     Correct History

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# RUN CONTROL PAGE

Run Surveillance Query

Run Control ID: 2641953

Report Manager

Process Monitor

Run

Select the Output File Format ?

\*File Format

CSV ▼

Email List

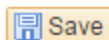
GU\_SRVC\_QRY\_ADMIN



Select the Configuration Type

\*Configuration Type

ADU\_PRESENTATION



Save



Return to Search



Previous in List



Next in List



Notify



Refresh



Add



Update/Display

# OUTPUT

## Surveillance Query Output

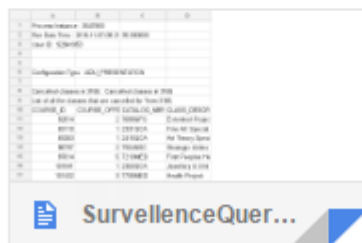
Inbox x



bss-student-team@griffith.edu.au

to p.raval

Surveillance Query Output is attached



60	Classes to be Cancelled in 3165 : To Be Cancelled Classes 3165			
61	Lists all the classes that are to be cancelled for Semester 2 2016			
62	COURSE_ID	OFFER_NUMBER	CATALOG_NUMBER	DESCRIPTION
63	3205		1 3205MED	Healthcare Systems
64	80346		3 3215HSL	Hotel Service Operations Mgt
65	80423		1 7209HSL	Tourism Management
66	81140		3 1081LHS	Elementary Spanish II
67	81556		2 3001EHR	Negotiation
68	82769		1 2006GIR	Rhetoric, Spin and the Media
69	83088		1 2514QCA	Concept Visualisation
70	86229		1 3093LHS	Italy through Theatre & Cinema
71	87462		1 1002PSY	Intro Individual&Social Psych
72	88793		1 2246QCM	Advanced Aural Studies
73	88904		2 4047ENV	Public Involv & Community Dev
74	89650		1 2010HSV	Working in Communities
75	89650		2 2010HSV	Working in Communities
76	90177		1 7617GFS	Screen Directing
77	100161		1 7107MKT	Franchising
78	100732		1 2545QCA	Creative Thinking
79	100818		1 5326LAW	Law, Culture and Anthropology
80	101106		1 4302EDN	The Collegial Classroom
81	101246		1 2548QCM	North Indian Music
82	101388		1 2154QCM	Keyboard Accomp Studies 2
83	101420		1 3820QCA	Indiv Proj 2 - Photo Art Prac
84	101741		1 3708GFS	Sound Design 2
85	101746		1 1704GFS	Cinematography
86	101848		2 1005ICT	Object Oriented Programming
87	101984		1 2511ICT	Business Analysis
88	102100		1 1209QCA	Mapping the Postmodern
89	103437		2 7302ICT	Enterprise Architecture App.
90	103843		1 3504QCA	Design Teams, Probs&Processes
91	103960		1 3101IBA	Climate and Sus Growth in Asia
92	104328		3 1254EDN	Genre, Text and Lang
93	104347		1 3291EDN	PEL2: Learning & Teach Sec Sch
94	104623		2 1028HSV	Equity and Diversity
95	104827		2 6009CCJ	Contemp Perspectives on Crime

SurveillanceQuery\_OutPut\_3547993



# CONCLUDING THOUGHTS

ANY QUESTIONS?

# PRESENTERS

## Parth Raval

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## Clinton Lamont

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Griffith University

[clinton.lamont@griffith.edu.au](mailto:clinton.lamont@griffith.edu.au)

**ALL ALLIANCE PRESENTATIONS WILL BE AVAILABLE FOR  
DOWNLOAD FROM THE CONFERENCE SITE**







# THANK YOU!



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