Current and Future Institutional Research Reporting Resources

CUNY INSTITUTIONAL RESEARCH AND CUNY ASSESSMENT COUNCIL JOINT RETREAT

JUNE 14, 2013

Speakers

- Ariel Cohen (OIRA) - Overview
- Judith Ullman (CIS) - PS Query, I-806/ADW, CEMLI Search Tool
- Piotr Kocik (Hostos) – I-805 Extract
- Ariel Cohen (OIRA) – I-184a Extract, CBIL, IRDB
- Mark Casazza (OIRA) – Future Reporting Resources

Overview

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ARIEL COHEN

MANAGER OF STUDENT INFORMATION

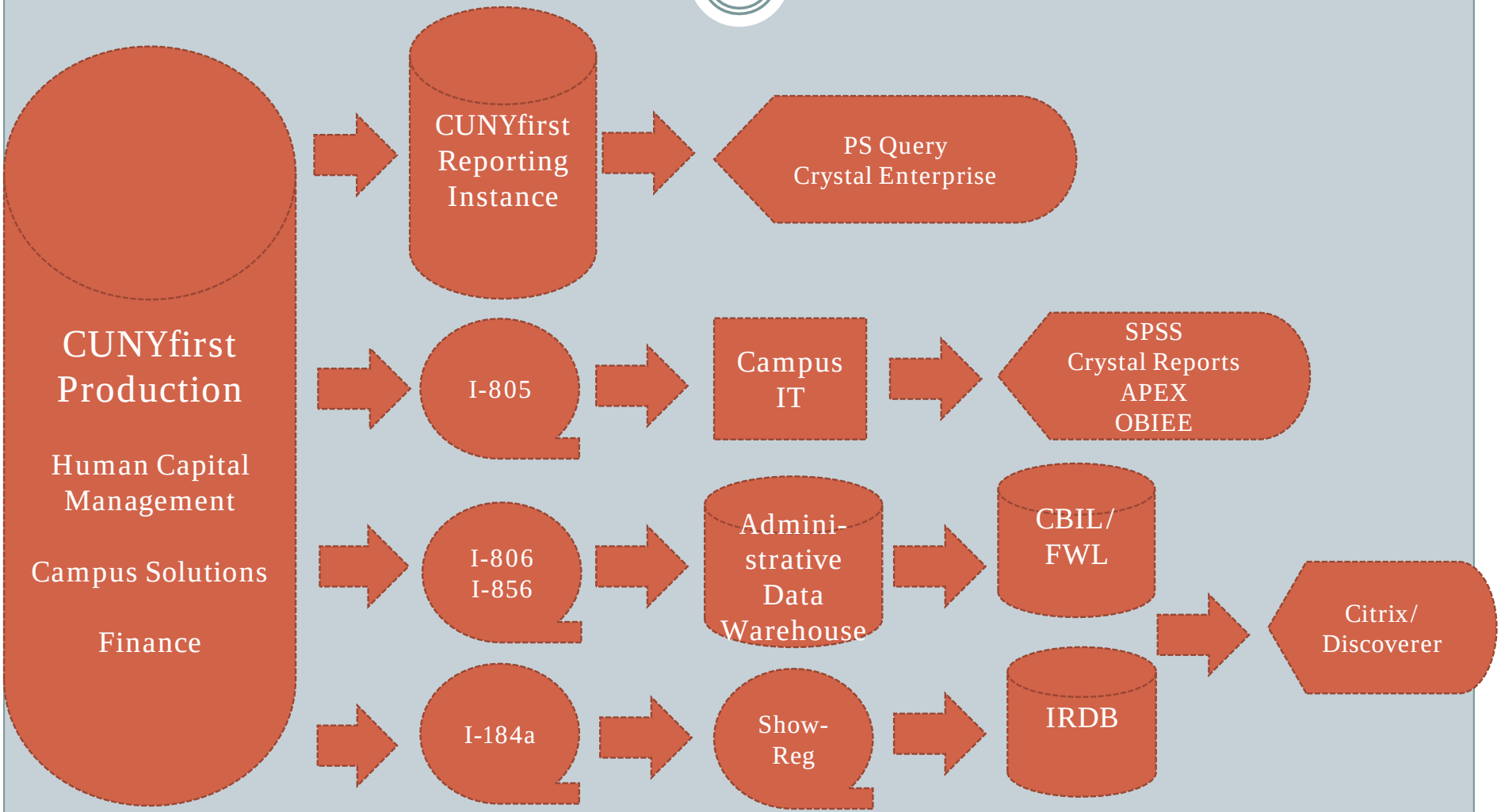
OFFICE OF INSTITUTIONAL RESEARCH & ANALYSIS

CUNY CENTRAL OFFICE

Overview of CUNY Reporting Resources

Data Sources	Timelines	Available data	Level of Transformation	Platforms/ Tools for Access
CUNYfirst Reporting Instance	Daily (1-day lag for Reporting Instance)	All HCM, CS, and Finance data are available.	Low: Effective dating, predefined joins, and canned queries	PS Query
I-806/I-856/ ADW	Daily	138 CF tables, Limited set of HCM and CS data	None	SQL and Crystal Enterprise
I-805 extract	Daily	Enrollment and testing data	Low	SPSS, Crystal Reports, APEX, and OBIEE
I-184a extract	On demand	Show-Registration, Performance, and Graduation data	Moderate: Effective dating and 19 computed fields	SPSS
CBIL	Daily (1 ½-day lag)	Five semesters of admission and enrollment data; Faculty Workload	Moderate: Computed fields similar to those in IRDB History Facts	Oracle Discoverer
IRDB	Term-based census data	1990 to present	High: Optimized for reporting trends and outcomes	Oracle Discoverer
Future reporting resources	POC: Summer 2013			Oracle Data Integrator, OBIEE

CUNYfirst Data Distribution



Reporting Instances
PS Query

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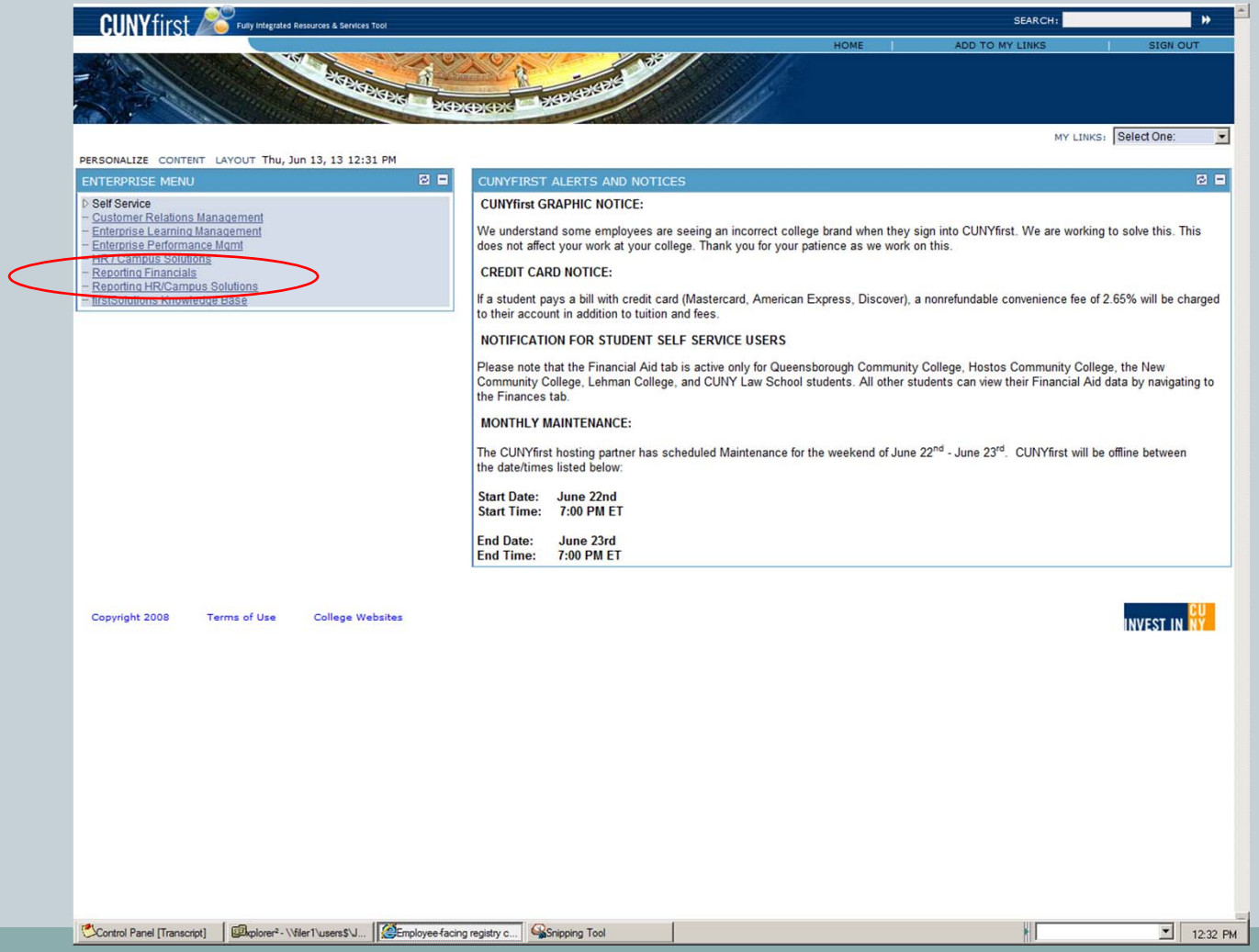
JUDITH ULLMAN

APPLICATIONS & TECHNICAL SUPPORT MANAGER

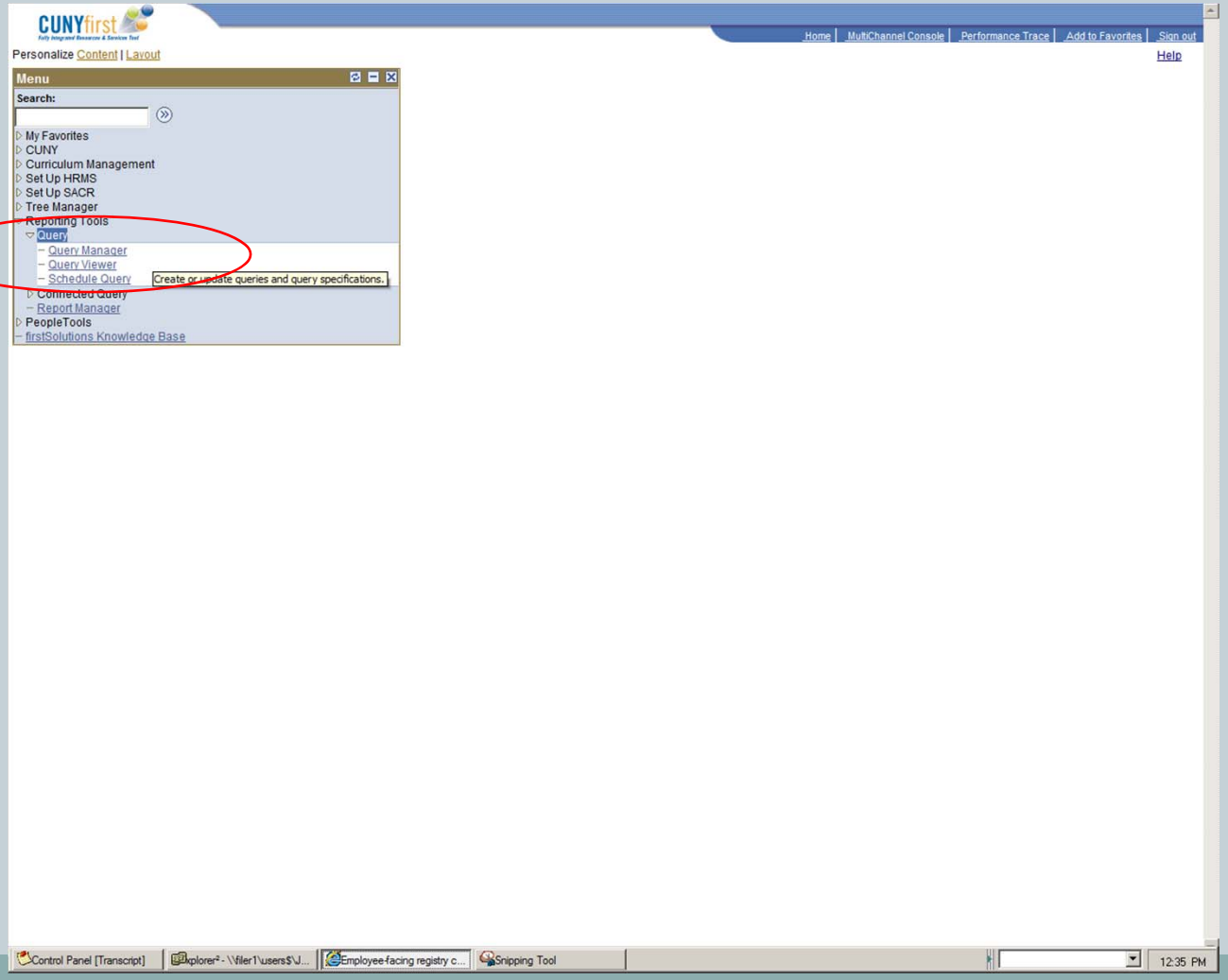
COMPUTING & INFORMATION SERVICES

CUNY CENTRAL OFFICE

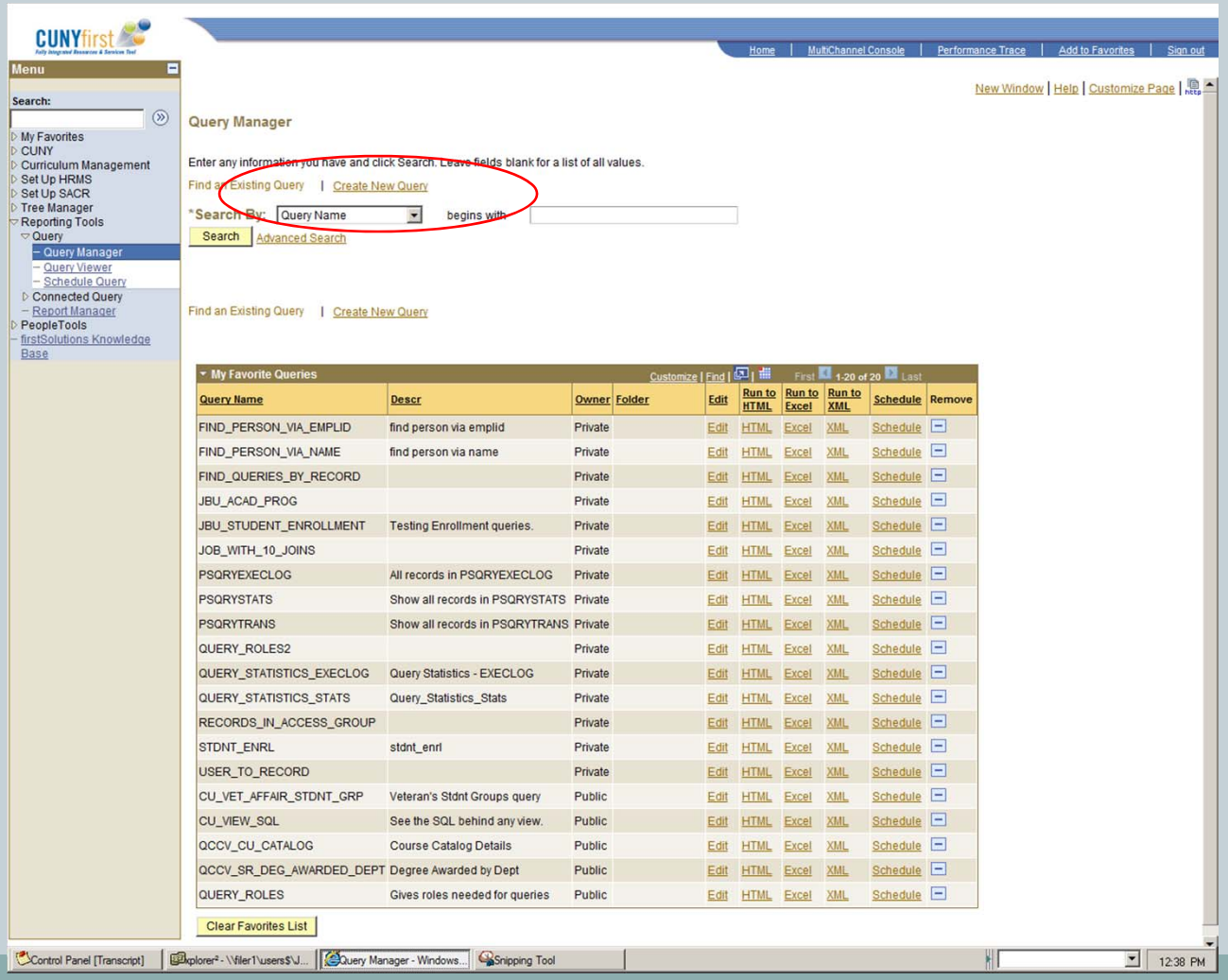
Log in to CUNYfirst



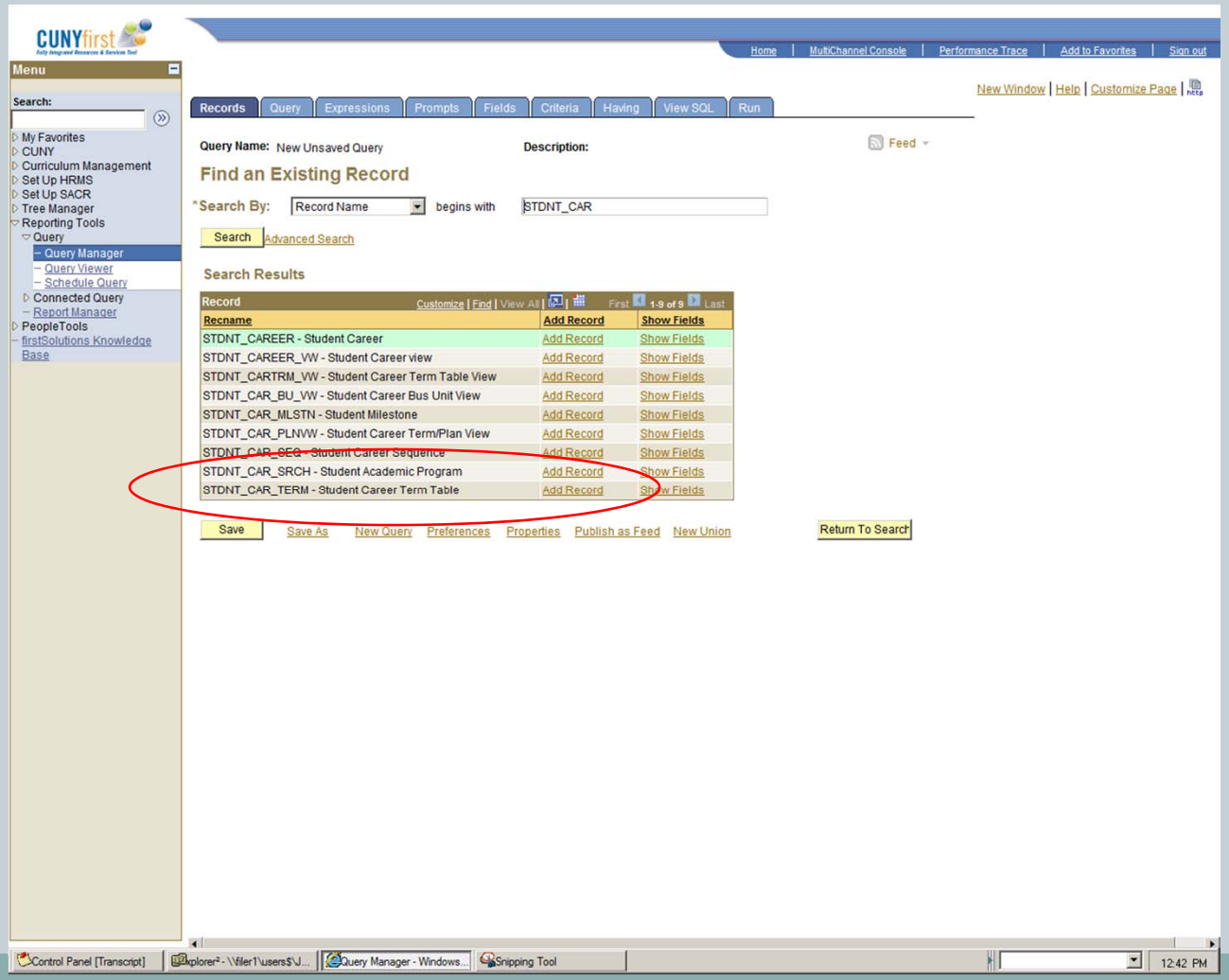
Navigate to Query Manager



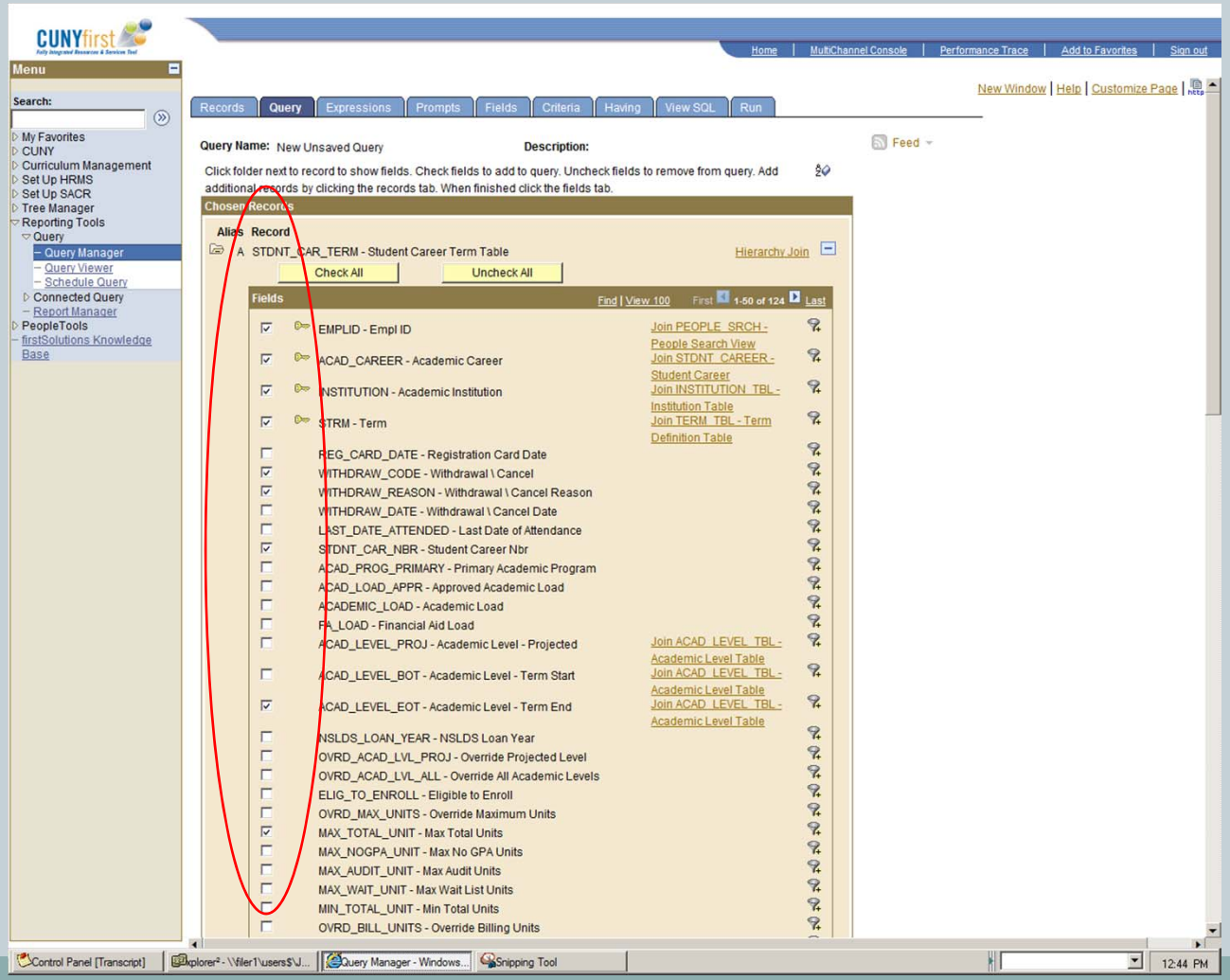
Create New Query



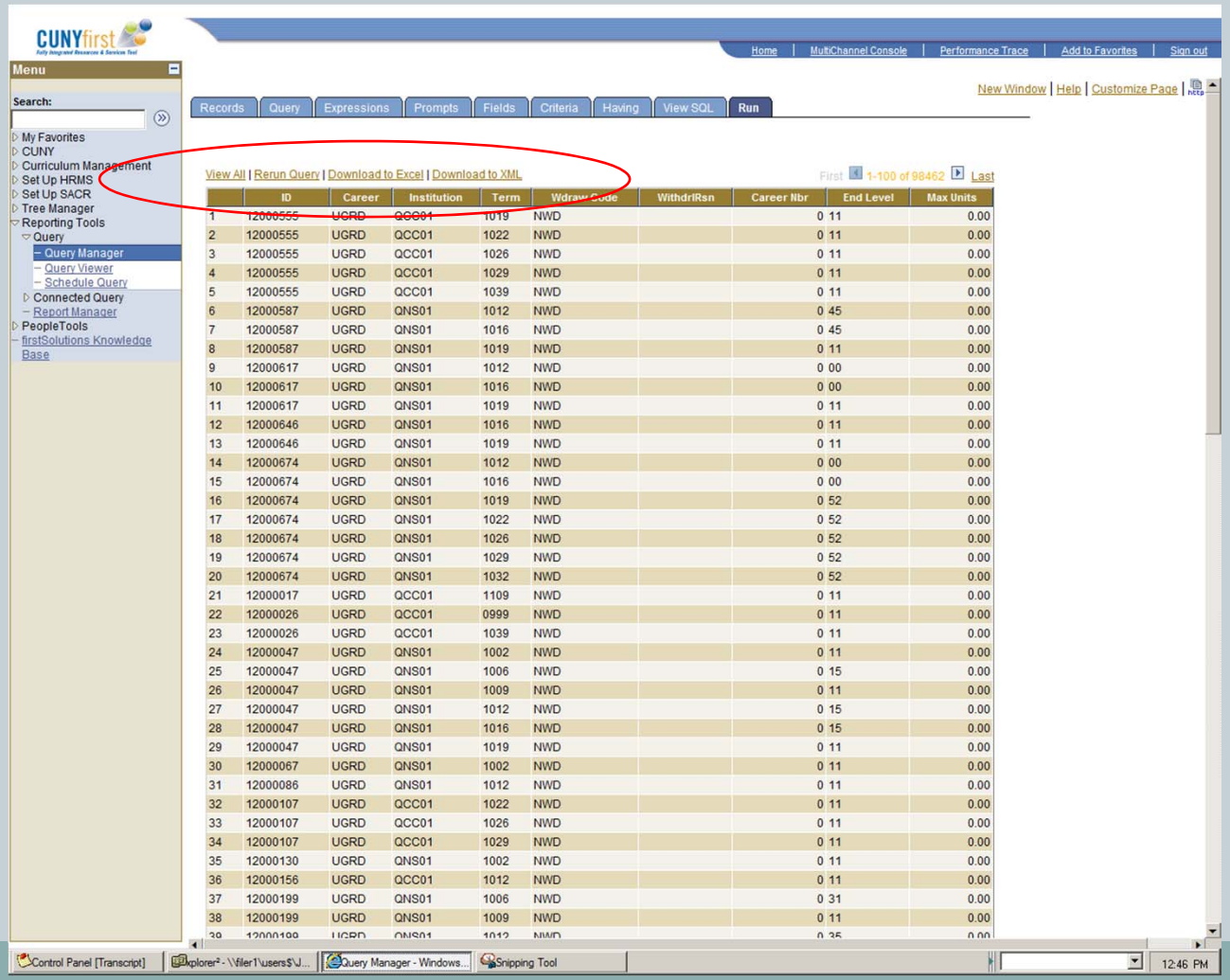
Choose Records



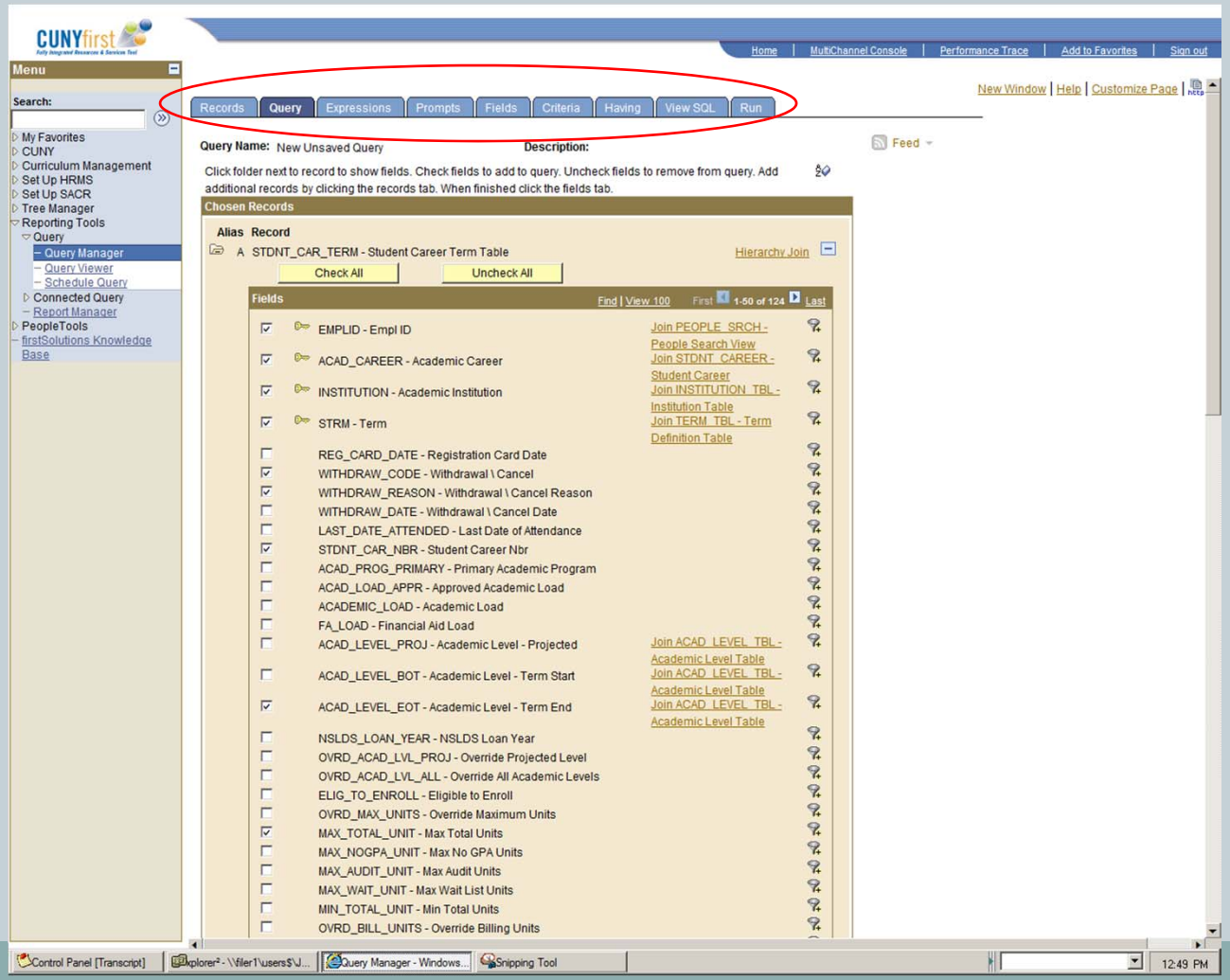
Choose Columns



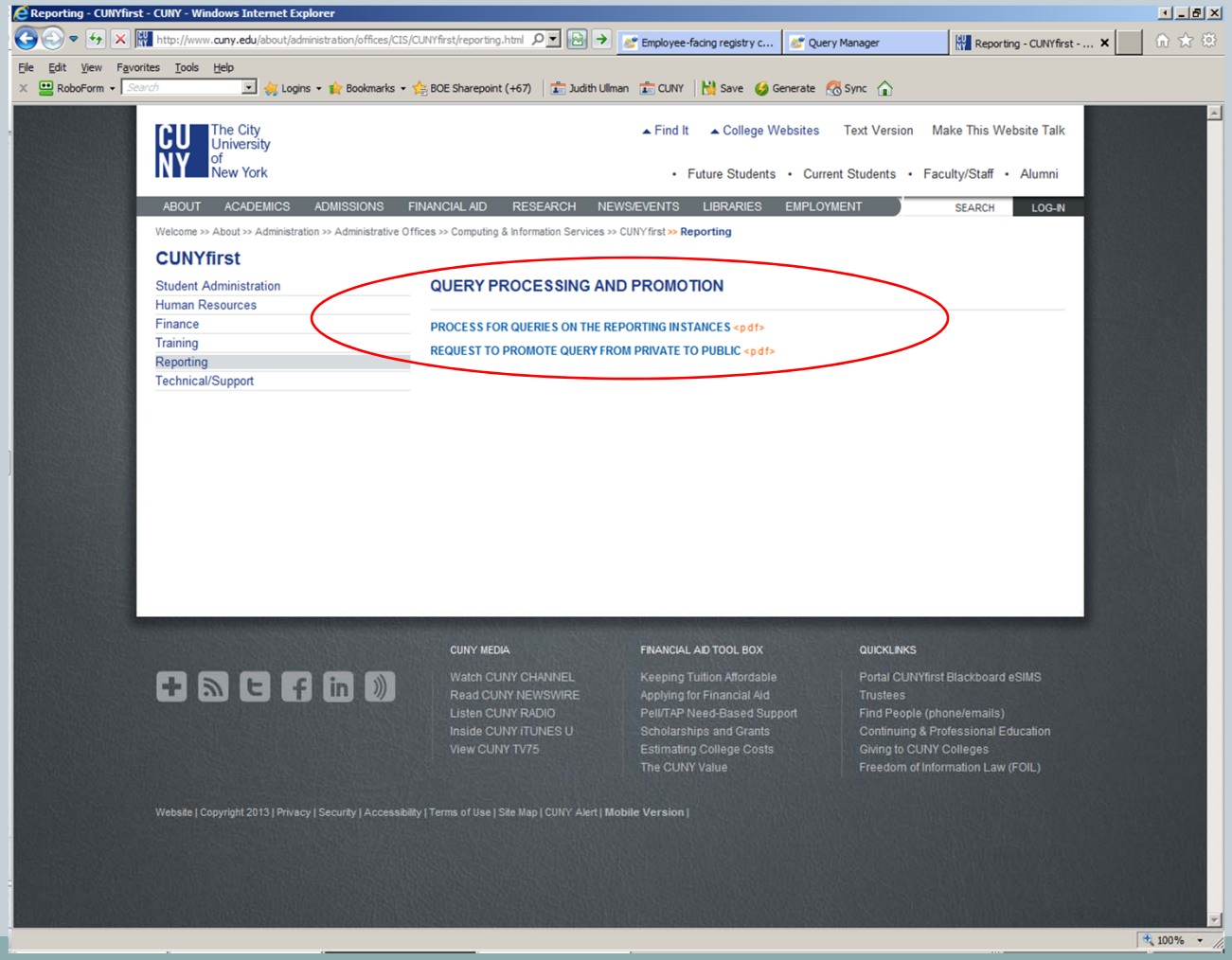
Run – Download if desired



Join records, add calculations, provide prompts, filter records, group, sort, and more



http://www.cuny.edu/about/administration/offices/CIS/CUNYfirst/reporting.html



Reporting Instances Summary

- Advantage
  - All CUNYfirst FIN, HCM, and CS data are available
- Disadvantages
  - Data are not refreshed until early morning of the following day.
  - PS Query tool only provides columnar output.
  - Sharing queries is limited.

I-806/ADW

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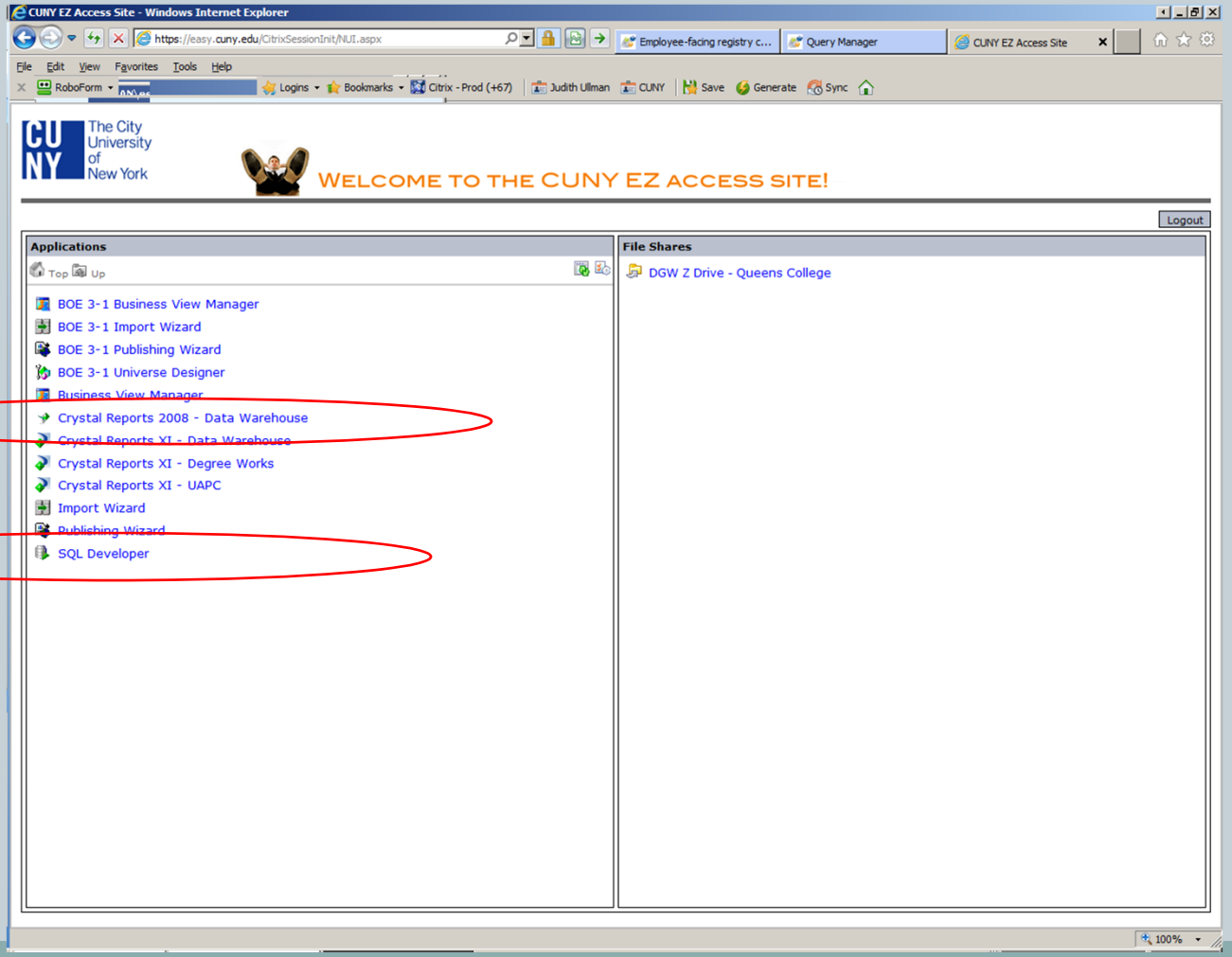
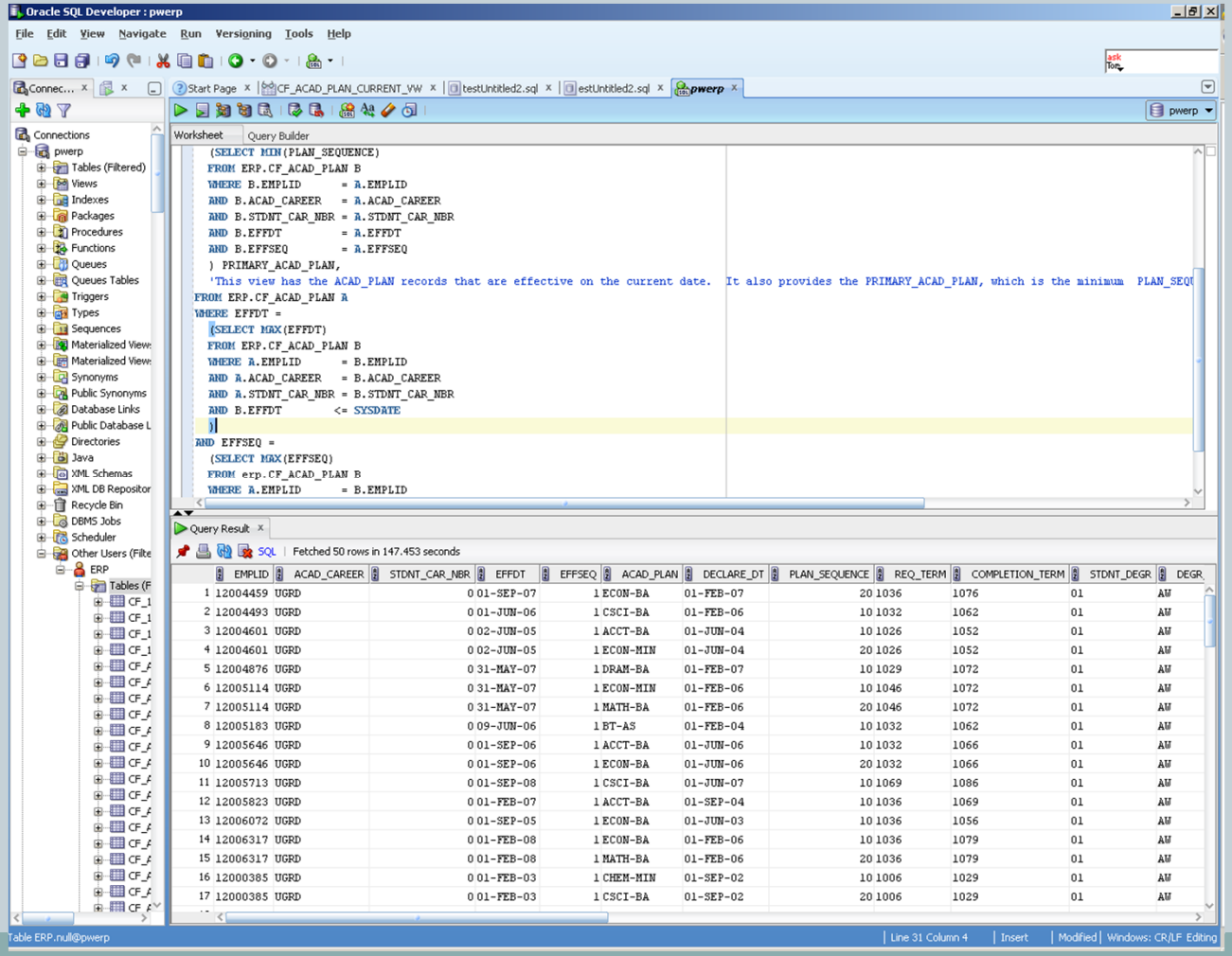
CUNY CENTRAL OFFICE

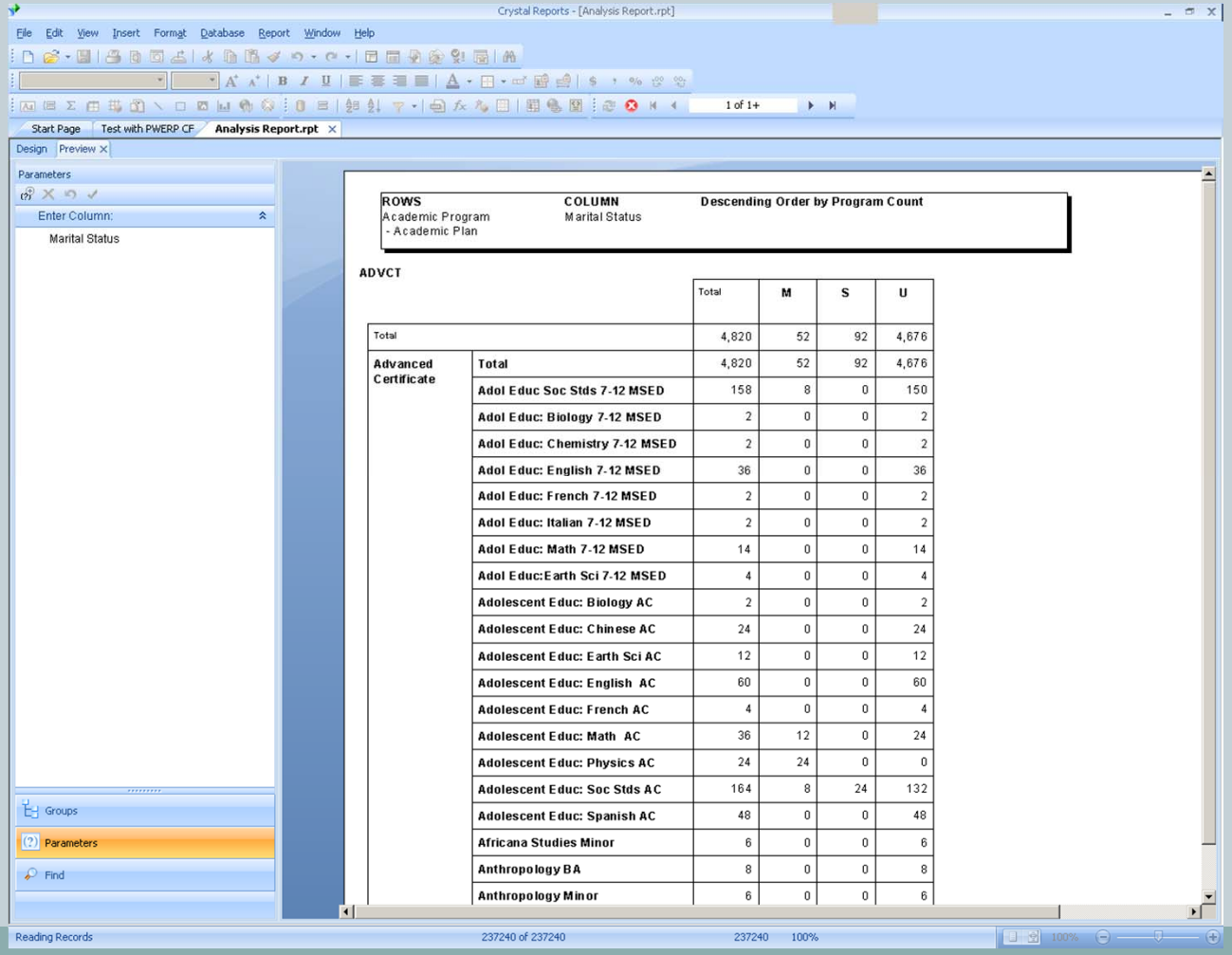
Login to Citrix System
https://easy.cuny.edu



Write any SQL; Get columnar results

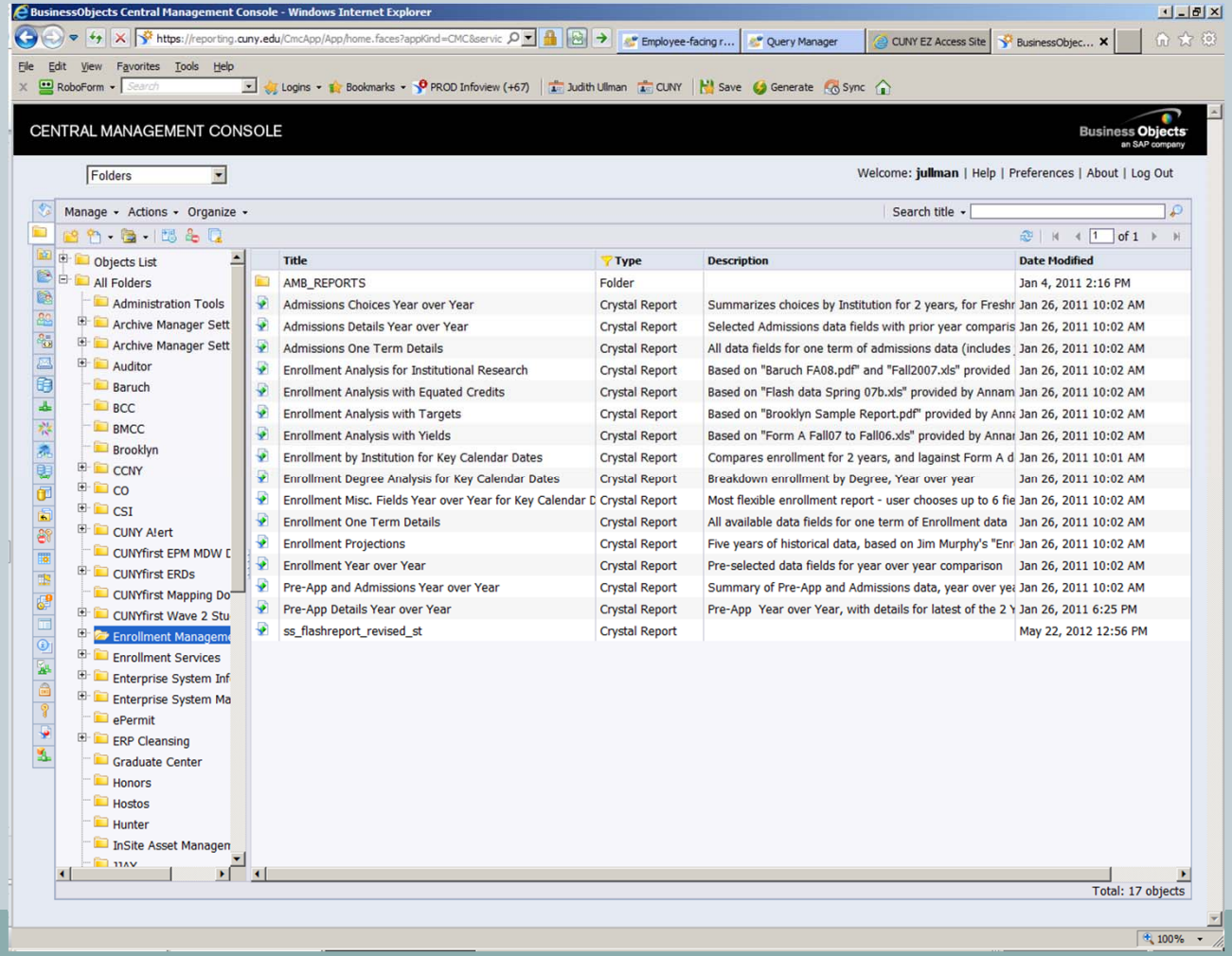


Design any format with Crystal Reports

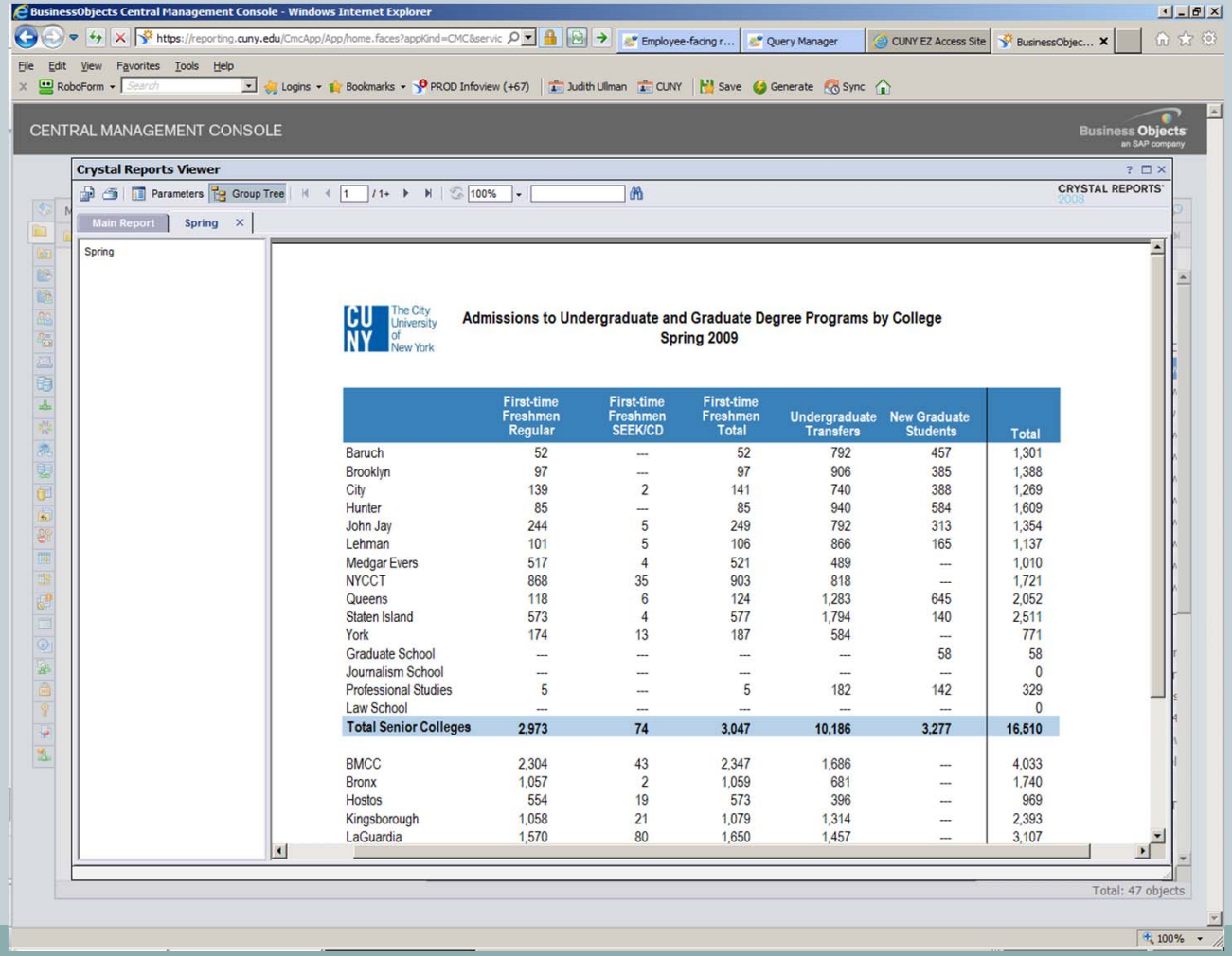


		Total	M	S	U
Total		4,820	52	92	4,676
Advanced Certificate	Total	4,820	52	92	4,676
	Adol Educ Soc Stds 7-12 MSED	158	8	0	150
	Adol Educ: Biology 7-12 MSED	2	0	0	2
	Adol Educ: Chemistry 7-12 MSED	2	0	0	2
	Adol Educ: English 7-12 MSED	36	0	0	36
	Adol Educ: French 7-12 MSED	2	0	0	2
	Adol Educ: Italian 7-12 MSED	2	0	0	2
	Adol Educ: Math 7-12 MSED	14	0	0	14
	Adol Educ:Earth Sci 7-12 MSED	4	0	0	4
	Adolescent Educ: Biology AC	2	0	0	2
	Adolescent Educ: Chinese AC	24	0	0	24
	Adolescent Educ: Earth Sci AC	12	0	0	12
	Adolescent Educ: English AC	60	0	0	60
	Adolescent Educ: French AC	4	0	0	4
	Adolescent Educ: Math AC	36	12	0	24
	Adolescent Educ: Physics AC	24	24	0	0
	Adolescent Educ: Soc Stds AC	164	8	24	132
	Adolescent Educ: Spanish AC	48	0	0	48
	Africana Studies Minor	6	0	0	6
	Anthropology BA	8	0	0	8
	Anthropology Minor	6	0	0	6

Schedule and share Crystal Reports securely via the Enterprise Reporting System



Crystal Reports/SQL Developer can also work with the IRDB



	First-time Freshmen Regular	First-time Freshmen SEEK/CD	First-time Freshmen Total	Undergraduate Transfers	New Graduate Students	Total
Baruch	52	---	52	792	457	1,301
Brooklyn	97	---	97	906	385	1,388
City	139	2	141	740	388	1,269
Hunter	85	---	85	940	584	1,609
John Jay	244	5	249	792	313	1,354
Lehman	101	5	106	866	165	1,137
Medgar Evers	517	4	521	489	---	1,010
NYCCT	868	35	903	818	---	1,721
Queens	118	6	124	1,283	645	2,052
Staten Island	573	4	577	1,794	140	2,511
York	174	13	187	584	---	771
Graduate School	---	---	---	---	58	58
Journalism School	---	---	---	---	---	0
Professional Studies	5	---	5	182	142	329
Law School	---	---	---	---	---	0
Total Senior Colleges	**2,973**	**74**	**3,047**	**10,186**	**3,277**	**16,510**
BMCC	2,304	43	2,347	1,686	---	4,033
Bronx	1,057	2	1,059	681	---	1,740
Hostos	554	19	573	396	---	969
Kingsborough	1,058	21	1,079	1,314	---	2,393
LaGuardia	1,570	80	1,650	1,457	---	3,107

I-806/ADW Summary

- Advantage
  - SQL Developer and Crystal Reports are full-featured, flexible tools
  - Reports can easily be secured, scheduled, and shared via the Enterprise Reporting System
- Disadvantages
  - Core, but limited, data are available
  - Data are one day old

CEMLI Search Tool

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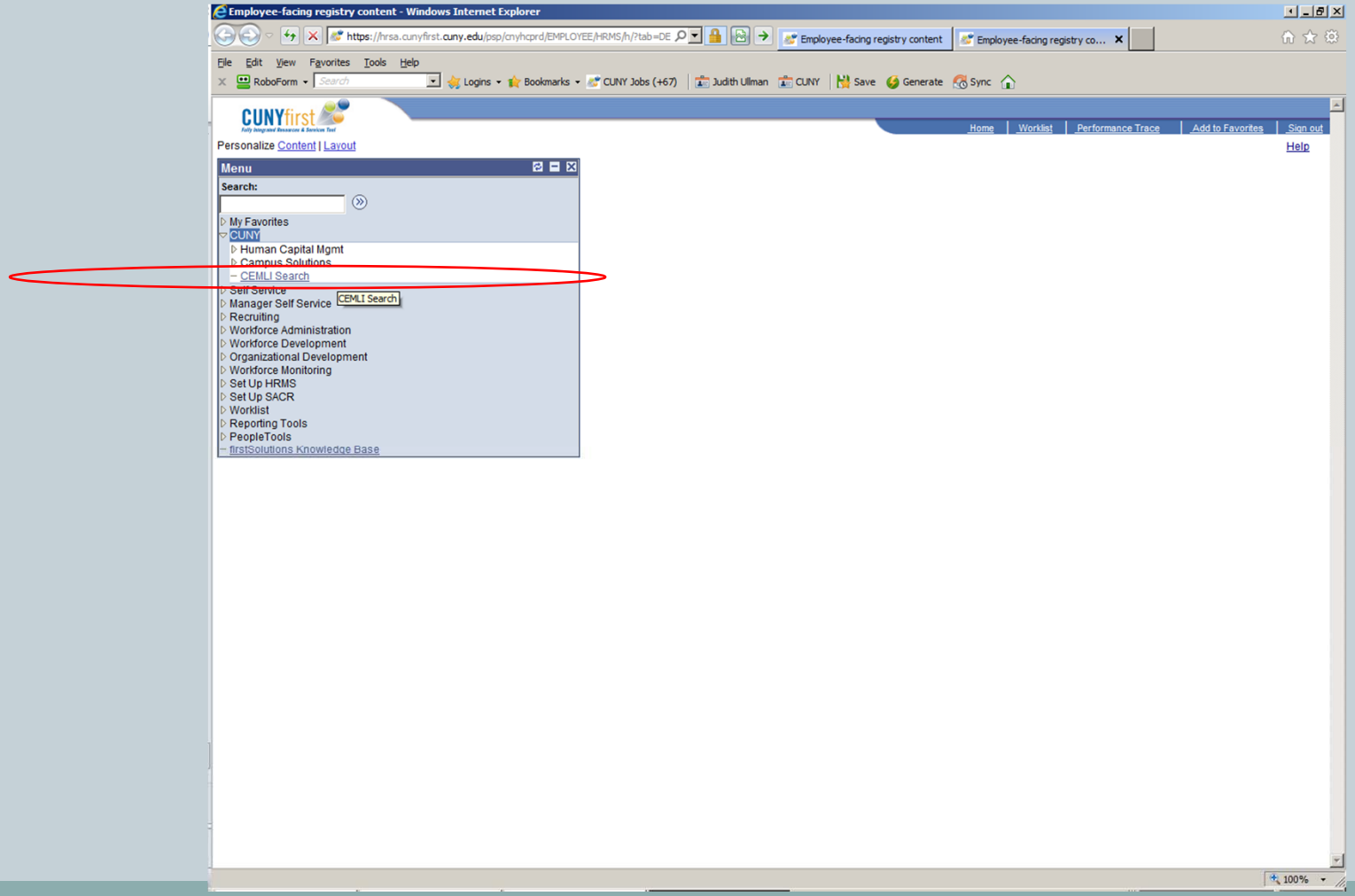
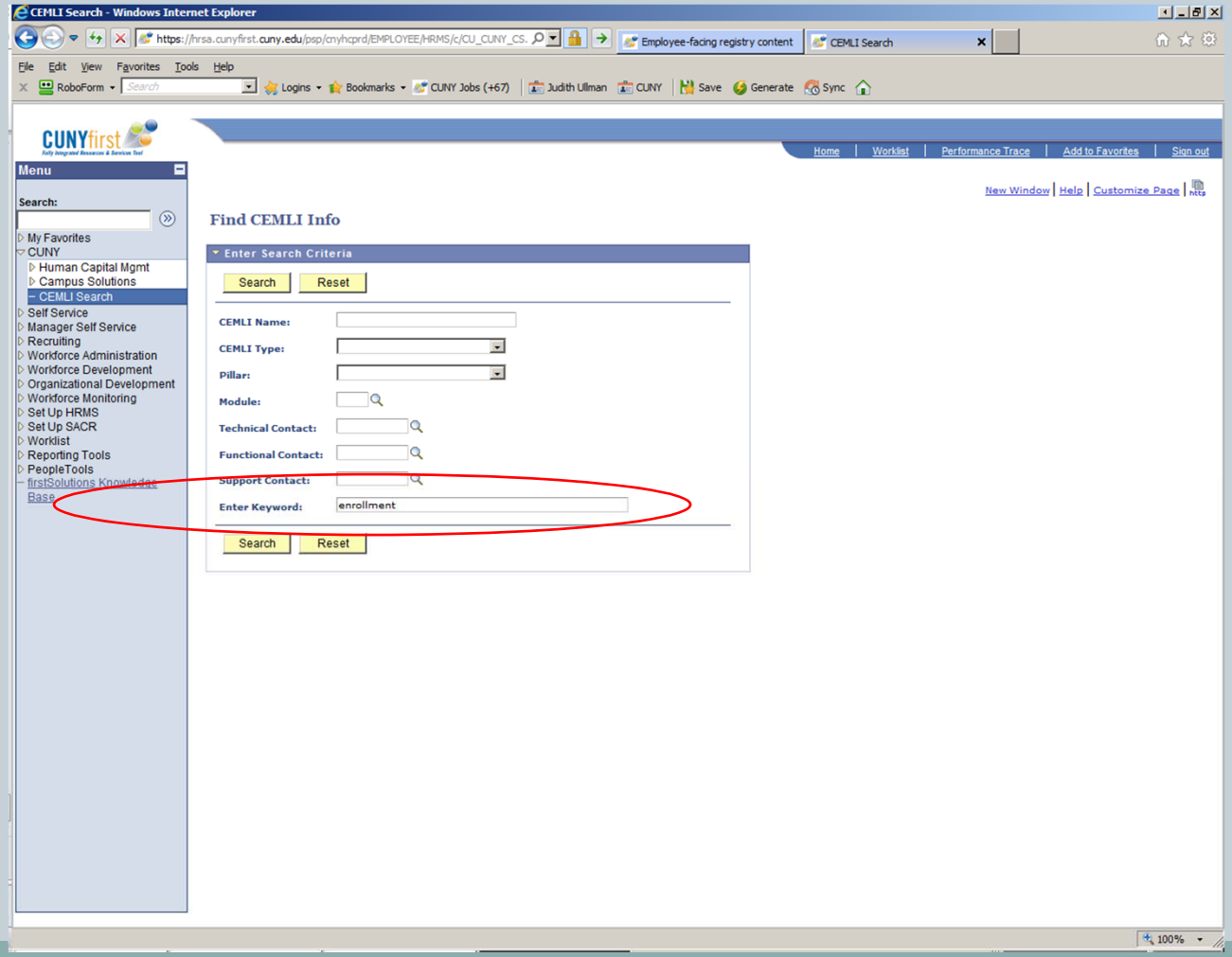
COMPUTING & INFORMATION SERVICES

CUNY CENTRAL OFFICE

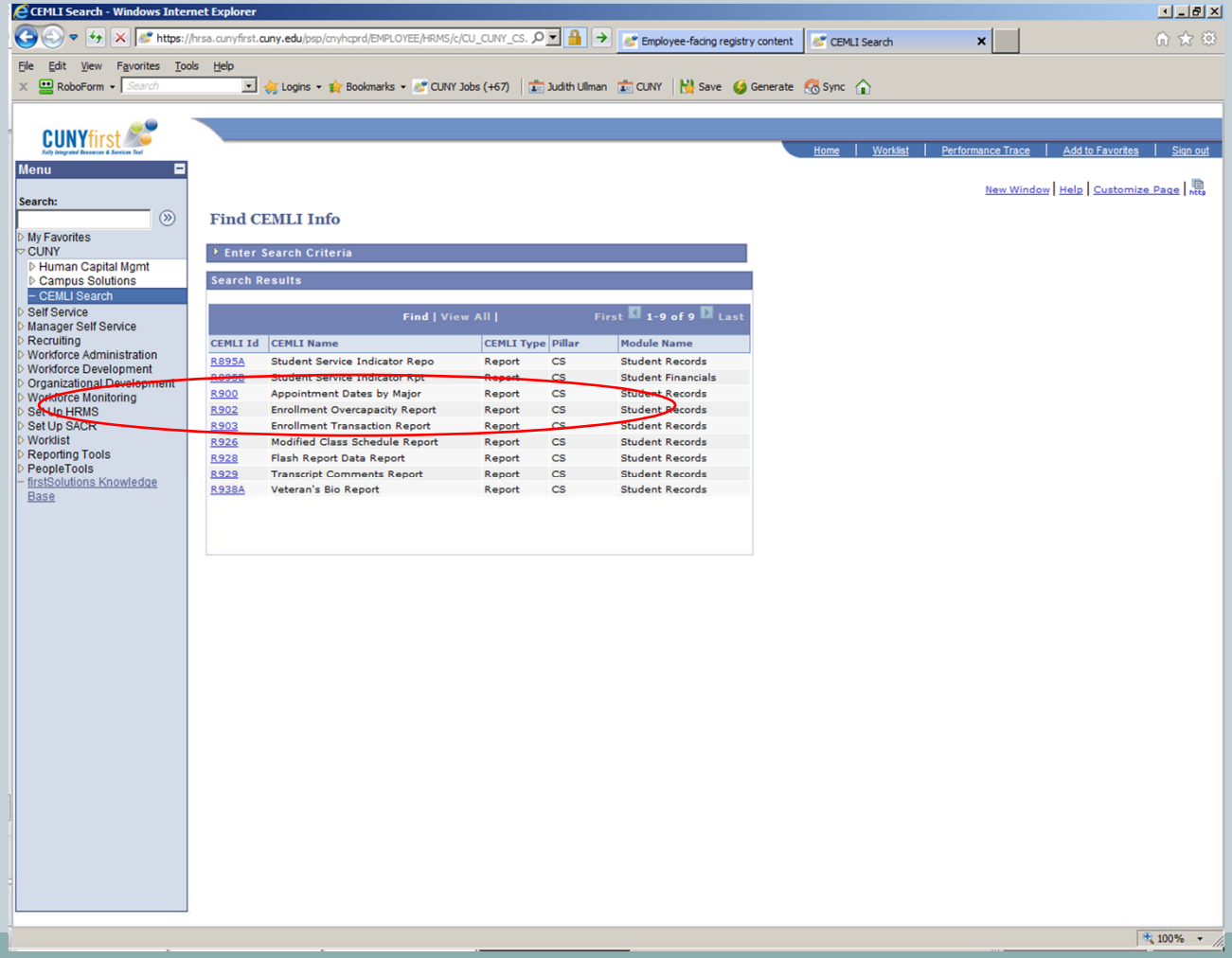
Available from all CUNYfirst instances



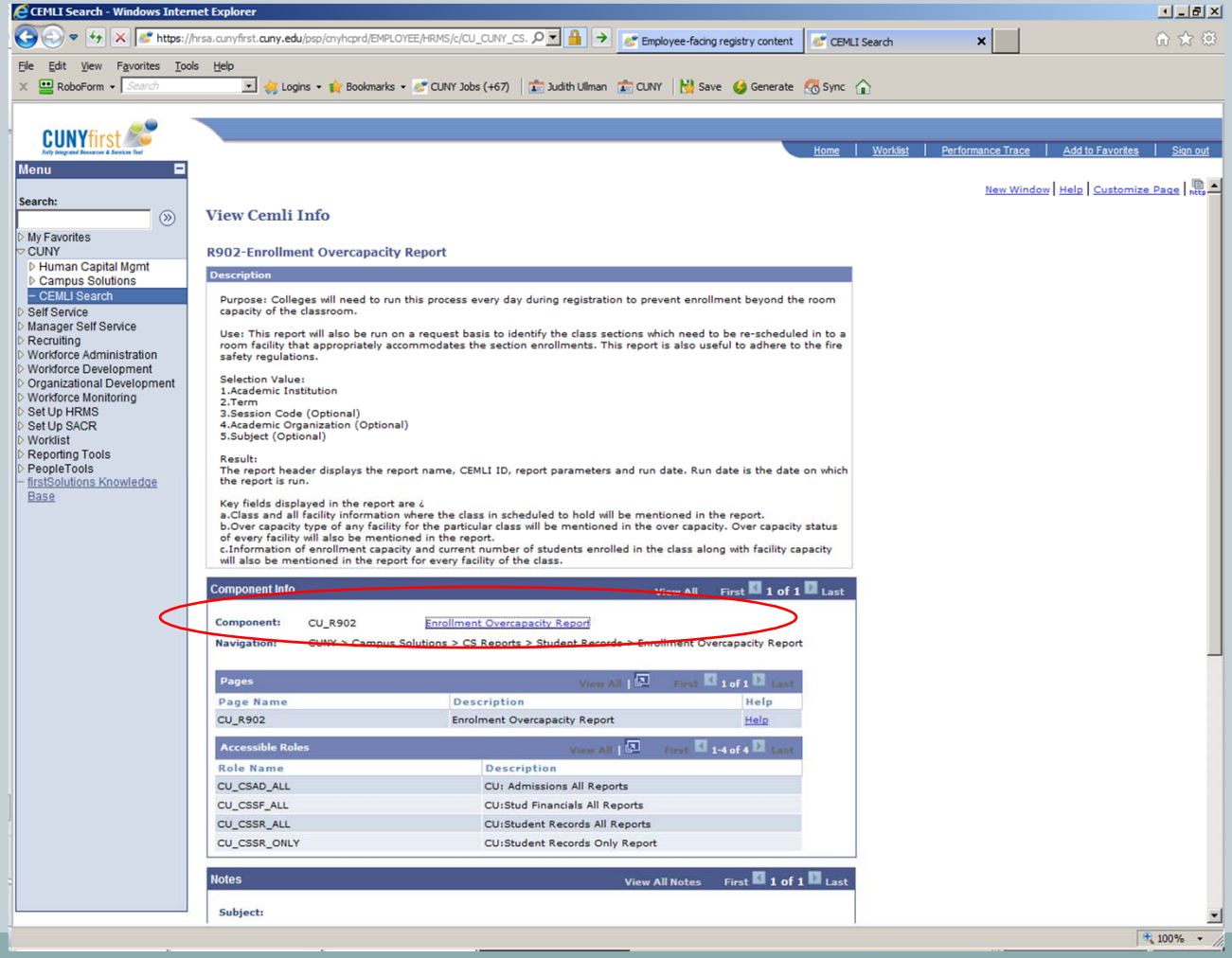
Search for reports and queries



Choose report or query



View information and run



CEMLI Search Tool Summary

- Advantages
  - One-stop shop for reports and queries
  - Search capabilities
  - Provides access information
- Disadvantage
  - Getting populated slowly

I-805 Extract

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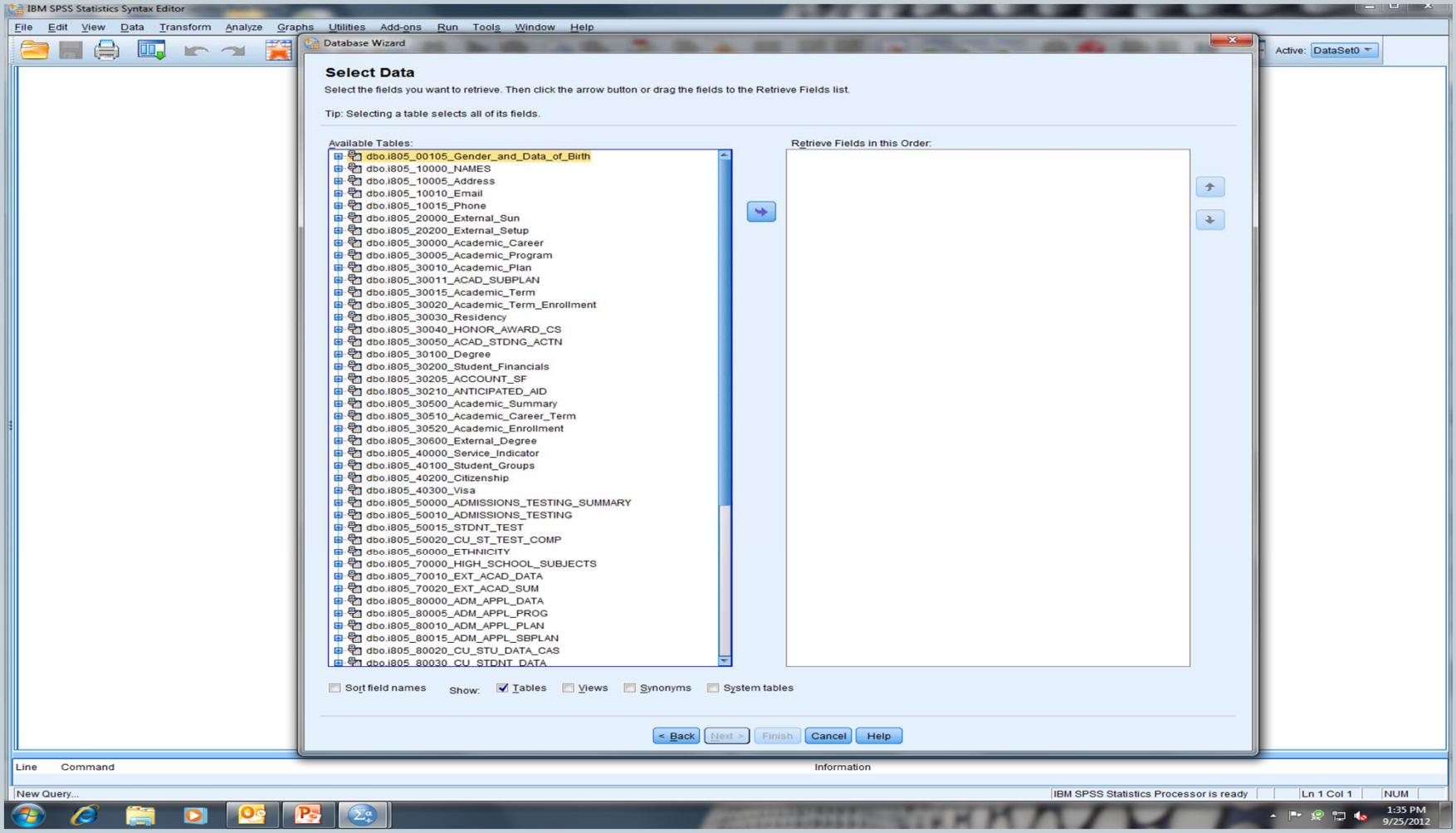
PIOTR KOCIK

INSTITUTIONAL RESEARCH AND ASSESSMENT MANAGER

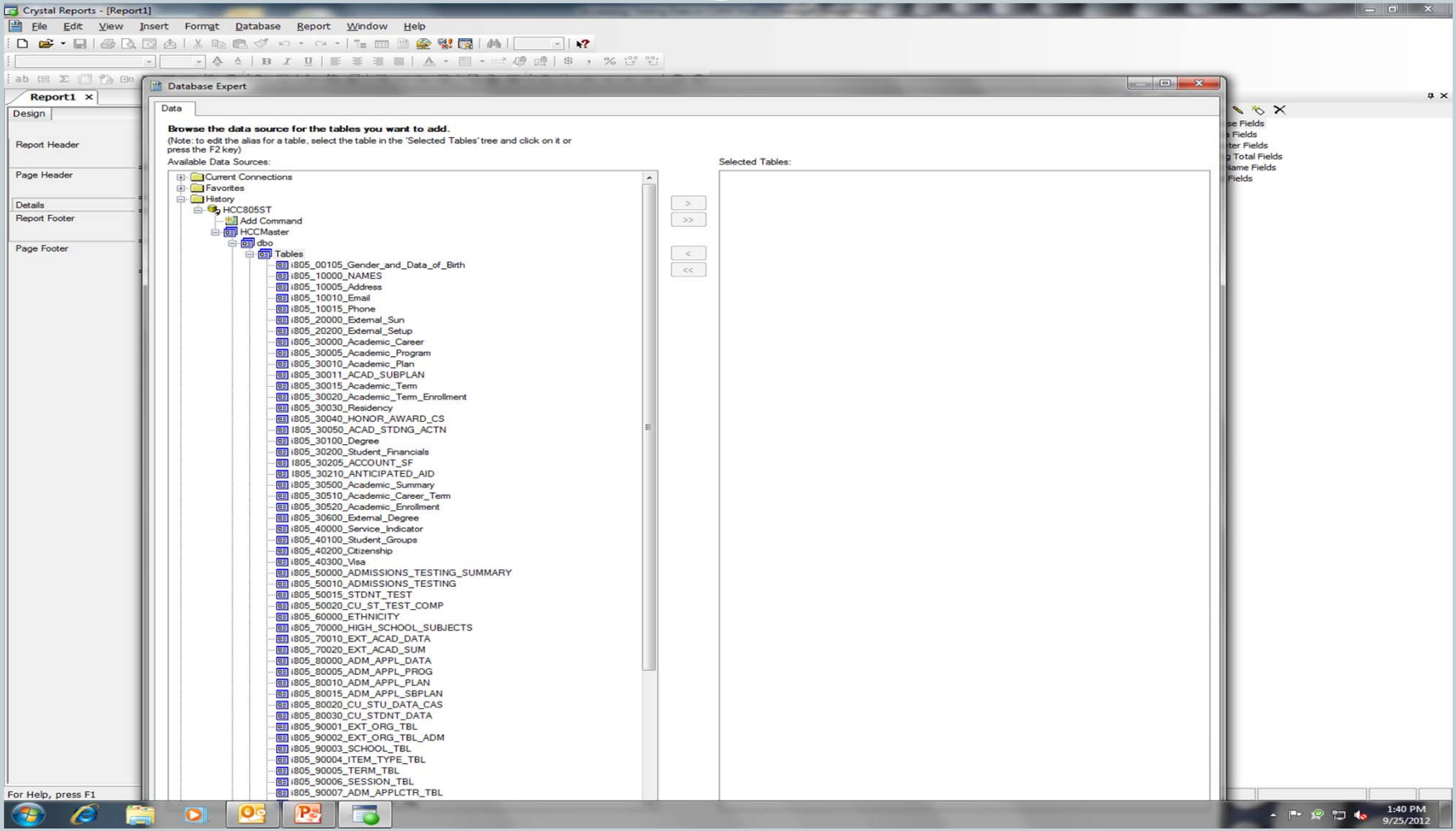
OFFICE OF INSTITUTIONAL RESEARCH AND STUDENT ASSESSMENT

HOSTOS COMMUNITY COLLEGE

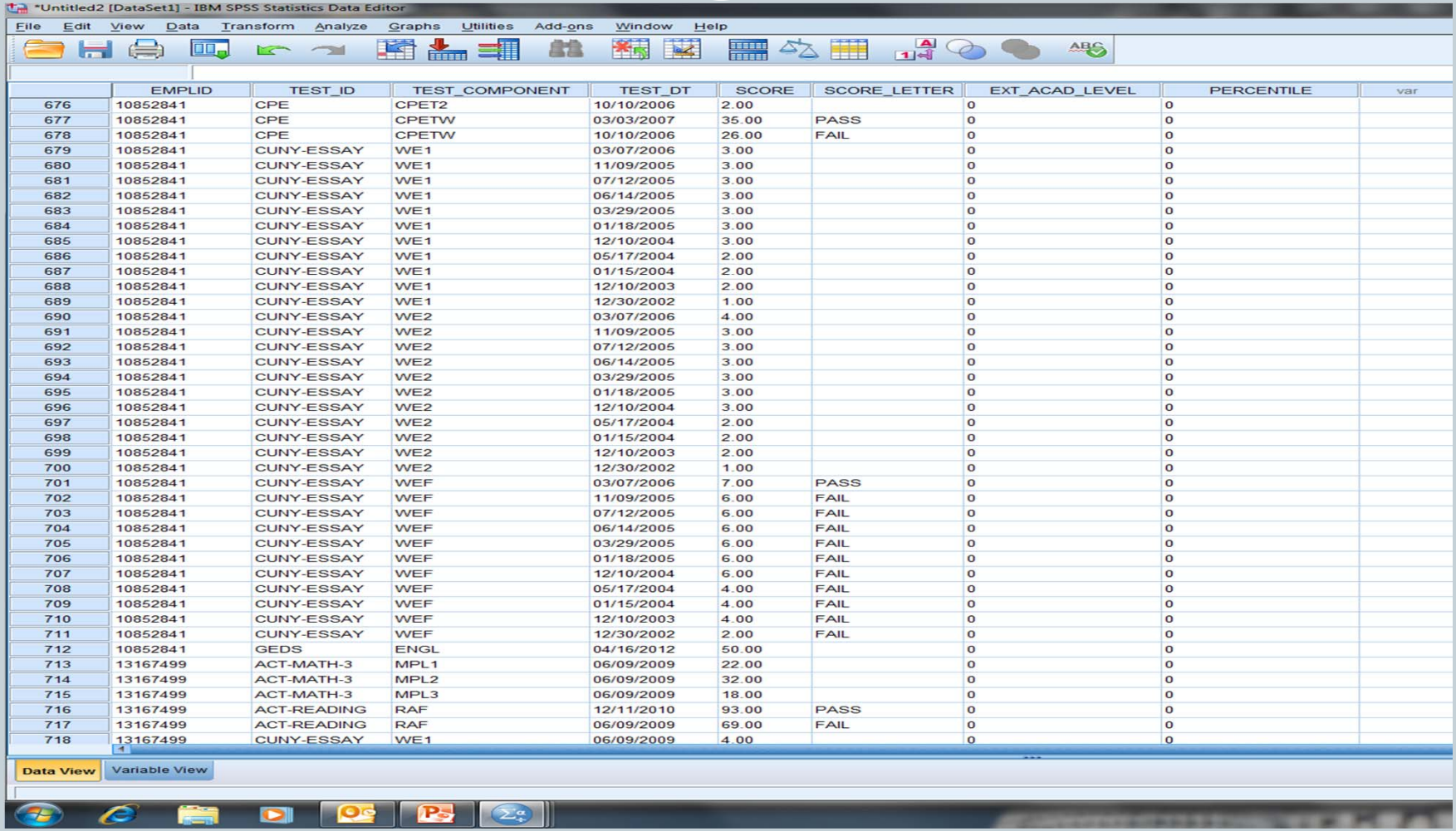
I-805 in SPSS


IBM SPSS Statistics Syntax Editor
File Edit View Data Transform Analyze Graphs Utilities Add-ons Run Tools Window Help
Database Wizard
Active: DataSet0
Select Data
Select the fields you want to retrieve. Then click the arrow button or drag the fields to the Retrieve Fields list.
Tip: Selecting a table selects all of its fields.
Available Tables:
dbo.i805_00105_Gender_and_Data_of_Birth
dbo.i805_10000_NAMES
dbo.i805_10005_Address
dbo.i805_10010_Email
dbo.i805_10015_Phone
dbo.i805_20000_External_Sun
dbo.i805_20200_External_Setup
dbo.i805_30000_Academic_Career
dbo.i805_30005_Academic_Program
dbo.i805_30010_Academic_Plan
dbo.i805_30011_ACAD_SUBPLAN
dbo.i805_30015_Academic_Term
dbo.i805_30020_Academic_Term_Enrollment
dbo.i805_30030_Residency
dbo.i805_30040_HONOR_AWARD_CS
dbo.i805_30050_ACAD_STDNG_ACTN
dbo.i805_30100_Degree
dbo.i805_30200_Student_Financials
dbo.i805_30205_ACCOUNT_SF
dbo.i805_30210_ANTICIPATED_AID
dbo.i805_30500_Academic_Summary
dbo.i805_30510_Academic_Career_Term
dbo.i805_30520_Academic_Enrollment
dbo.i805_30600_External_Degree
dbo.i805_40000_Service_Indicator
dbo.i805_40100_Student_Groups
dbo.i805_40200_Citizenship
dbo.i805_40300_Visa
dbo.i805_50000_ADMISSIONS_TESTING_SUMMARY
dbo.i805_50010_ADMISSIONS_TESTING
dbo.i805_50015_STDNT_TEST
dbo.i805_50020_CU_ST_TEST_COMP
dbo.i805_60000_ETHNICITY
dbo.i805_70000_HIGH_SCHOOL_SUBJECTS
dbo.i805_70010_EXT_ACAD_DATA
dbo.i805_70020_EXT_ACAD_SUM
dbo.i805_80000_ADM_APPL_DATA
dbo.i805_80005_ADM_APPL_PROG
dbo.i805_80010_ADM_APPL_PLAN
dbo.i805_80015_ADM_APPL_SBPLAN
dbo.i805_80020_CU_STU_DATA_CAS
dbo.i805_80030_CU_STDNT_DATA
Retrieve Fields in this Order:
Sort field names
Show: Tables Views Synonyms System tables
< Back Next > Finish Cancel Help
Line Command
Information
New Query...
IBM SPSS Statistics Processor is ready
Ln 1 Col 1
NUM
1:35 PM
9/25/2012

I-805 in Crystal Reports



I-805 Data View in SPSS



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677	10852841	CPE	CPETW	03/03/2007	35.00	PASS	0	0	
678	10852841	CPE	CPETW	10/10/2006	26.00	FAIL	0	0	
679	10852841	CUNY-ESSAY	WE1	03/07/2006	3.00		0	0	
680	10852841	CUNY-ESSAY	WE1	11/09/2005	3.00		0	0	
681	10852841	CUNY-ESSAY	WE1	07/12/2005	3.00		0	0	
682	10852841	CUNY-ESSAY	WE1	06/14/2005	3.00		0	0	
683	10852841	CUNY-ESSAY	WE1	03/29/2005	3.00		0	0	
684	10852841	CUNY-ESSAY	WE1	01/18/2005	3.00		0	0	
685	10852841	CUNY-ESSAY	WE1	12/10/2004	3.00		0	0	
686	10852841	CUNY-ESSAY	WE1	05/17/2004	2.00		0	0	
687	10852841	CUNY-ESSAY	WE1	01/15/2004	2.00		0	0	
688	10852841	CUNY-ESSAY	WE1	12/10/2003	2.00		0	0	
689	10852841	CUNY-ESSAY	WE1	12/30/2002	1.00		0	0	
690	10852841	CUNY-ESSAY	WE2	03/07/2006	4.00		0	0	
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693	10852841	CUNY-ESSAY	WE2	06/14/2005	3.00		0	0	
694	10852841	CUNY-ESSAY	WE2	03/29/2005	3.00		0	0	
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698	10852841	CUNY-ESSAY	WE2	01/15/2004	2.00		0	0	
699	10852841	CUNY-ESSAY	WE2	12/10/2003	2.00		0	0	
700	10852841	CUNY-ESSAY	WE2	12/30/2002	1.00		0	0	
701	10852841	CUNY-ESSAY	WEF	03/07/2006	7.00	PASS	0	0	
702	10852841	CUNY-ESSAY	WEF	11/09/2005	6.00	FAIL	0	0	
703	10852841	CUNY-ESSAY	WEF	07/12/2005	6.00	FAIL	0	0	
704	10852841	CUNY-ESSAY	WEF	06/14/2005	6.00	FAIL	0	0	
705	10852841	CUNY-ESSAY	WEF	03/29/2005	6.00	FAIL	0	0	
706	10852841	CUNY-ESSAY	WEF	01/18/2005	6.00	FAIL	0	0	
707	10852841	CUNY-ESSAY	WEF	12/10/2004	6.00	FAIL	0	0	
708	10852841	CUNY-ESSAY	WEF	05/17/2004	4.00	FAIL	0	0	
709	10852841	CUNY-ESSAY	WEF	01/15/2004	4.00	FAIL	0	0	
710	10852841	CUNY-ESSAY	WEF	12/10/2003	4.00	FAIL	0	0	
711	10852841	CUNY-ESSAY	WEF	12/30/2002	2.00	FAIL	0	0	
712	10852841	GEDS	ENGL	04/16/2012	50.00		0	0	
713	13167499	ACT-MATH-3	MPL1	06/09/2009	22.00		0	0	
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716	13167499	ACT-READING	RAF	12/11/2010	93.00	PASS	0	0	
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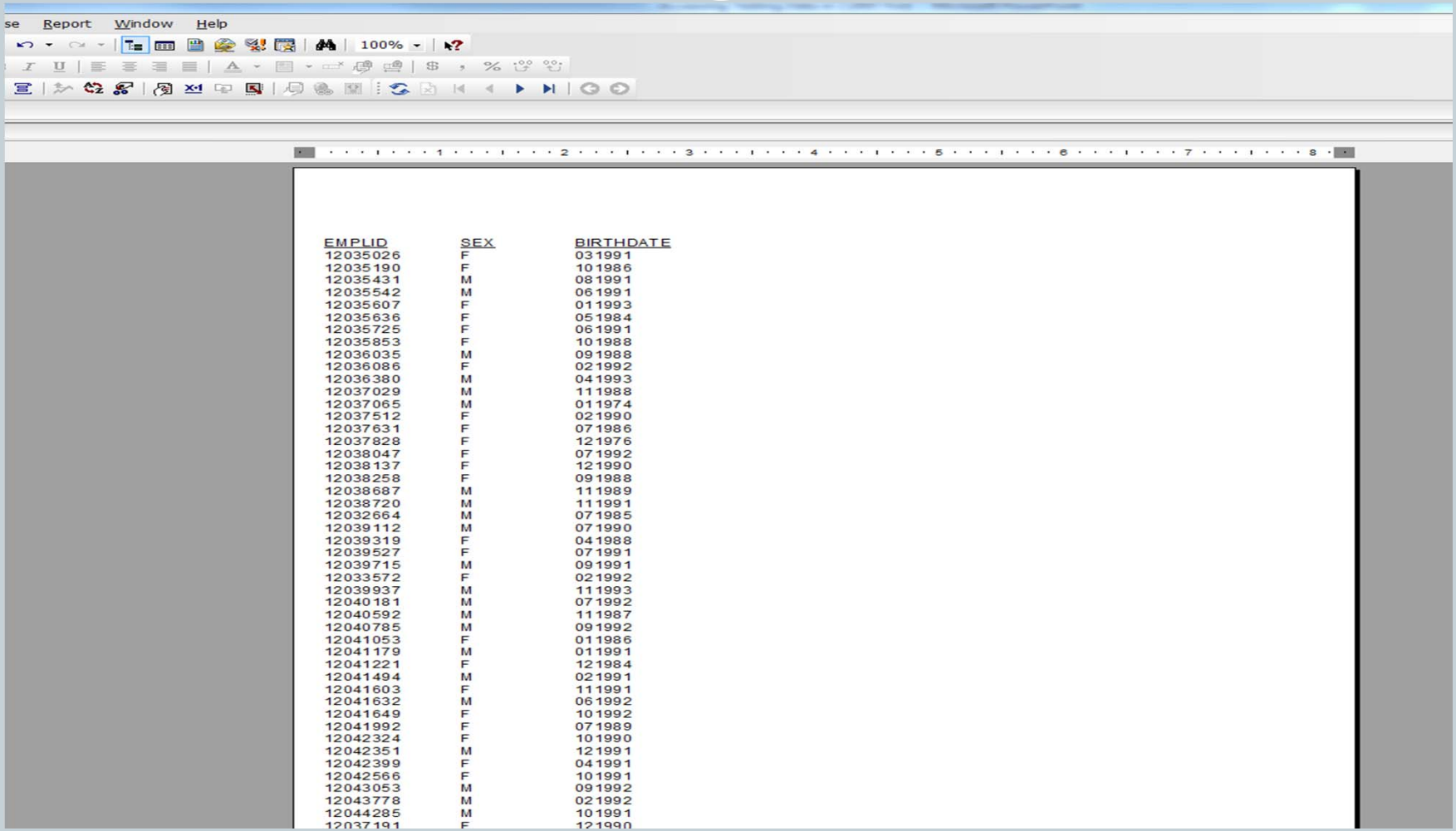
I-805 Data View in Crystal Reports



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12035542	M	061991
12035607	F	011993
12035636	F	051984
12035725	F	061991
12035853	F	101988
12036035	M	091988
12036086	F	021992
12036380	M	041993
12037029	M	111988
12037065	M	011974
12037512	F	021990
12037631	F	071986
12037828	F	121976
12038047	F	071992
12038137	F	121990
12038258	F	091988
12038687	M	111989
12038720	M	111991
12032664	M	071985
12039112	M	071990
12039319	F	041988
12039527	F	071991
12039715	M	091991
12033572	F	021992
12039937	M	111993
12040181	M	071992
12040592	M	111987
12040785	M	091992
12041053	F	011986
12041179	M	011991
12041221	F	121984
12041494	M	021991
12041603	F	111991
12041632	M	061992
12041649	F	101992
12041992	F	071989
12042324	F	101990
12042351	M	121991
12042399	F	041991
12042566	F	101991
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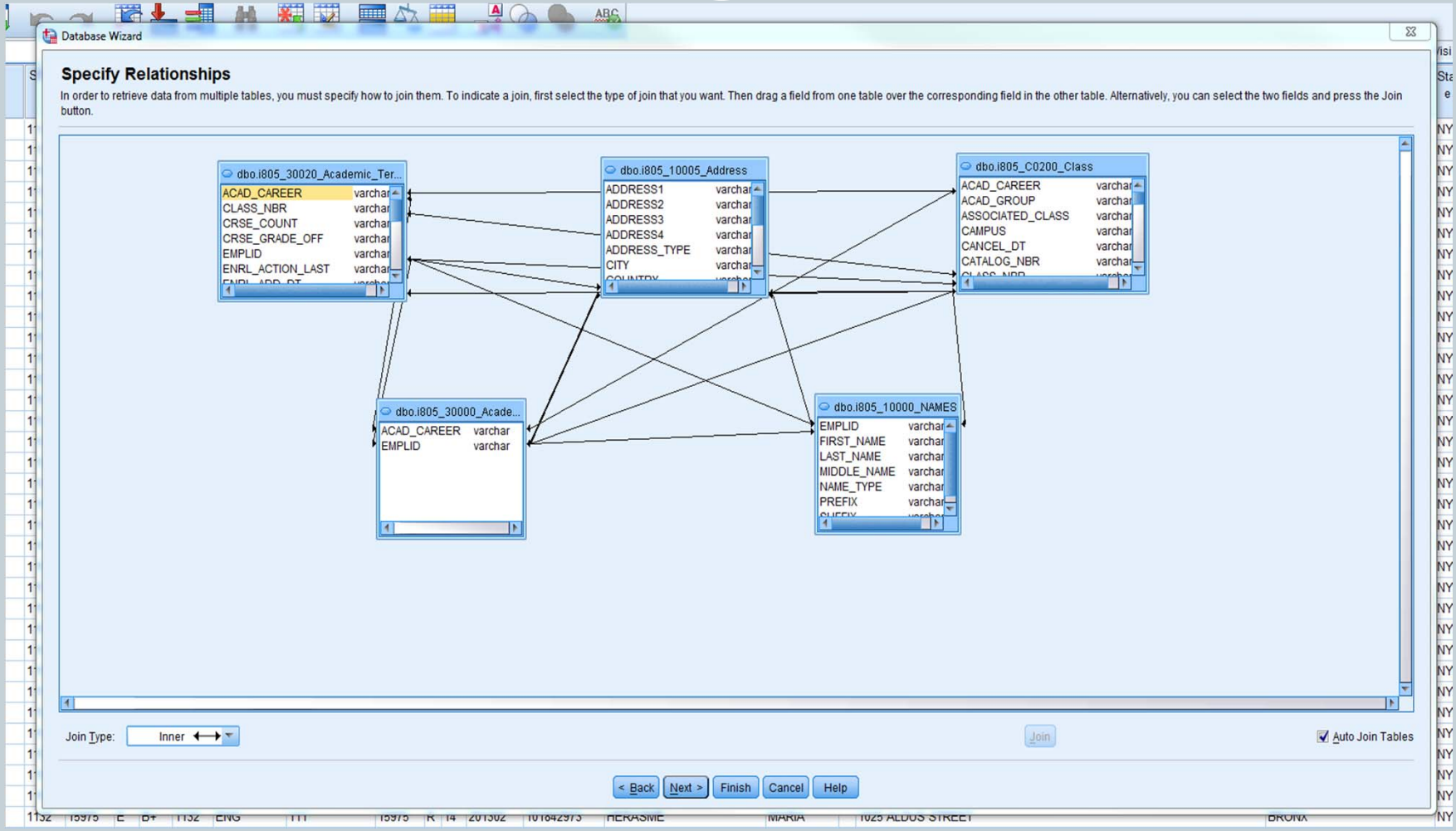
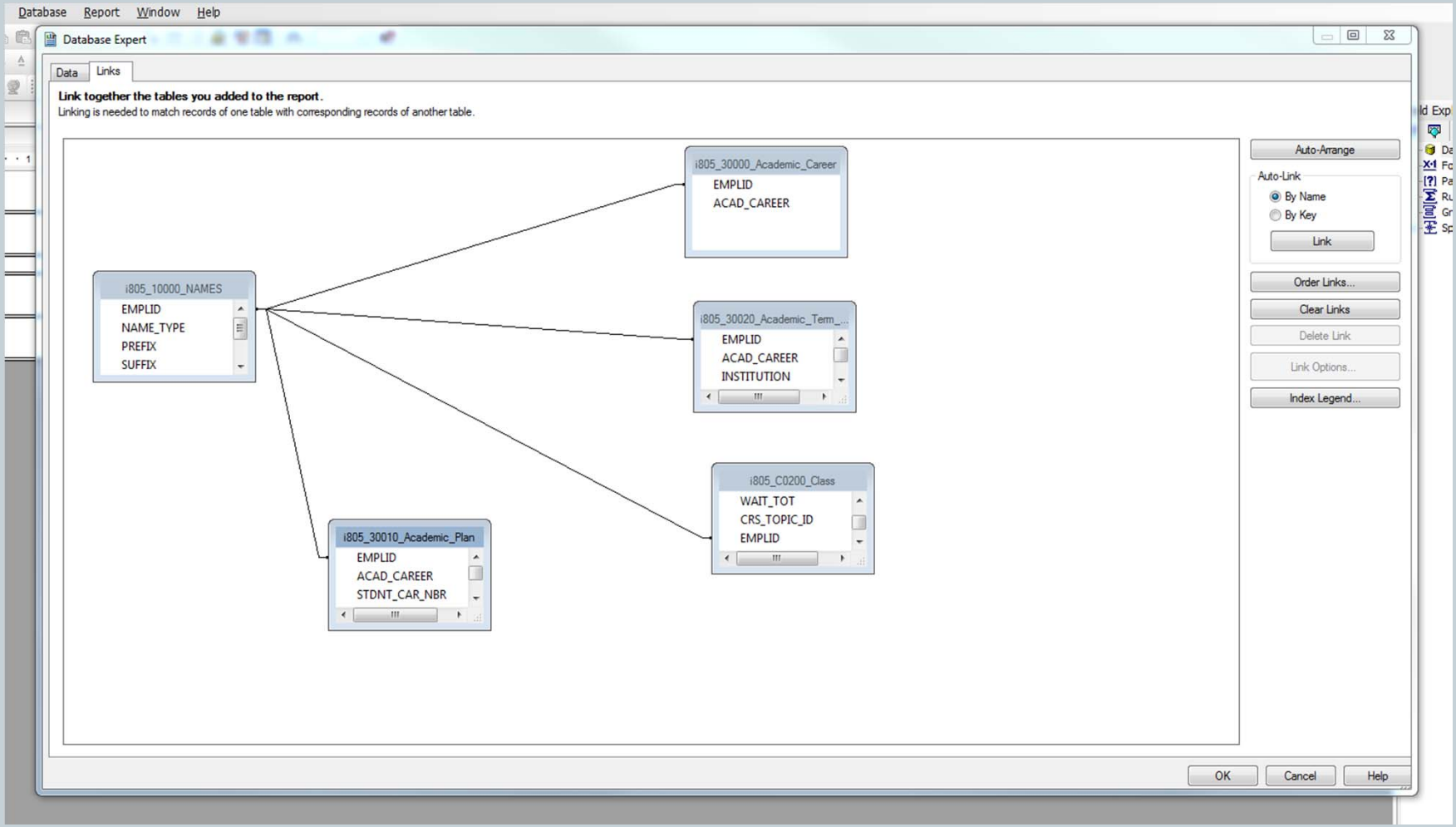
12037191	F	121990

I-805 Joins in SPSS



I-805 Joins in Crystal Reports



Example of SPSS Syntax for I-805


```
* ************************************************************************************************************************************************.
* THIS PROGRAM CREATES A DATA FILE CONTAINING THE MOST RECENT SKILLS TEST SCORES.
* THE OUTPUT FROM THIS PROGRAM IS SENT TO THE FACULTY IN ENG AND ESL DEVELOPMENTAL.
* COURSES FOR THEIR USE.
* THE PROGRAM GETS THE TEST DATA, MATCHES IT TO COURSE INFORMATION, AND STUDENT NAMES.
* IT IS A THING OF BEAUTY.
* ************************************************************************************************************************************************.
* ************************************************************************************************************************************************.
* The initial part of the program accesses the I-805 file and extracts the most recent test information for .
* all students, regardless of their enrollment status in the current term.
* The data are aggregated to a single record containing the most recent skills test information for the students.
* ************************************************************************************************************************************************.
GET DATA
  /TYPE=ODBC
  /CONNECT='DSN=HCC805ST;Description=I085 CUNY First Extract;UID=;Trusted_Connection=Yes;APP=IBM '+
    'SPSS Statistics;WSID=B4070014229RG;DATABASE=HCCMaster'
  /SQL='SELECT EMPLID, TEST_ID, TEST_COMPONENT, TEST_DT, SCORE, SCORE_LETTER, EXT_ACAD_LEVEL, '+
    'PERCENTILE  FROM dbo.i805_50010_ADMISSIONS_TESTING'
  /ASSUMEDSTRWIDTH=255.
CACHE.
EXECUTE.
ALTER TYPE ALL(A=AMIN).
DATASET NAME DataSet1 WINDOW=FRONT.

frequencies variables = test_id test_component score score_letter.

string testyear (a4) testmon (a2) testday (a2) testdate (a8).
compute testyear = substr (test_dt, 7,4).
compute testmon = substr (test_dt, 1,2).
compute testday = substr (test_dt, 4,2).

compute testdate = concat (testyear,testmon,testday).
frequencies variables = testdate.

sort cases by emplid test_id test_component testdate.
```

I-805 Summary

- Advantages
  - Easy access using SPSS, Crystal Reports, Access, etc.
  - Saving SPSS syntax allows quick programming.
  - Plethora of data available.
- Disadvantages
  - Can be difficult to navigate:
    - need to learn table content, variables;
    - joints can be very tricky, relationships between tables not intuitive.
  - Up to 24 hour lag to update.
  - Only a few terms of data available.
  - Need to obtain access from IT department.

I-184a Extract

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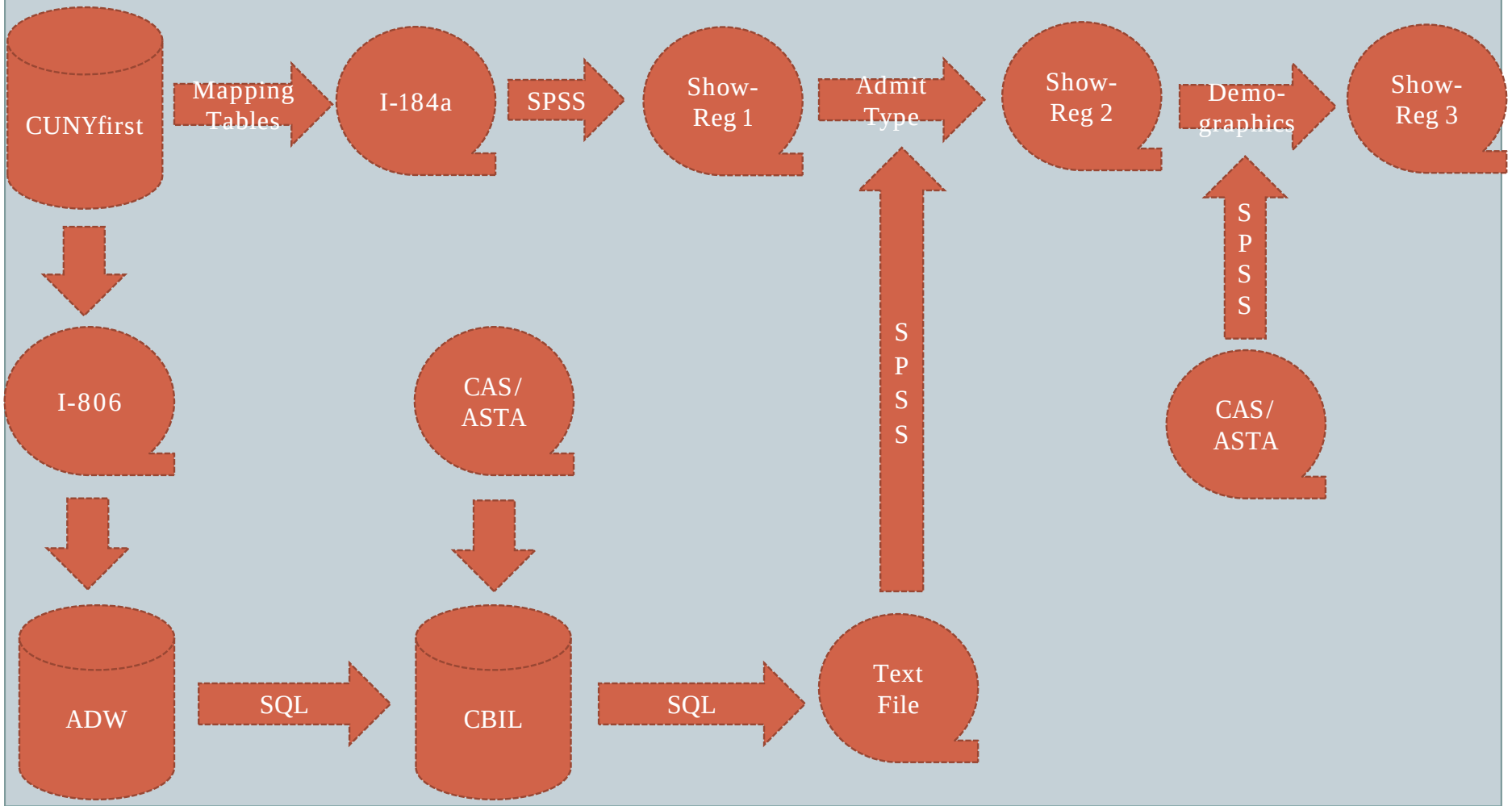
ARIEL COHEN

MANAGER OF STUDENT INFORMATION

OFFICE OF INSTITUTIONAL RESEARCH & ANALYSIS

CUNY CENTRAL OFFICE

Process of Creating a Show-Registration File



I-184a Summary

- Advantages
  - One record per student, career, institution, and term.
  - Large set of student demographic, enrollment, performance, tuition, and graduation data.
- Disadvantages
  - Cannot be run for all institutions overnight.
  - File is extremely large (32,000 columns).
  - Layout not optimal for degrees granted.
  - Computed fields are not dependable.
  - Difficult to get modifications.

CBIL
CUNY Business Intelligence Lite

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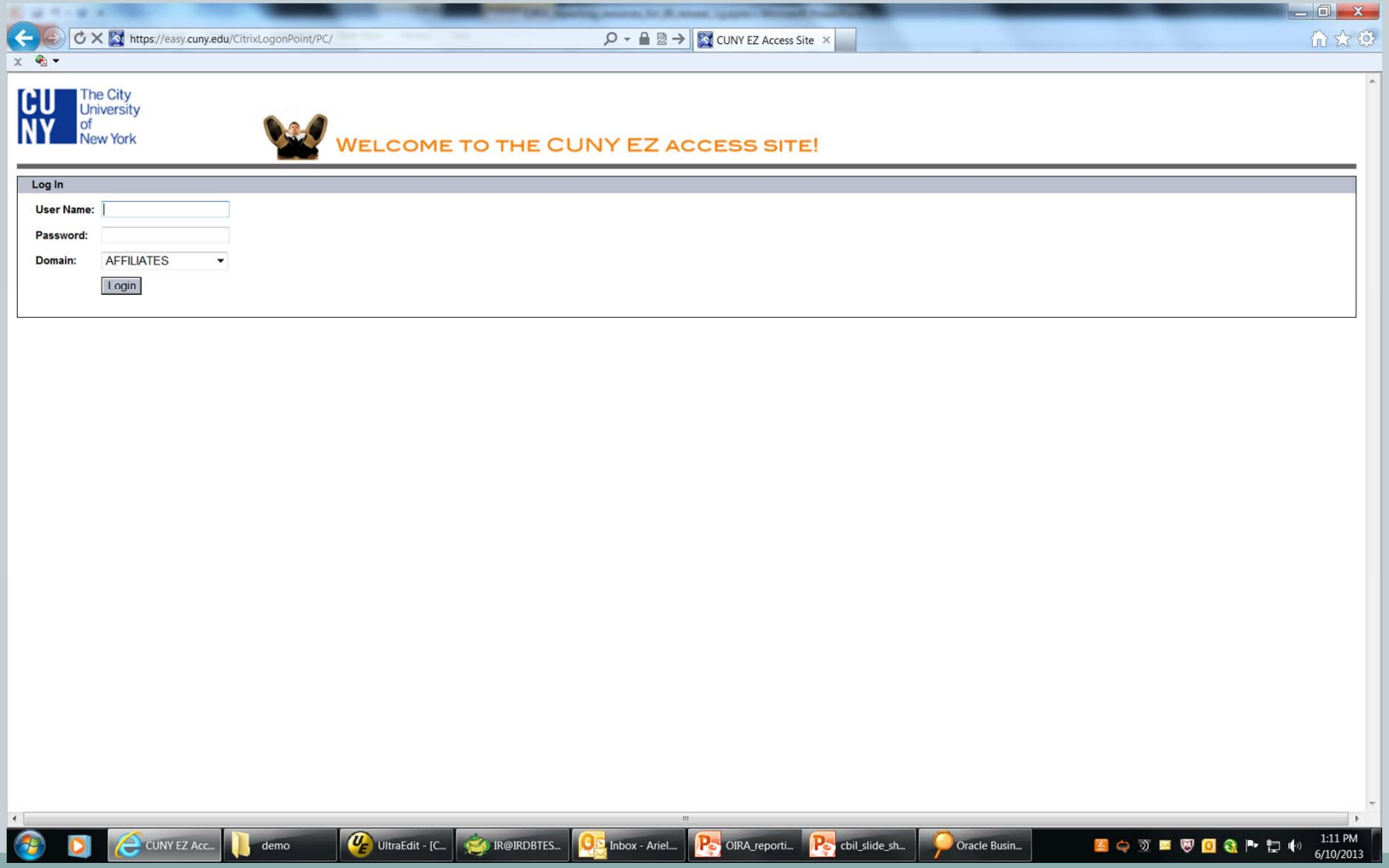
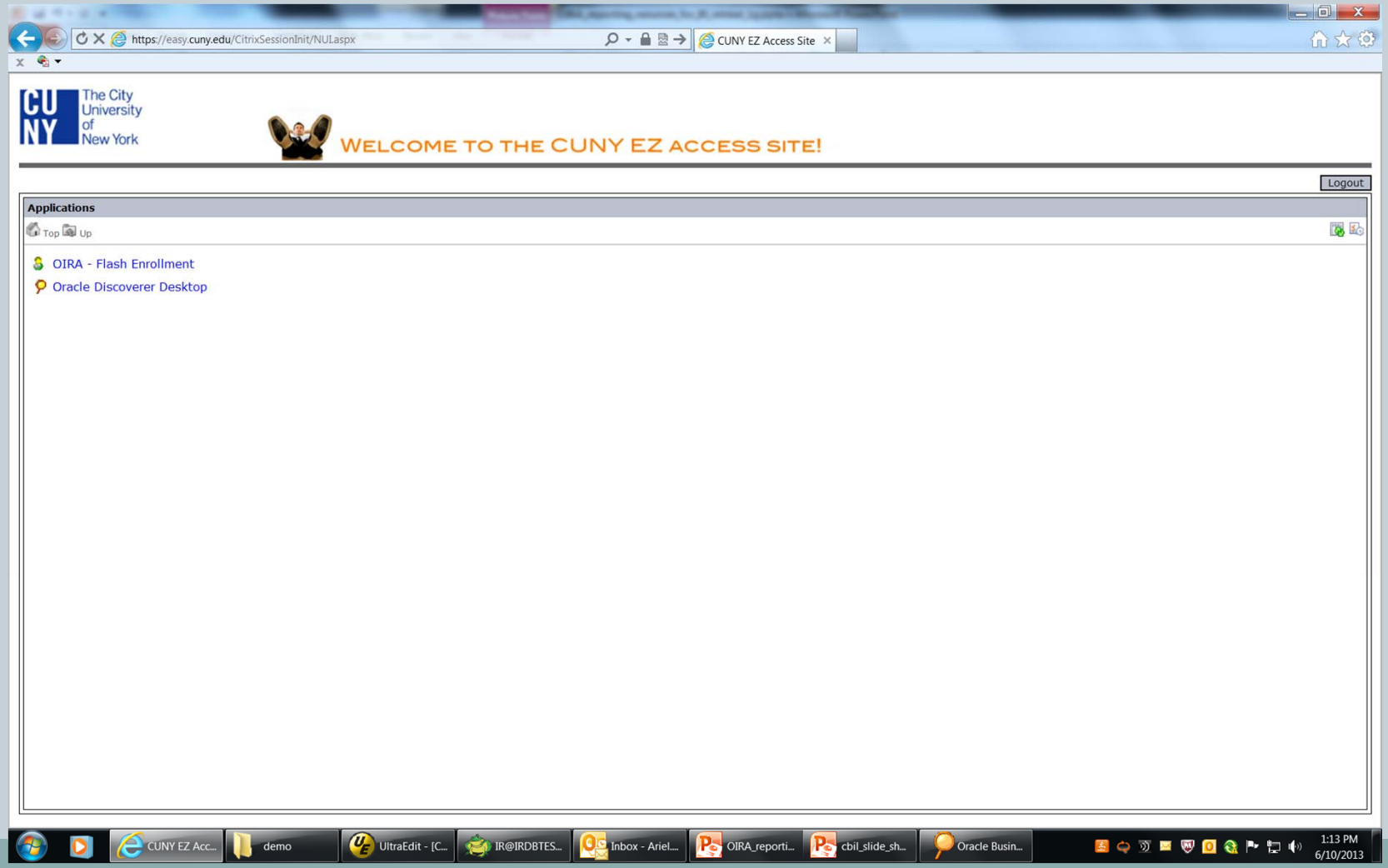
CUNY CENTRAL OFFICE

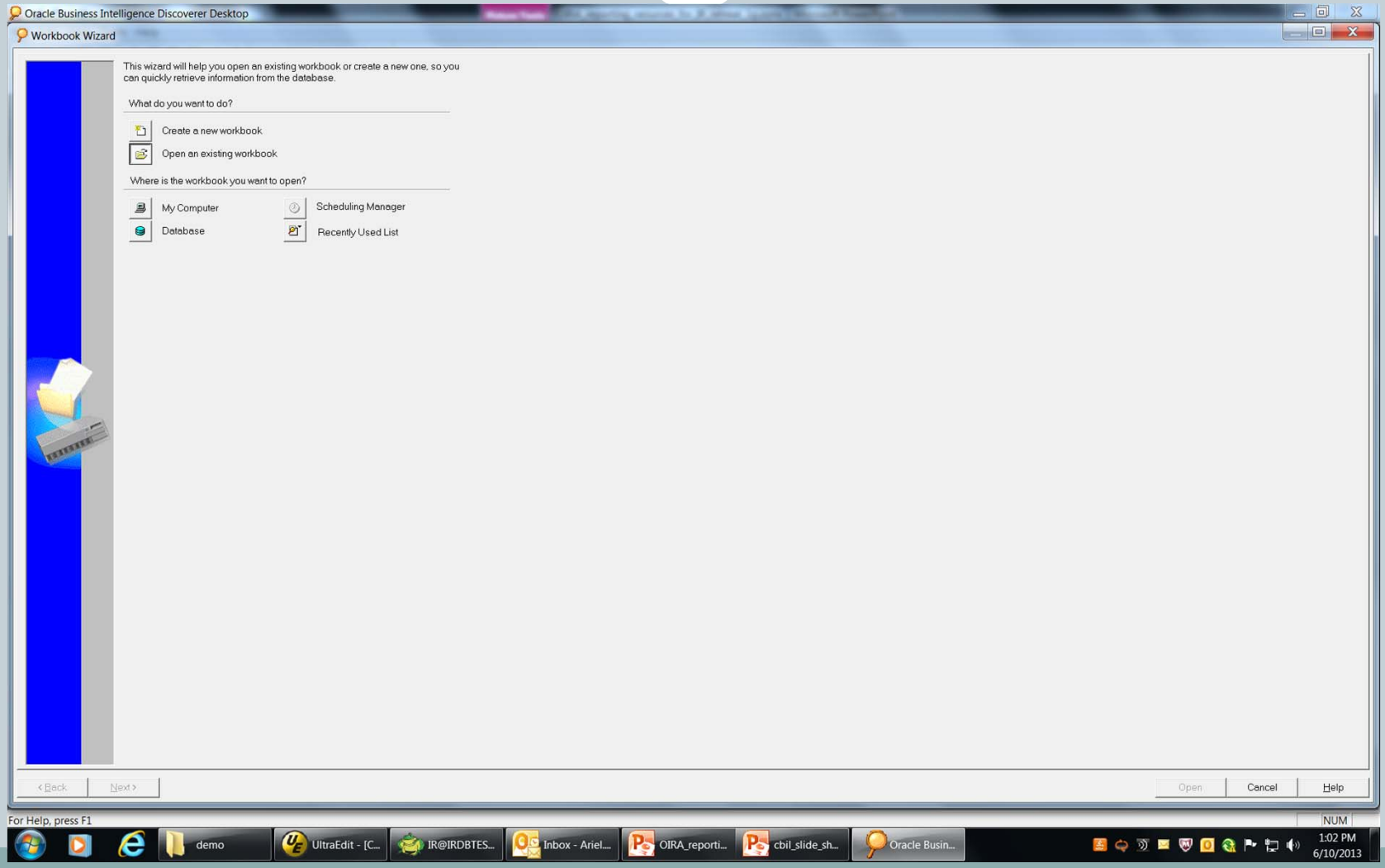
https://easy.cuny.edu/CitrixLogonPoint/PC/



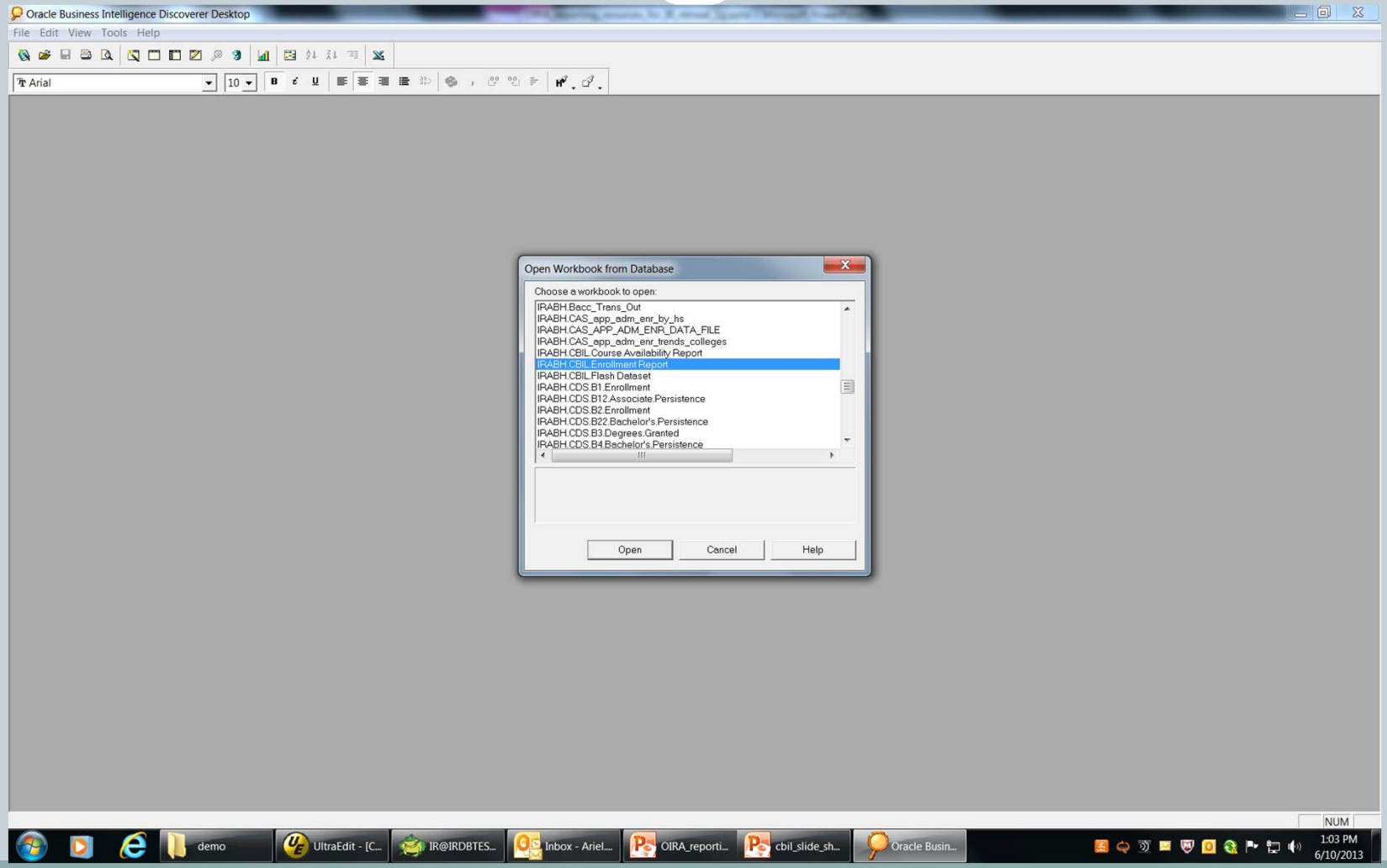
Oracle Discoverer Desktop



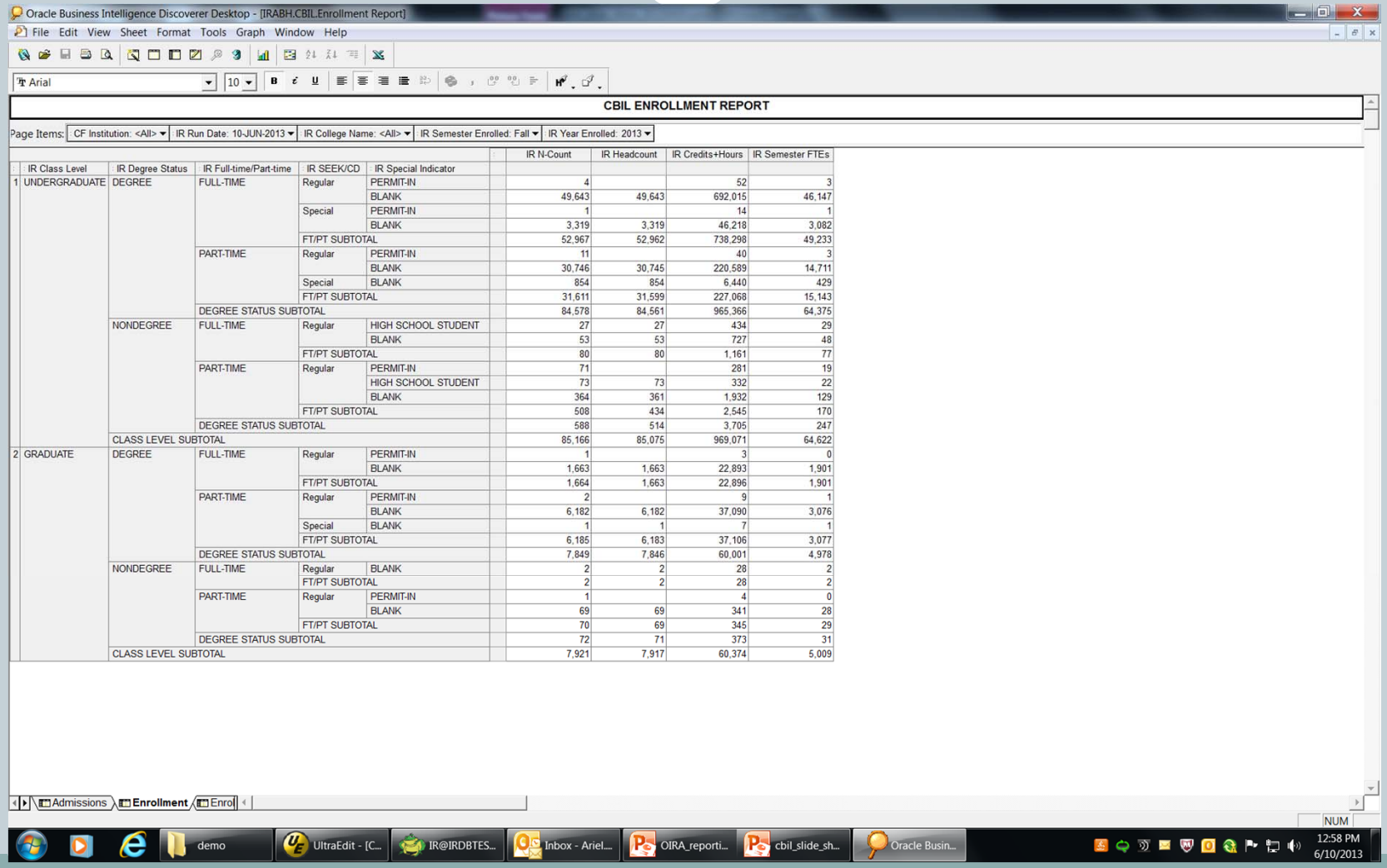
Workbook Wizard



Open Workbook from Database

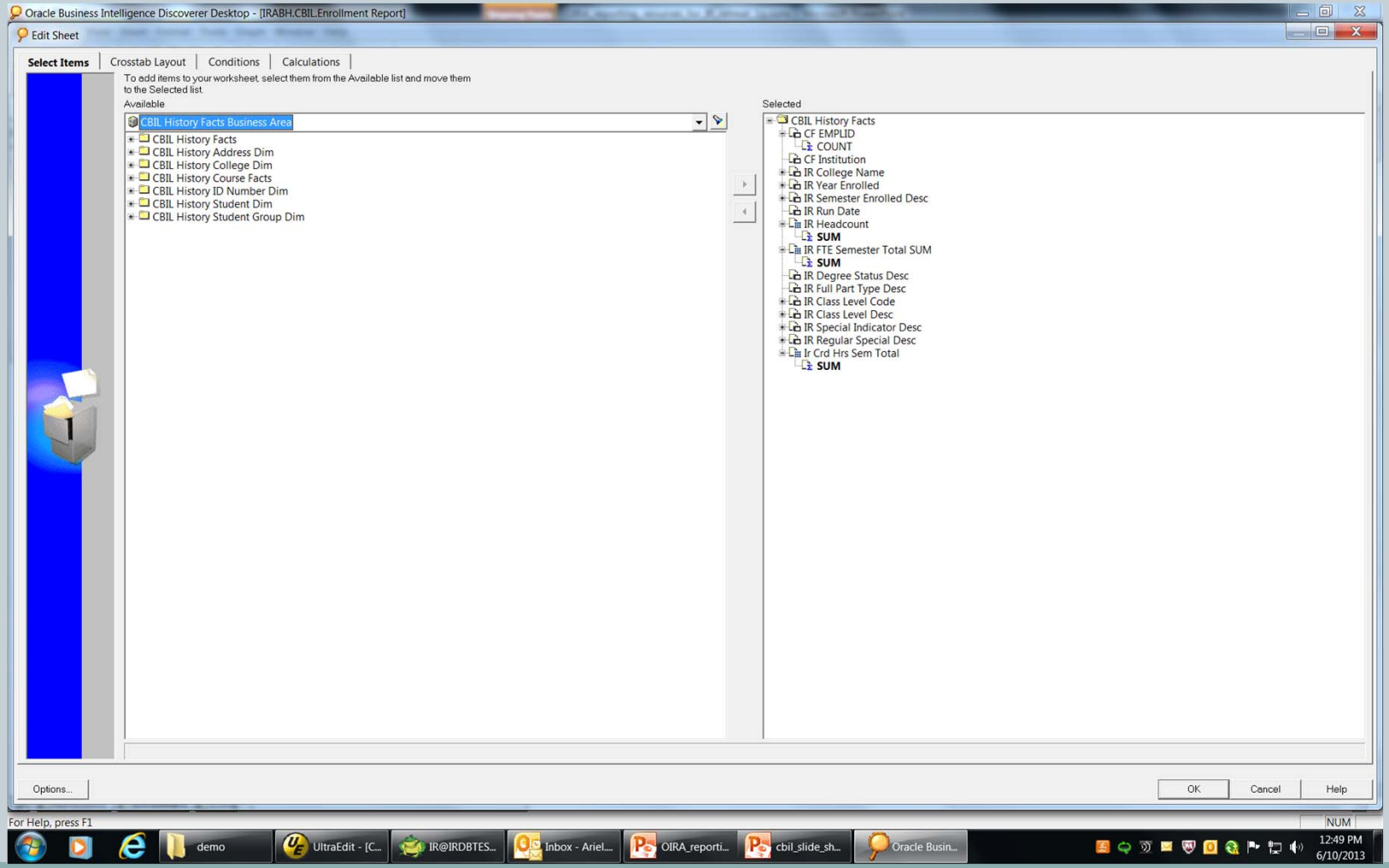


CBIL Enrollment Report

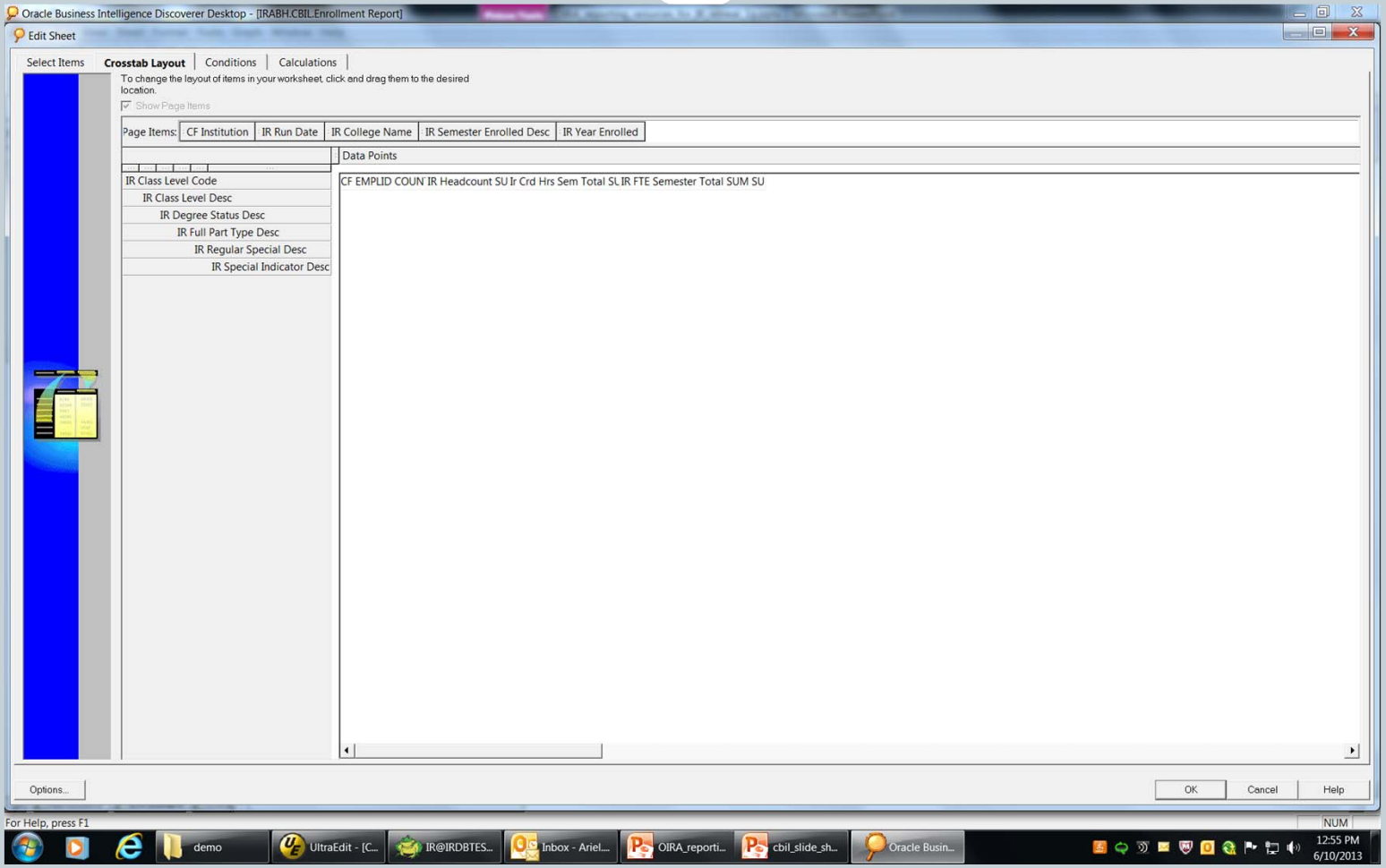


	IR Class Level	IR Degree Status	IR Full-time/Part-time	IR SEEK/CD	IR Special Indicator	IR N-Count	IR Headcount	IR Credits+Hours	IR Semester FTEs
1	UNDERGRADUATE	DEGREE	FULL-TIME	Regular	PERMIT-IN	4		52	3
					BLANK	49,643	49,643	692,015	46,147
				Special	PERMIT-IN	1		14	1
					BLANK	3,319	3,319	46,218	3,082
				FT/PT SUBTOTAL		52,967	52,962	738,298	49,233
			PART-TIME	Regular	PERMIT-IN	11		40	3
					BLANK	30,746	30,745	220,589	14,711
				Special	BLANK	854	854	6,440	429
				FT/PT SUBTOTAL		31,611	31,599	227,068	15,143
			DEGREE STATUS SUBTOTAL			84,578	84,561	965,366	64,375
		NONDEGREE	FULL-TIME	Regular	HIGH SCHOOL STUDENT	27	27	434	29
					BLANK	53	53	727	48
				FT/PT SUBTOTAL		80	80	1,161	77
			PART-TIME	Regular	PERMIT-IN	71		281	19
					HIGH SCHOOL STUDENT	73	73	332	22
					BLANK	364	361	1,932	129
				FT/PT SUBTOTAL		508	434	2,545	170
			DEGREE STATUS SUBTOTAL			588	514	3,705	247
		CLASS LEVEL SUBTOTAL				85,166	85,075	969,071	64,622
2	GRADUATE	DEGREE	FULL-TIME	Regular	PERMIT-IN	1		3	0
					BLANK	1,663	1,663	22,893	1,901
				FT/PT SUBTOTAL		1,664	1,663	22,896	1,901
			PART-TIME	Regular	PERMIT-IN	2		9	1
					BLANK	6,182	6,182	37,090	3,076
				Special	BLANK	1	1	7	1
				FT/PT SUBTOTAL		6,185	6,183	37,106	3,077
			DEGREE STATUS SUBTOTAL			7,849	7,846	60,001	4,978
		NONDEGREE	FULL-TIME	Regular	BLANK	2	2	28	2
				FT/PT SUBTOTAL		2	2	28	2
			PART-TIME	Regular	PERMIT-IN	1		4	0
					BLANK	69	69	341	28
				FT/PT SUBTOTAL		70	69	345	29
			DEGREE STATUS SUBTOTAL			72	71	373	31
		CLASS LEVEL SUBTOTAL				7,921	7,917	60,374	5,009

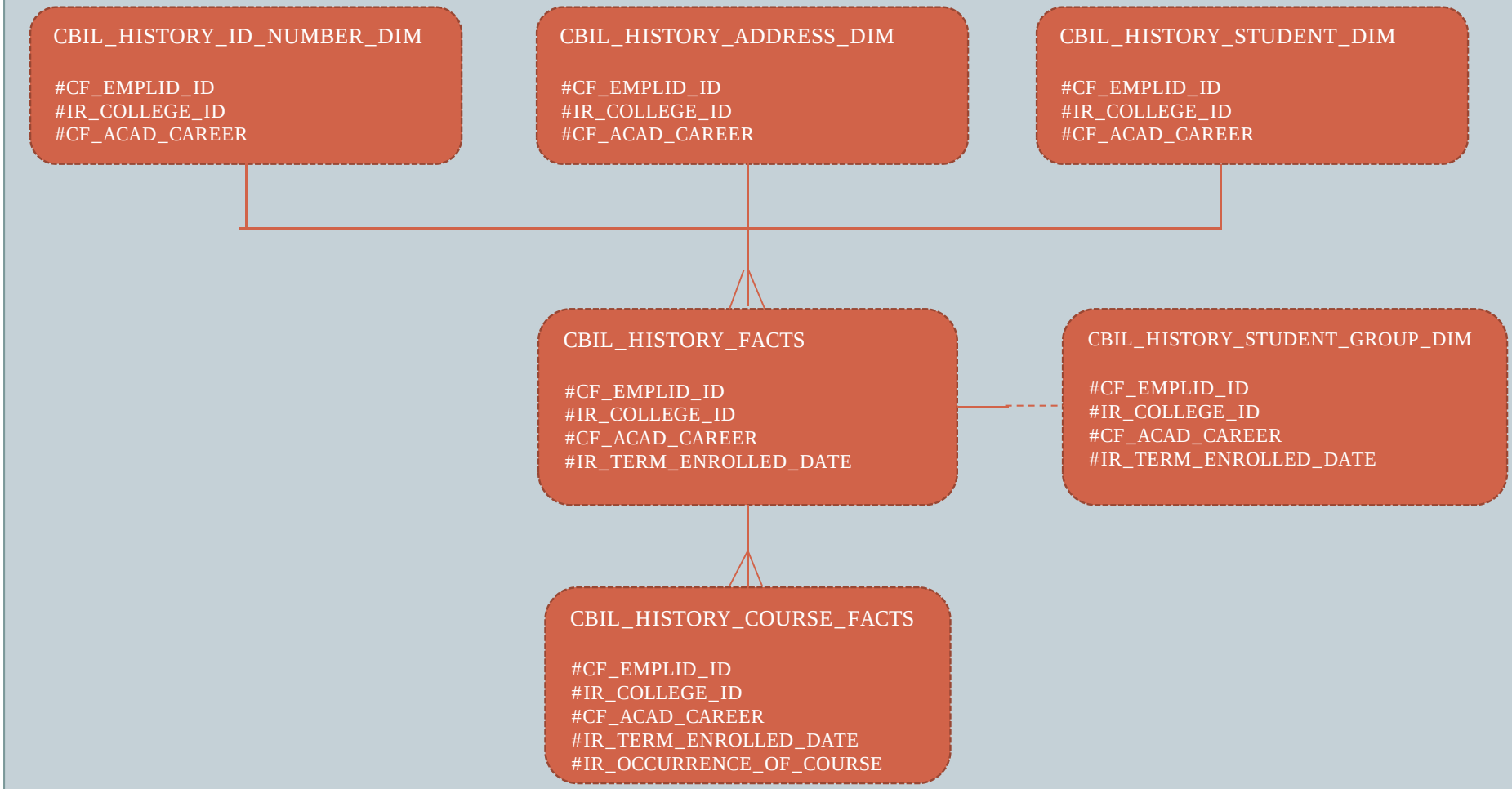
Edit Sheet


Oracle Business Intelligence Discoverer Desktop - [IRABH.CBIL.Enrollment Report]
Edit Sheet
Select Items
Crosstab Layout
Conditions
Calculations
To add items to your worksheet, select them from the Available list and move them to the Selected list.
Available
CBIL History Facts Business Area
CBIL History Facts
CBIL History Address Dim
CBIL History College Dim
CBIL History Course Facts
CBIL History ID Number Dim
CBIL History Student Dim
CBIL History Student Group Dim
Selected
CBIL History Facts
CF EMPLID
COUNT
CF Institution
IR College Name
IR Year Enrolled
IR Semester Enrolled Desc
IR Run Date
IR Headcount
SUM
IR FTE Semester Total SUM
SUM
IR Degree Status Desc
IR Full Part Type Desc
IR Class Level Code
IR Class Level Desc
IR Special Indicator Desc
IR Regular Special Desc
Ir Crd Hrs Sem Total
SUM
Options...
OK
Cancel
Help
For Help, press F1
NUM
demo
UltraEdit - [C...
IR@IRDBTES...
Inbox - Ariel....
OIRA_reporti...
cbil_slide_sh...
Oracle Busin...
12:49 PM
6/10/2013

Crosstab Layout



CBIL History Facts Business Area



CBIL Summary

- Advantages
  - Data model is similar to IRDB.
  - Meaningful categories such Type of Admission and Degree Pursued are computed in ways consistent with census data.
  - Oracle Discoverer facilitates both canned and ad-hoc reporting.
- Disadvantages
  - Data are not refreshed until noon of the following day.
  - Limited set of enrollment data available.

IRDB
Institutional Research Database

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OFFICE OF INSTITUTIONAL RESEARCH & ANALYSIS

CUNY CENTRAL OFFICE

IRDB Summary

- Advantages
  - Census enrollment data going back to 1990
  - Admissions, skills, and financial aid data.
  - Data model facilitates reporting of trends and outcomes.
- Disadvantages
  - Steep learning curve.
  - Difficult to introduce new elements into data model.
  - Delays in finalizing and loading census data.

Future Reporting Resources

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MARK CASAZZA

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OFFICE OF INSTITUTIONAL RESEARCH & ANALYSIS

CUNY CENTRAL OFFICE

Limitations of Current Approach

- CUNYfirst Reporting Instance and Interfaces
  - CIS resources are still focused on CUNYfirst rollout.
  - Interfaces (extracts) are redundant and difficult to modify.
  - Query Manager has limited functionality.
- Independent campus-based BI Solutions
  - Numerous IR offices tackling BI challenges in isolation.
  - Potential for increased inconsistencies in data definitions.
  - Significant duplication of work when working independently.

Limitations of Current Approach (cont'd)

- IRDB and CBIL
  - CBIL does not meet all campus needs.
  - Oracle Discoverer has limited querying, presentation and analytical options.
    - It has also been depreciated with the current version of Oracle.
  - IRDB and CBIL data are not web accessible or structured for drilling through/across dimensions or the representation of time.

Future Data

- Improved ELT (extract/load/transform) process
  - Provide access to CUNYfirst data in a more timely manner.
  - Eliminate static extracts from the data flow.
  - Integrate current data with census data in near real-time.
- Flexible data models
  - Conform current and census data and work toward eliminating data “silos” and increasing re-usability.
  - Create the ability to integrate new data and expand the range of possible analyses.
- Collaborate with colleges to assess current and future needs for reporting and analysis

Future Data Uses

- Greatly expanded end-user functionality enabling:
  - intuitive ad-hoc queries
  - scheduled reports
  - data visualization
  - self-service reporting/analysis
  - sharing analyses among various stakeholders
  - increased usability expanding usage and access to data
  - interactive executive dashboards allowing the campus community to interact with data on their own schedules rather than reporting cycles.

General Project Plan

- Build required new skill-sets internally utilizing training and external expertise.
- Collaborate with colleges to establish a process for gathering user requirements.
- Migrate census and current data into models that allow for flexible reporting and analysis.
- Make data available through Oracle Business Intelligence on web ~~and mobile~~ browsers.