MINI COURSE IN PEOPLESOFT QUERY

By Gregory Patterson

Advanced Topics

Expressions

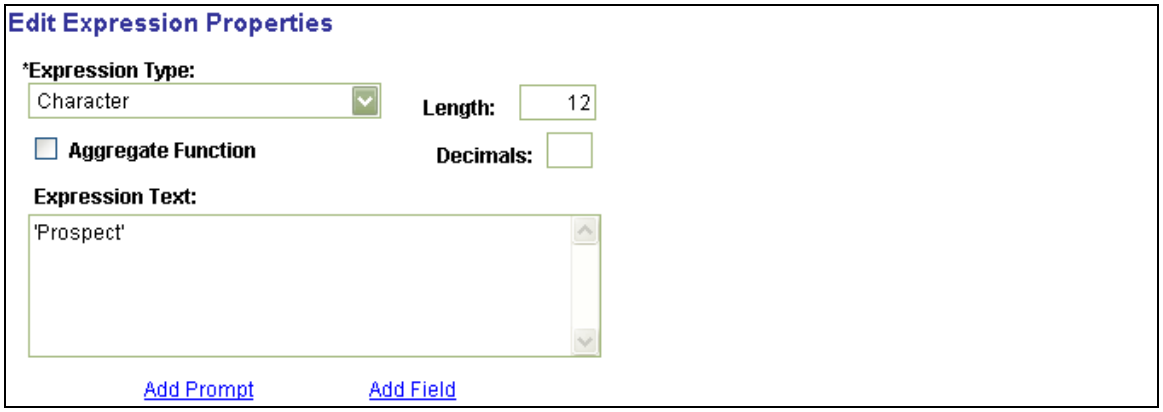
Expressions are constants or calculations that PeopleSoft Query uses or performs as part of a query. Use them when you must calculate a value that PeopleSoft Query does not provide from the table fields (for example, to add the values from two fields together or to multiply a field value by a constant).

An expression can be treated just as if it were a field in the query: select it for output, change its column heading, or choose it as an "order by" column.

In Query Manager, you can use expressions in two ways:

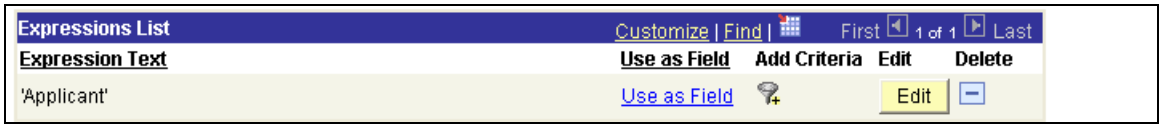
- As comparison values in selection criteria.
- As columns in the query output.

The Union query we did previously lumped prospects and applicants together. (If a person was both, and with the same program and plan, only 1 row appeared.) Suppose now we want to identify them with the words 'Applicant' or 'Prospect'. An expression is the way to go. Add an expression to both levels of the query by going to the Expression page and clicking the Add Expression button.



Knowledge of SQL here is very useful. For example, you must know that constants in a SELECT statement must be enclosed in single quotes!

Be sure the click the Use as Field link to get the expression into the output.



Now when we run the query:

MINI COURSE IN PEOPLESOFT QUERY

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Advanced Topics

View All | Rerun Query | Download to Excel First 1-100 of 106 Last

	ID	Admit Term	Admit Type	Acad Prog	Acad Plan	Name	Applicant or Prospect
1	AA0037	0450	FYR	FAU	ART	Ronald Greene	Applicant
2	AA0037	0450	FYR	FAU	ART	Ronald Greene	Prospect
3	AD5022	0450	FYR	LAU	BIOLBS	Doug Smith	Applicant
4	AD5022	0450	FYR	LAU	BIOLBS	Doug Smith	Prospect
5	AD5023	0450	FYR	FAU	ART	Jane Smith	Applicant
6	AD5023	0450	FYR	FAU	ART	Jane Smith	Prospect
7	AD5024	0450	FYR	LAU	BIOLBS	John Smith	Applicant
8	AD5024	0450	FYR	LAU	BIOLBS	John Smith	Prospect
9	AD5025	0450	FYR	FAU	ART	Amy Smith	Applicant
10	AD5025	0450	FYR	FAU	ART	Amy Smith	Prospect
11	AD5025	0450	FYR	LAU	BIOLBS	Amy Smith	Applicant
12	AD5026	0450	FYR	LAU	BIOLBS	Kim Smith	Applicant

Expressions can contain prompts, database fields, functions, etc. Basically, anything that results in legal SQL syntax for you database can be put into an expression.

Aggregates

In a standard query, each row in the result set that PeopleSoft Query returns corresponds to an individual row in the table that you're querying. Sometimes, however, what you want is a summary of the information in multiple rows. For example, you might want to know how many applicants you have in each program and plan. You can query for this kind of summary information using aggregate functions.

An aggregate function is a special type of operator that returns a single value based on multiple rows of data. When your query includes one or more aggregate functions, PeopleSoft Query collects related rows and displays a single row that summarizes their contents.

Aggregate functions include:

- Count – returns a count of rows
- Sum – returns a sum of all numeric values in the field
- Average – returns the average value of all values in the field
- Max – returns the maximum value of all values in the field
- Min – returns the minimum value of all values in the field

Suppose now we want to know how many applicants we have on file in each program and plan. We'll build a query leaving out fields like EMPLID or NAME.

MINI COURSE IN PEOPLESOFT QUERY

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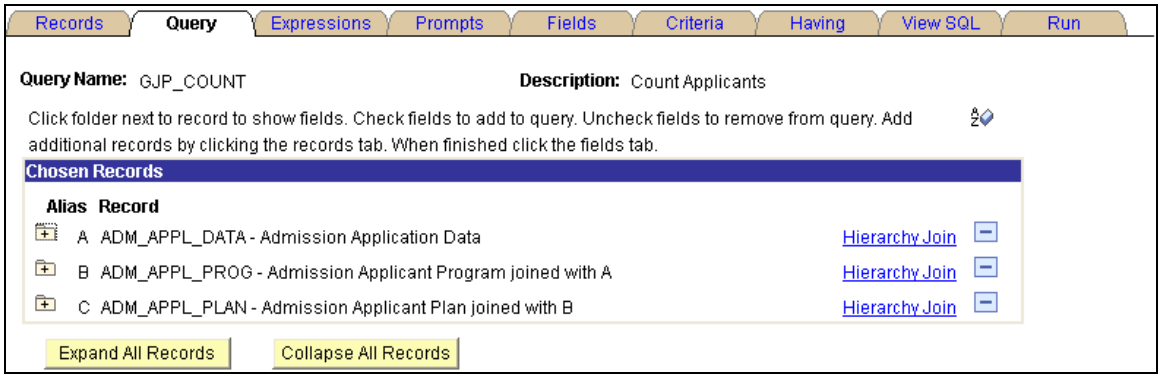
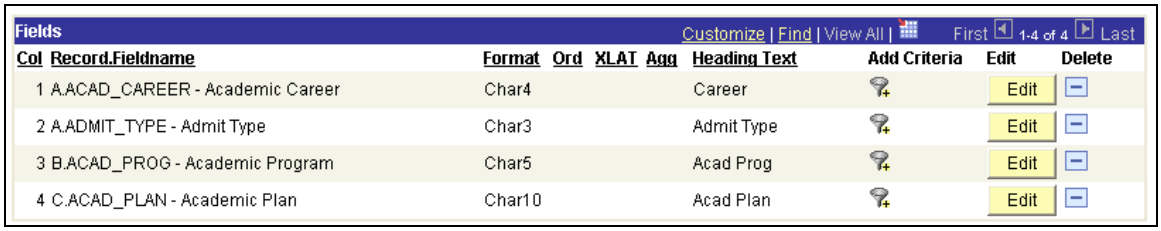
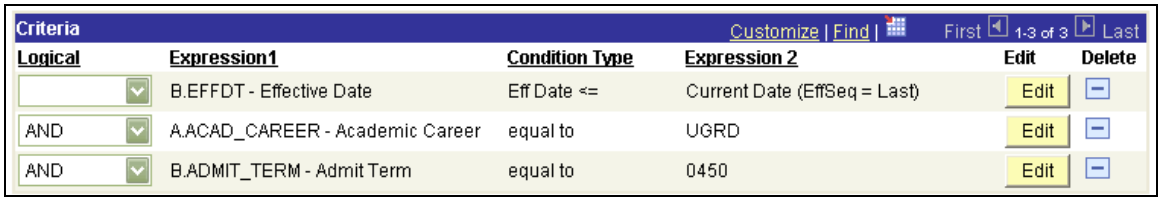
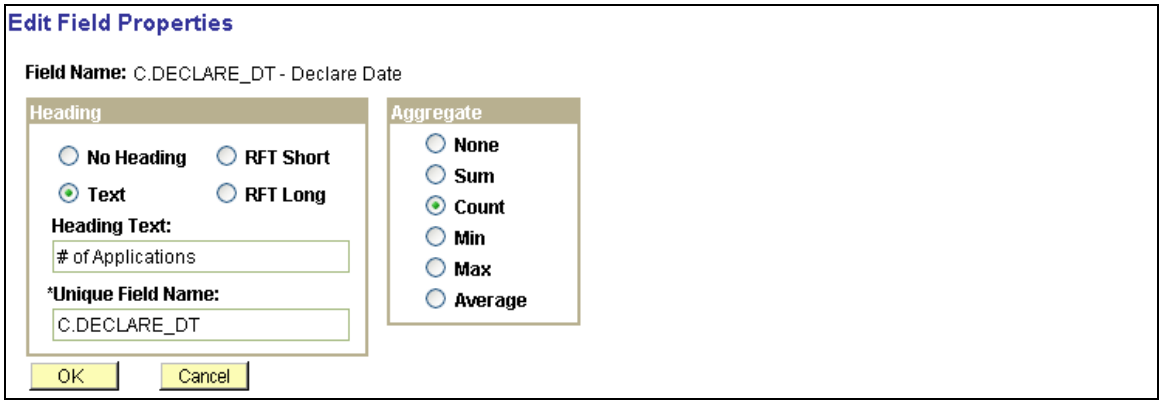
Advanced Topics







To get the PeopleSoft Query tool to generate the SQL needed for an aggregate, we need to select a field into the query to 'count'. There is a restriction that the 'counted' fields cannot be one of the fields used in the join conditions. I've added the C.DECLARE_DT field and click Edit.



MINI COURSE IN PEOPLESOFT QUERY

By Gregory Patterson

Advanced Topics

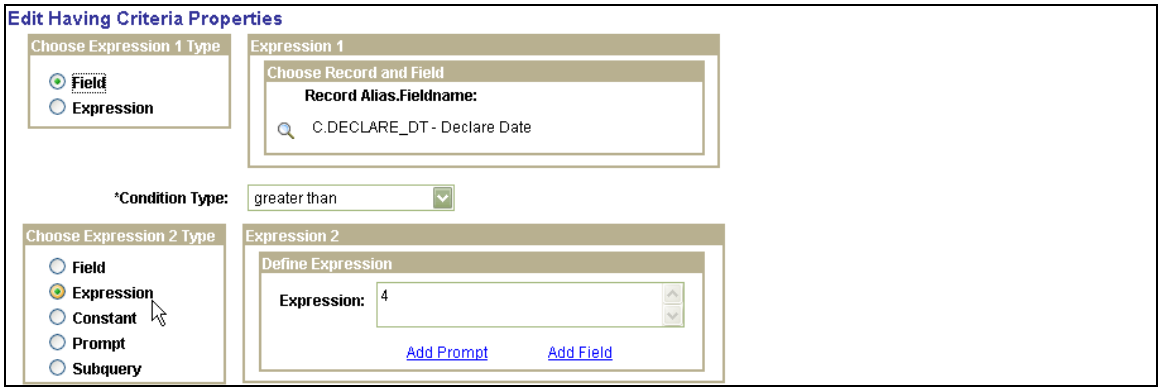
The heading text has been changed and the Count aggregate function selected.

View All | Rerun Query | Download to Excel — First 1-9 of 9 Last

	Career	Admit Type	Acad Prog	Acad Plan	# of Applications
1	UGRD	FYR	FAU	ART	8
2	UGRD	TRF	FAU	ART	1
3	UGRD	FYR	FAU	DANCE	1
4	UGRD	FYR	LAU	ART-MINOR	5
5	UGRD	FYR	LAU	BIOLBS	20
6	UGRD	TRF	LAU	BIOLBS	2
7	UGRD	FYR	LAU	ENGL-BA	8
8	UGRD	FYR	LAU	MATHBA	6
9	UGRD	FYR	LAU	UNDECL-UG	2

Suppose now we really only want to see those plans with more than 4 applicants. The rules of SQL don't allow WHERE clauses to contain aggregate items. However there is the 'Having' clause which can be used in this case.

Navigate to the Having page and click Add Having Criteria. The only Record Alias.Fieldnames you can select are those with an aggregate function defined. Since we put the aggregate function on DECLARE_DT, the system thinks the second half of the criteria should be a date format. Just override this by selecting an expression and put in a value.



The results now look like this:

View All | Rerun Query | Download to Excel — First 1-5 of 5 Last

	Career	Admit Type	Acad Prog	Acad Plan	# of Applications
1	UGRD	FYR	FAU	ART	8
2	UGRD	FYR	LAU	ART-MINOR	5
3	UGRD	FYR	LAU	BIOLBS	20
4	UGRD	FYR	LAU	ENGL-BA	8
5	UGRD	FYR	LAU	MATHBA	6

MINI COURSE IN PEOPLESOFT QUERY

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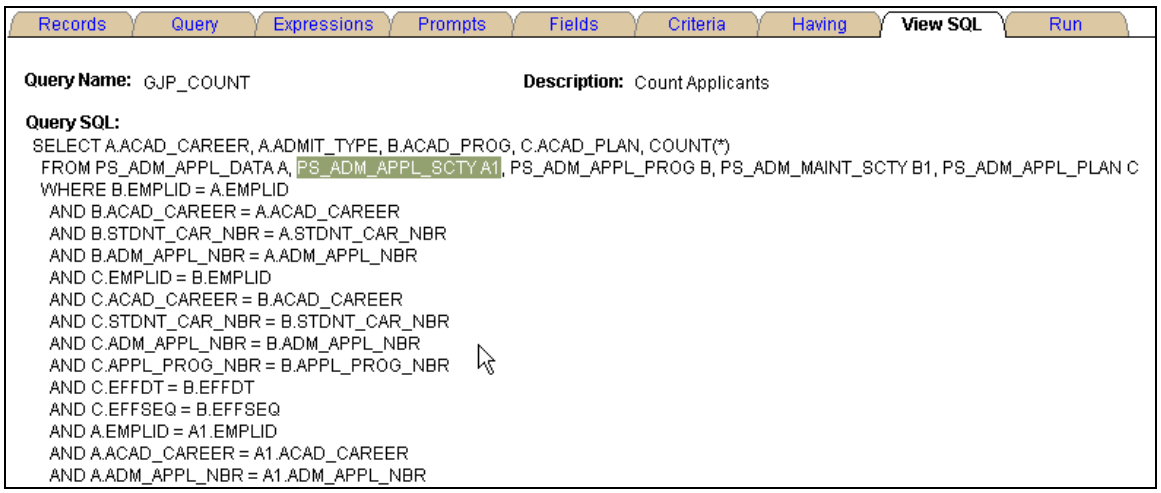
Advanced Topics

Query Security and the View SQL page

Generally, the security administrator will grant query access to your PeopleSoft permission list and assign query use properties such as the ability to write as well as run queries, creation of public queries, ability to run to excel, etc. The use of Distinct, Joins, Subqueries, Unions and Expressions can also be controlled as well as the Maximum number of joins and In Tree criteria. Access Groups are also defined for permission lists. This defines what tables in the database you can access through query. If someone writes a query that accesses tables that you don't have access to, you will not see the query definition to be able to open it.

PeopleSoft implements row level security, i.e. Career security, by maintaining tables (usually ending in SCTY) that control what rows in a table a given user can access. PeopleSoft query will include the SCTY table in your query automatically. Look at the View SQL tab for any of the applicant queries.



The A1 and B1 tables are for security and prevent the user from seeing rows of data they normally don't have access to. This way, the system office could write a public query, and everyone could run it and only see the data they have explicit security to access.

Download to Excel

Normally you can just click the Download to Excel link from the output page to send the query output to a Microsoft Excel spreadsheet. If this doesn't seem to be working for you, make sure you have Excel installed on your machine. Make sure you don't have browser pop-ups blocked in IE. (Tools – Pop-up Blocker – Pop-up Blocker Settings). IE comes with a default setting that also may cause these downloads not to work properly.

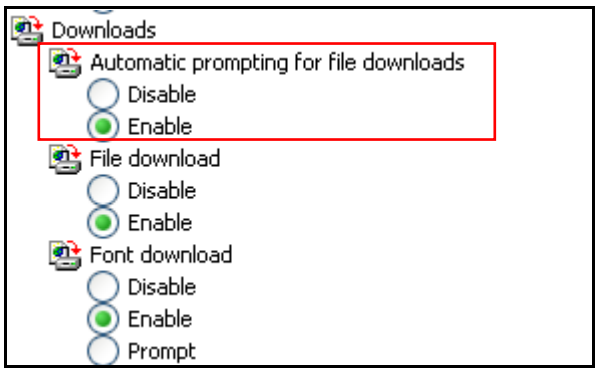
In the browser, go to Tools – Internet Options – Security tab and click 

Scroll down to the downloads section:

MINI COURSE IN PEOPLESOFT QUERY

By Gregory Patterson

Advanced Topics



Make sure "Automatic prompting for file downloads" is set to Enable.

Downloads of this type open Excel within an Internet Explorer window, which has limited functionality. It's usually easier to save the data as a normal Excel file, then format and work with that file. Firefox does this a bit differently, it lets you specify where to put the download file.

Useful Table Information

Once you have the mechanics of using PeopleSoft Query, the challenge is to figure out what tables to use. While the hierarchical record join function is a great help, you still need a starting point. PeopleSoft actually keeps definitions of components, pages, tables and fields in a set of tables. There is a query that when given a component name, returns a list of tables used. (CSTST database, UMS_RECORDS_BY_COMPONENT). To get the name of the component, hit Ctrl-J while viewing the component.

While this type of query is helpful, it is not 100% because PeopleSoft has the capability of using a record on a page that is defined as the page is being built, not pre-defined and stored. The query doesn't know about them. Version 8.9 makes heavy use of this related to the new person model.

Version 8.9 has and advanced search when you are looking for records that allows you to search by something other than the name.

MINI COURSE IN PEOPLESOFT QUERY

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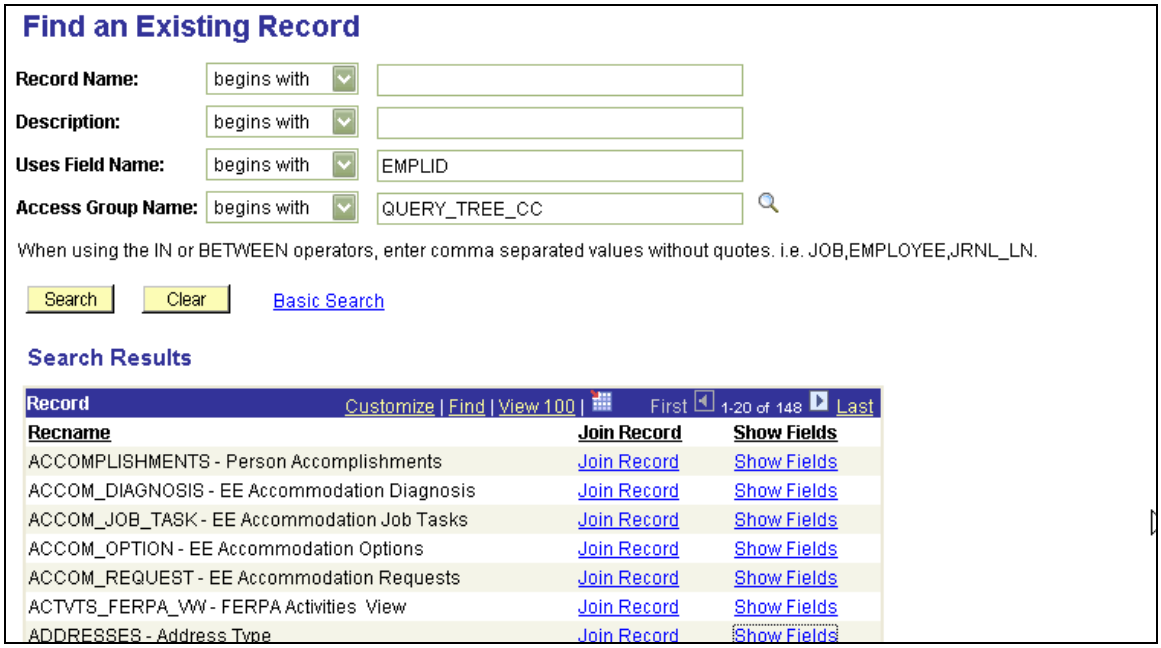
Advanced Topics



Special consideration must be given when reporting upon tables within the (version 8.9) core Person Model using PeopleSoft Query. All record definitions within the core Person Model are associated with HR-specific Query Security records to ensure row-level access consistency with the online application. Because the underlying department-based security model is not applicable to Campus Solutions customers in the context of SA/CR specific reporting, a number of alternate query views are provided for this purpose. The following table lists core Person Model base tables and their corresponding Campus Solutions specific query views:

Core Person Model Record	PS Query View for CS
ACCOMPLISHMENTS	SCC_ACCOMP_QVW
ACCOM_DIAGNOSIS	SCC_ACCOM_D_QVW
ACCOM_JOB_TASK	SCC_ACCOM_T_QVW
ACCOM_OPTION	SCC_ACCOM_O_QVW
ACCOM_REQUEST	SCC_ACCOM_R_QVW
ADDRESSES	ADDRESS_NPC_VW
AUDIOMETRIC_TST	SCC_AUDIO_T_QVW
CITIZENSHIP	SCC_CITIZEN_QVW
CITIZEN_PSSPRT	SCC_CITZN_P_QVW
DISABILITY	SCC_DISABLE_QVW
DIVERSITY	SCC_DIVERS_QVW
DIVERS_ETHNIC	SCC_DIV_ETH_QVW

MINI COURSE IN PEOPLESOFT QUERY

By Gregory Patterson

Advanced Topics

Core Person Model Record	PS Query View for CS
DRIVERS_LIC	SCC_DRIVERS_QVW
EMAIL_ADDRESSES	SCC_EMAIL_QVW
EMERGENCY_CNTCT	SCC_EMERG_C_QVW
EMERGENCY_PHONE	SCC_EMERG_P_QVW
EYE_EXAM	SCC_EYE_EXA_QVW
NAMES	SCC_NAMES_QVW
PERSON	PERSON_NPC_VW
PERS_DATA_EFFDT	SCC_PER_EFF_QVW
PERS_DATA_CAN	SCC_PDE_CAN_QVW
PERS_DATA_USA	SCC_PDE_USA_QVW
PERS_NID	SCC_PERS_NI_QVW
PERSON_PHONE	SCC_PERS_PH_QVW
PHYSICAL_EXAM	SCC_PHYS_EX_QVW
PUBLICATIONS	SCC_PUBLICA_QVW
RESPIRATORY_EXM	SCC_RESP_EX_QVW
VISA_PMT_DATA	SCC_VISA_P_QVW
VISA_PMT_SUPPRT	SCC_VISA_S_QVW

Here are some general guidelines for tables. This is subject to change.

Table Name	Description
Ends with _TBL	These are usually setup tables. Many are effective dated and contain descriptions. An example is the ACAD_PROG_TBL
Ends with _VW	These are views into one or more other tables. For query purposes, they are tables.
Ends with _LANG	These tables are for foreign language support. You will probably never need them in a query.
Ends with _SCTY	These are security tables. Query will attach them automatically as needed.
Ends with _SRCH	These are special views used to search for data prior to displaying a component. Not typically used in query.
Begins with ACAD_	Academic Structure, Student Records tables.
Begins with ADM_	Admissions, Recruiting tables
Begins with PERS	Has something to do with a Person.
Begins with PS	PeopleSoft application definition tables.
Begins with SAD_	Admissions test scores. New naming convention with 8.9
Begins with STDNT	Student Records data
Begins with SEV	SEVIS application
Begins with UM	University of Maine System created tables or views.
PERS_DATA_SA_VW	Has some basic personal data information without the HR security. Emplid, name, birthdate, sex. Joins PERSON, NAMES, PERS_DATA_EFFDT

MINI COURSE IN PEOPLESOFT QUERY

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Advanced Topics

Table Name	Description
ADM_APPL_PRG_VW	Joins ADM_APPL_DATA and ADM_APPL_PROG. I had to add it to the query security tree, developed for SQR use, but works fine with query.
ADM_MC_VW	Also joins ADM_APPL_DATA and ADM_APPL_PROG. Designed for use in Mass Change, but works fine with query.

When and When Not to use Query

When to use Query

- When you need some basic information ASAP.
- When you need a recurring report with detail information but no summary information.
- When you need a recurring report with summary information but no detail information

When not to use Query

When you find that you are outputting detail data to Excel and manually creating subtotals and other formulas. Okay the first time, and maybe a second time. But if you do it a third time, the report should be considered a regularly recurring report – write some specifications, assign the project to a developer and have them write an SQR for it.

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