Wage Records Technical Training
Casper, Wyoming
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Tony Glover's Presentations

Introduction to Transaction Analysis, Conceptual

Introduction to Transaction Analysis, Programming FoxPro / SQL

Introduction to Combining Driver's License and Wage Records Data

Introduction to Wage Records Editing

Introduction to Tenure, Experience, and the Levels of Analysis

Introduction to Combining Wage Records and Select OES Data to Estimate Occupational Turnover

Introduction to Transaction Analysis

Wage Records Technical Training
Casper, Wyoming
2/19/2003

Presented By

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Basic Transactions – Three Quarter Frame

Table 2.1: Four Mutually Exclusive Individual / Employer Transactions in the Reference Quarter (shaded area).

Turnover Category	Quarter Prior (Q-1)	Reference Quarter (Q0)	Quarter Subsequent (Q+1)
Entry (Hire)	O	A	A
Both (Hire and Exit)	O	A	O
Exit	A	A	O
Continuous	A	A	A

1) An Entry is the situation in which and individual is hired by an employer in a specified quarter and maintains that employment in the subsequent quarter.

2) The Both category is both a Hire and an Exit in a quarter and could be an individual that starts a job and quits or someone who is hired for a temporary position.

3) An Exit is an individual that was employed with an employer in the specified and prior quarters but no longer works for the employer in the subsequent quarter.

4) A Continuous is an individual maintains employment with Employer A for all quarters of interest.

Basic Transactions – Expanded Six Quarter Frame

Table 2.2: Six Mutually Exclusive Individual / Employer Transactions in the Reference Quarter (shaded area).

Variable	Turnover Category	Q-4	Q-3	Q-2	Q-1	Q0	Q+1
E-N	Entry Newhire	O	O	O	O	A	A
E-R	Entry Rehire	a	a	a	O	A	A
B-N	Both Newhire	O	O	O	O	A	O
B-R	Both Rehire	a	a	a	O	A	O
X	Exit	a	a	a	A	A	O
C	Continuous	a	a	a	A	A	A

1) An Entry Newhire is the same as an Entry with the exception that the individual had not worked for the employer in the last year (four consecutive quarters).

2) An Entry Rehire is the same as an Entry with the exception that the individual has worked for the employer for at least one quarter in the prior year, excluding the prior quarter.

3) A Both Newhire is the same as a Both with the exception that the individual had not worked for the employer in the last year (four consecutive quarters).

4) A Both Rehire is the same as a Both with the exception that the individual has worked for the employer for at least one quarter in the prior year, excluding the prior quarter.

Basic Transactions – Six Quarter Definitions and Hypothetical Pat

Table 2.3: Hypothetical Pat and Pat's Three Employers

	1995 Q1	Q2	Q3	Q4	1996 Q1	Q2	Q3	Q4	1997 Q1	Q2	Q3	Q4
A-OK Construction	🚹	🚹	🚹		🚹					🚹		
Transaction Category	E-N	C	X		B-R					B-N		
Dandy Do Construction			🚹	🚹			🚹	🚹	🚹	🚹		
Transaction Category			E-N	X			E-R	C	C	X		
A-Plus Retail Hardware								🚹	🚹	🚹	🚹	🚹
Transaction Category								E-N	C	C	C	X
Pat's Total Transactions	1	1	2	1	1		1	2	2	3	1	1

At this time we have conceptually introduced the six Transaction Categories. We end this part of Section II with an example using Hypothetical Pat. Pat represents one of the multitudes of individuals that have worked in Wyoming's Labor Market in the past. Table 2.3 shows Pat's employment history with three employers and the relevant Transaction Categories assigned to the relationships Pat had with these employers at each point in time. For all Hypothetical Pat examples to follow the beginning of our WR time span is 1992q1 and the end is 2002q2, so we know that Pat's first appearance in WR occurs with A-OK Construction in 1995q1 and Pat's last appearance is with A-Plus Retail Hardware in 1997q4.

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Basic Transactions – Six Quarter Definitions, Hypothetical Pat, and Next With / Previous With Employer Definitions

Table 2.4: Hypothetical Pat and Pat's Three Employers and the Combined Definitions

	1995				1996				1997			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A-OK Construction		🧍	🧍	🧍		🧍					🧍		
S-NW-E		1	1	2		5					0		
S-PW-E		0	1	1		2					5		
Transaction Category		E-N	C	X		B-R					B-N		
Dandy Do Construction				🧍	🧍			🧍	🧍	🧍	🧍		
S-NW-E				1	3			1	1	1	0		
S-PW-E				0	1			3	1	1	1		
Transaction Category				E-N	X			E-R	C	C	X		
A-Plus Retail Hardware								🧍	🧍	🧍	🧍	🧍	
S-NW-E								1	1	1	1	0	
S-PW-E								0	1	1	1	1	
Transaction Category								E-N	C	C	C	X	
Pat's Total Transactions	1	1	2	1	1		1	2	2	3	1	1	

S-NW-E – SSN, Next With, Employer = The number of quarters between the current quarter and the next quarter the SSN appears with the same employer. For example, Table 1 shows Hypothetical Pat working for A-OK construction in 1995q2 and 1995q3 and therefore S-NW-E for 1995q2 equals 1. Focusing on 1995q3 the value of S-NW-E equals 2 because Pat worked for A-OK in 1995q3 did not work for A-OK in 1995q4 and re-appears with A-OK in 1996q1. * Operationally S-NW-E = 0 in the last quarter Pat works with the employer.

S-PW-E – SSN, Previous With, Employer = The number of quarters between the current quarter and the previous quarter the SSN appears with the same employer. For example, Table 1 shows Hypothetical Pat working for A-OK construction in 1995q1 and 1995q2 and therefore **S-PW-E** for 1995q2 equals 1. Focusing on 1996q1 the value of **S-PW-E** equals 2 because Pat worked for A-OK in 1995q3 did not work for A-OK in 1995q4 and re-appears with A-OK in 1996q1. * Operationally S-PW-E = 0 in the first quarter Pat works with the employer.

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Basic Transactions – Six Logical Statements to Assign Transaction Categories Using Next With / Previous With Employer Values

Entry Newhire (E-N) occurs if the following statement is true:

(1)   (S-PW-E = 0 or S-PW-E > 4) and S-NW-E = 1

Pat either never worked for A-OK Construction or at least Pat has not worked there in the prior 4 quarters and Pat does work for them in the next quarter.

Entry Rehire (E-R) occurs if the following statement is true:

(2) S-PW-E > 1 and S-PW-E < 5 and S-NW-E = 1

Same as (1) with the exception that Pat has worked for A-OK within the last 4 quarters.

Both Newhire (B-N) occurs if the following statement is true:

(3) (S-PW-E = 0 or S-PW-E > 4) and S-NW-E <> 1

Pat either never worked for A-OK Construction or at least has not worked there in the prior 4 quarters and Pat does not work for them in the next quarter.

Both Rehire (B-R) occurs if the following statement is true:

(4) S-PW-E > 1 and S-PW-E < 5 and S-NW-E <> 1

Same as (3) with the exception that Pat has worked for A-OK within the last 4 quarters.

Continuous (C) occurs if the following statement is true:

(5) S-PW-E =1 and S-NW-E = 1

Pat worked for A-OK in the prior, current and subsequent quarters.

Exit (X) occurs if the following statement is true:

(6) S-PW-E =1 and S-NW-E <> 1

Pat worked for A-OK in the prior and current quarter but does not work for A-OK in the subsequent quarter.

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Basic Transactions – The Conceptual Applied to the Real Data Structure

Table 2.6: Hypothetical Pat and Pat's Actual Record Layout in Wage Records

ROW #	SSN	UI ACCOUNT	YEAR	QTR	WAGES	PERIOD	S-NW-E	S-PW-E	TRANSACTION CATEGORY
1	PAT	A-OK Construction	1995	1	1000	13	1	0	E-N
2	PAT	A-OK Construction	1995	2	1000	14	1	1	C
3	PAT	A-OK Construction	1995	3	750	15	2	1	X
4	PAT	A-OK Construction	1996	1	750	17	5	2	B-R
5	PAT	A-OK Construction	1997	2	250	22	0	5	B-N
6	PAT	Dandy Do Construction	1995	3	750	15	1	0	E-N
7	PAT	Dandy Do Construction	1995	4	750	16	3	1	X
8	PAT	Dandy Do Construction	1996	3	500	19	1	3	E-R
9	PAT	Dandy Do Construction	1996	4	250	20	1	1	C
10	PAT	Dandy Do Construction	1997	1	250	21	1	1	C
11	PAT	Dandy Do Construction	1997	2	250	22	0	1	X
13	PAT	A-Plus Hardware	1996	4	500	20	1	0	E-N
14	PAT	A-Plus Hardware	1997	1	500	21	1	1	C
15	PAT	A-Plus Hardware	1997	2	500	22	1	1	C
16	PAT	A-Plus Hardware	1997	3	500	23	1	1	C
17	PAT	A-Plus Hardware	1997	4	500	24	0	1	X

Hypothetical Pat provides a convenient way to display data with time beginning on the left and ending on the right which fits with many peoples perception of the universe. In reality Pat's records as recorded in WR are recorded vertically as in Table 2.6 and records for the quarters for which Pat did not work for the specified employer do not exist.

A review of Table 2.6 (which should be reviewed relative to Table 2.4) shows that we have added a column for Row Number and a column named Period which was not previously discussed. The first Row Number is simply included to assist you in tracking the discussion following the table. Period is a new variable that we add to our WR data and is simply a numeric representation of time (the Year and Quarter combined). For example our WR data begins in 1992q1 and the value of Period at that time equals 1, 1992q2 = 2, 1992q3 = 3…..1995q1 = 13 ….. 2002q2 = 42. Period allows us to easily calculate S-NW-E and S-PW-E in a large database such as WR that now consists of over 10,000,000 records.

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Programming Flow for Basic Transactions – FoxPro / SQL

Stage	Action	Foxpro	SQL Server
1	Assign Period Values	Sort File on Year, Qtr use Do Loop to assign Period	Query Unique Year, Qtr assign Period recombine with table
2	Assign S-PW-E and S-NW-E Values	Sort File on SSN, UI, Period use Do Loop to assign Period	Query with Order By statement, assign a record number field, query original table with original table shifted +1 record then -1 record maintaining SSN, UI, Period.
3	Assign Transaction Category	Do Loop Comparing S-PW-E and S-NW-E	Update Table / Set comparing S-PW-E and S-NW-E

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Programming Flow of Basic Transactions Stage 1

Foxpro

```
use working.dbf
sort to working2 on ssn /a, year /a, qtr /a
delete file working.dbf

close tables
delete file working.dbf
alter table working2;
                 add column period n(3)
delete file working2.bak

close tables
use working2.dbf
i = 1
go record 1
replace period with i
do while not eof()
          store year to y1
          store qtr to q1
          skip 1
          if year = y1 and qtr = q1
                     replace period with i
          endif
          if year <> y1 or qtr <> q1
                     i = i + 1
                     replace period with i
          endif
Enddo

rename working2.dbf to working.dbf
```

SQL Server 2000

```
select distinct [year], qtr
into year_qtr
from working
order by [year], qtr

go
alter table year_qtr
add period numeric(3)
identity(1,1)

go
select working.*, year_qtr.period
into working2
from working left outer join year_qtr
on working.[year] = year_qtr.[year]and working.qtr = year_qtr.qtr

go
drop table working
go
exec sp_rename 'working2', 'working'
```

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Programming Flow of Basic Transactions Stage 2a

Foxpro

```
sort to working3 on ssn /a, ui /a, period /a
close tables
delete file working2.dbf
alter table working3.dbf;
            add column s_nw_e n(3);
            add column s_pw_e n(3)
delete file working3.bak


use working3.dbf
go record 1
replace s_pw_e with 0
do while not eof()
            store ssn to s1
            store ui to u1
            store period to p1
            skip 1
            if ssn = s1 and ui = u1
                        replace s_pw_e with (period - p1)
            endif
            if ssn <> s1 or ui <> u1
                        replace s_pw_e with 0
            endif
enddo

close tables
use working3.dbf
go bottom
replace s_nw_e with 0
do while recno() <> 1
            store ssn to s1
            store ui to u1
            store period to p1
            skip -1
            if ssn = s1 and ui = u1
                        replace s_nw_e with (p1 - period)
            endif
            if ssn <> s1 or ui <> u1
                        replace s_nw_e with 0
            endif
Enddo
```

SQL Server 2000

```
select *
into working2
from working
order by ssn, ui, period

drop table working
exec sp_rename 'working2', 'working'

alter table working
add ssnuiord numeric(10)
identity(1,1)

select ssnuiord, ssn, ui, period
into tempshift
from working

select working.*, tempshift.ssn as ssn_p1, tempshift.ui as ui_p1, tempshift.period as
p_p1
into working2
from working left outer join tempshift
on working.ssnuiord = (tempshift.ssnuiord-1)

select working2.*, tempshift.ssn as ssn_m1, tempshift.ui as ui_m1, tempshift.period
as p_m1
into working3
from working2 left outer join tempshift
on working2.ssnuiord = (tempshift.ssnuiord+1)
order by working2.ssnuiord

drop table working
drop table working2
drop table tempshift
exec sp_rename 'working3', 'working'
```

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Programming Flow of Basic Transactions Stage 2b

Foxpro   SQL Server 2000

drop table working
drop table working2
drop table tempshift
exec sp_rename 'working3', 'working'

alter table working
add s_pw_e numeric(3)
alter table working
add s_nw_e numeric(3)

update working
set s_nw_e = p_p1-period
where ssn=ssn_p1 and ui=ui_p1

update working
set s_nw_e = 0
where ssn<>ssn_p1 or ui<>ui_p1

update working
set s_pw_e = period-p_m1
where ssn=ssn_m1 and ui=ui_m1

update working
set s_pw_e = 0
where ssn<>ssn_m1 or ui<>ui_m1

alter table working
drop column ui_m1
alter table working
drop column ui_p1
alter table working
drop column ssn_m1
alter table working
drop column ssn_p1
alter table working
drop column p_m1
alter table working
drop column p_p1

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Programming Flow of Basic Transactions Stage 3

Foxpro

```
alter table working3.dbf;
                add column tran c(3)
delete file working3.bak


close tables
use working3.dbf
go record 1
do while not eof()
                replace tran with ""
                if (s_pw_e = 0 or s_pw_e > 4) and s_nw_e = 1
                                replace tran with "E-N"
                endif
                if s_pw_e > 1 and s_pw_e < 5 and s_nw_e = 1
                                replace tran with "E-R"
                endif
                if (s_pw_e = 0 or s_pw_e > 4) and s_nw_e <> 1
                                replace tran with "B-N"
                endif
                if s_pw_e > 1 and s_pw_e < 5 and s_nw_e <> 1
                                replace tran with "B-R"
                endif
                if s_pw_e = 1 and s_nw_e = 1
                                replace tran with "C"
                endif
                if s_pw_e = 1 and s_nw_e <> 1
                                replace tran with "X"
                endif
                skip 1
enddo


close tables
rename working3.dbf to tran_base.dbf
```

SQL Server 2000

```
alter table working
add tran char(3)


update working
set tran = 'E-N'
where (s_pw_e=0 or s_pw_e>4) and s_nw_e=1

update working
set tran = 'E-R'
where s_pw_e>1 and s_pw_e<5 and s_nw_e=1

update working
set tran = 'B-N'
where (s_pw_e=0 or s_pw_e>4) and s_nw_e<>1

update working
set tran = 'B-R'
where s_pw_e>1 and s_pw_e<5 and s_nw_e<>1

update working
set tran = 'C'
where s_pw_e=1 and s_nw_e=1

update working
set tran = 'X'
where s_pw_e=1 and s_nw_e<>1

exec sp_rename 'working', 'tran_base'
```

Introduction to Combining Driver's License and Wage Records

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Driver's License Data - Know What You Have!!

Wage Records	DL Client Data	DL Operator Data
SSN	SSN	
Year	DOLCH	DOLCH
Qtr	MVID	MVID
UI	LASTNAME	OPERNO
Wages	FIRSTNAME	ISSUEDATE
	MDDLNAME	EXPIRDATE
	CLYTYPE	OPERCLASS
	ADDRESS1	ENDORS
	ADDRESS2	
	CITY	
	STATE	
	ZIP	
	DOB	
	SEX	
	AREACODE	
	PHONE	

Selected Elements from Driver's License Data

Table DL1: Example of Selected Driver's License Data Elements

ssn	year	qtr	dolch	lastname	firstname	address1	city	state	zip	dob	sex	phone
888888888	1996	4	1996/12/02	MAIDEN	JANE	166 COLUMBINE APT #4	CASPER	WY	82604	1971/10/12	F	235-8042
888888888	1998	1	1998/03/31	DOE	JANE	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1971/10/12	F	635-1271
888888888	1999	4	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
888888888	2002	3	2002/07/03	DOE	JANE	3100 SARATOGA ROAD	CASPER	WY	82604	1971/10/12	F	473-8716
999999999	1995	2	1995/06/13	DOE	JOHN	901 EAST 23RD STREET #1	CASPER	WY	82601	1967/08/17	M	235-7970
999999999	1998	1	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
999999999	2002	1	2002/01/29	DOE	JOHN	3100 SARATOGA ROAD	CASPER	WY	82604	1967/08/17	M	473-8716

Wage Records Corresponding to Driver's License SSNs

Table DL2: Example of Matching Wage Records Data Elements

ssn	year	qtr	ui	wages
888888888	1997	1	0071666007	3552
888888888	1997	2	0040114001	369
888888888	1997	2	0070774001	420
888888888	1997	2	0071666007	1184
888888888	1998	2	0023936000	2028
888888888	1998	3	0023936000	2060
888888888	1999	1	0002479001	293
888888888	1999	2	0002479001	1995
888888888	1999	3	0002479001	2213
888888888	1999	4	0002479001	2607
888888888	2000	1	0002479001	2411
888888888	2000	2	0002479001	2472
888888888	2000	3	0002479001	2456
888888888	2000	4	0002479001	3149
888888888	2001	1	0002479001	2956
888888888	2001	2	0002479001	3259
888888888	2001	3	0002479001	1712
999999999	1997	1	0024156001	3949
999999999	1997	2	0024156001	126
999999999	1997	2	0981646009	8371
999999999	1997	3	0981646009	8136
999999999	1997	4	0981646009	7371
999999999	1998	1	0981646009	7273
999999999	1998	2	0981646009	7500
999999999	1998	3	0981646009	7586
999999999	1998	4	0981607005	6263
999999999	1999	1	0981607005	6057
999999999	1999	2	0981607005	7212
999999999	1999	3	0981607005	8850
999999999	1999	4	0981607005	9425
999999999	2000	1	0981607005	10994
999999999	2000	2	0981607005	10637
999999999	2000	3	0981607005	9369
999999999	2000	4	0981607005	10718
999999999	2001	1	0981607005	9555
999999999	2001	2	0981607005	9831

Wage Records and Driver's License in Series

Table DL3: Example of Selected Driver's License Data Elements and Matching Wage Records Data Elements Combined in Time Series

source	ssn	year	qtr	ui	wages	dolch	lastname	firstname	address1	city	state	zip	dob	sex	phone
DrivLicens	888888888	1996	4		0	1996/12/02	MAIDEN	JANE	166 COLUMBINE APT #4	CASPER	WY	82604	1971/10/12	F	235-8042
WageRecord	888888888	1996	4	0071666007	3550										
WageRecord	888888888	1997	1	0071666007	3552										
WageRecord	888888888	1997	2	0040114001	369										
WageRecord	888888888	1997	2	0070774001	420										
WageRecord	888888888	1997	2	0071666007	1184										
DrivLicens	888888888	1998	1		0	1998/03/31	DOE	JANE	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1971/10/12	F	635-1271
WageRecord	888888888	1998	2	0023936000	2028										
WageRecord	888888888	1998	3	0023936000	2060										
WageRecord	888888888	1999	1	0002479001	293										
WageRecord	888888888	1999	2	0002479001	1995										
WageRecord	888888888	1999	3	0002479001	2213										
DrivLicens	888888888	1999	4		0	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	888888888	1999	4	0002479001	2607										
WageRecord	888888888	2000	1	0002479001	2411										
WageRecord	888888888	2000	2	0002479001	2472										
WageRecord	888888888	2000	3	0002479001	2456										
WageRecord	888888888	2000	4	0002479001	3149										
WageRecord	888888888	2001	1	0002479001	2956										
WageRecord	888888888	2001	2	0002479001	3259										
WageRecord	888888888	2001	3	0002479001	1712										
DrivLicens	888888888	2002	3		0	2002/07/03	DOE	JANE	3100 SARATOGA ROAD	CASPER	WY	82604	1971/10/12	F	473-8716
DrivLicens	999999999	1995	2		0	1995/06/13	DOE	JOHN	901 EAST 23RD STREET #1	CASPER	WY	82601	1967/08/17	M	235-7970
WageRecord	999999999	1995	2	0024156001	3945										
WageRecord	999999999	1995	3	0024156001	3515										
WageRecord	999999999	1995	4	0024156001	3201										
WageRecord	999999999	1996	1	0024156001	2659										
WageRecord	999999999	1996	2	0024156001	3695										
WageRecord	999999999	1996	2	0981003007	270										
WageRecord	999999999	1996	3	0024156001	3837										
WageRecord	999999999	1996	4	0024156001	3246										
WageRecord	999999999	1997	1	0024156001	3949										
WageRecord	999999999	1997	2	0024156001	126										
WageRecord	999999999	1997	2	0981646009	8371										
WageRecord	999999999	1997	3	0981646009	8136										
WageRecord	999999999	1997	4	0981646009	7371										

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Wage Records with Data Elements Filled with Driver's License Data

Table DL4: Example of Matching Wage Records Data Elements Filled with Driver's License Data

source	ssn	year	qtr	ui	wages	dolch	lastname	firstname	address1	city	state	zip	dob	sex	phone
WageRecord	888888888	1997	1	0071666007	3552	1996/12/02	MAIDEN	JANE	166 COLUMBINE APT #4	CASPER	WY	82604	1971/10/12	F	235-8042
WageRecord	888888888	1997	2	0040114001	369	1996/12/02	MAIDEN	JANE	166 COLUMBINE APT #4	CASPER	WY	82604	1971/10/12	F	235-8042
WageRecord	888888888	1997	2	0070774001	420	1996/12/02	MAIDEN	JANE	166 COLUMBINE APT #4	CASPER	WY	82604	1971/10/12	F	235-8042
WageRecord	888888888	1997	1	0071666007	1184	1996/12/02	MAIDEN	JANE	166 COLUMBINE APT #4	CASPER	WY	82604	1971/10/12	F	235-8042
WageRecord	888888888	1998	2	0023936000	2028	1998/03/31	DOE	JANE	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1971/10/12	F	635-1271
WageRecord	888888888	1998	3	0023936000	2060	1998/03/31	DOE	JANE	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1971/10/12	F	635-1271
WageRecord	888888888	1999	1	0002479001	293	1998/03/31	DOE	JANE	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1971/10/12	F	635-1271
WageRecord	888888888	1999	2	0002479001	1995	1998/03/31	DOE	JANE	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1971/10/12	F	635-1271
WageRecord	888888888	1999	3	0002479001	2213	1998/03/31	DOE	JANE	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1971/10/12	F	635-1271
WageRecord	888888888	1999	4	0002479001	2607	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	888888888	2000	1	0002479001	2411	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	888888888	2000	2	0002479001	2472	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	888888888	2000	3	0002479001	2456	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	888888888	2000	4	0002479001	3149	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	888888888	2001	1	0002479001	2956	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	888888888	2001	2	0002479001	3259	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	888888888	2001	3	0002479001	1712	1999/10/29	DOE	JANE	751 WEST 53RD ST	CASPER	WY	82601	1971/10/12	F	473-8716
WageRecord	999999999	1997	1	0024156001	3949	1995/06/13	DOE	JOHN	901 EAST 23RD STREET #1	CASPER	WY	82601	1967/08/17	M	235-7970
WageRecord	999999999	1997	2	0024156001	126	1995/06/13	DOE	JOHN	901 EAST 23RD STREET #1	CASPER	WY	82601	1967/08/17	M	235-7970
WageRecord	999999999	1997	2	0981646009	8371	1995/06/13	DOE	JOHN	901 EAST 23RD STREET #1	CASPER	WY	82601	1967/08/17	M	235-7970
WageRecord	999999999	1997	3	0981646009	8136	1995/06/13	DOE	JOHN	901 EAST 23RD STREET #1	CASPER	WY	82601	1967/08/17	M	235-7970
WageRecord	999999999	1997	4	0981646009	7371	1995/06/13	DOE	JOHN	901 EAST 23RD STREET #1	CASPER	WY	82601	1967/08/17	M	235-7970
WageRecord	999999999	1998	1	0981646009	7273	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	1998	2	0981646009	7500	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	1998	3	0981646009	7586	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	1998	4	0981607005	6263	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	1999	1	0981607005	6057	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	1999	2	0981607005	7212	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	1999	3	0981607005	8850	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	1999	4	0981607005	9425	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	2000	1	0981607005	10994	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	2000	2	0981607005	10637	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	2000	3	0981607005	9369	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	2000	4	0981607005	10718	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	2001	1	0981607005	9555	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271
WageRecord	999999999	2001	2	0981607005	9831	1998/03/31	DOE	JOHN	2750 OLIVE DRIVE	CHEYENNE	WY	82001	1967/08/17	M	635-1271

Introduction to Wage Records Editing

Wage Records Technical Training
Casper, Wyoming
2/19/2003

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Outline of Proposed Wage Records Editing Stages

Stage 1 Edits **(Completed)**
> **Duplicate Report Records**
> **Zero Filled SSN, UI Account, or Wages in Wage Records**

Stage 2 Edits **(Completed)**
> **Flagging Abnormal UI Account Reports and Significance Testing**

Stage 3 Edits **(Completed)**
> **Flag Verification with Micro Level Data**

Stage 4 Edits
> **Flagging Abnormal SSN Behavior and Significance Testing**

Stage 5 Edits – Errors Associated with Additional Data Sets
> **Missing SIC, NAICS and Ownership Values (ES-202)**
> **Demographic Data Errors (Drivers License)**

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Stage 1 Edit Examples

Table 8.1: Stage 1 Errors

ROW NUMBER	SSN	YEAR	QTR	UI ACCOUNT	WAGES
Zero Filled Errors or Errors of Omission					
1a	000000000	1995	2	7777777777	1000
1b	999999999	1995	2	0000000000	1000
1c	999999999	1995	2	7777777777	0
Duplicate Reporting Error – Same SSN, UI Account, Year, Qtr, and Wages					
2a	999999999	1995	2	7777777777	1000
2b	999999999	1995	2	7777777777	1000
2c	999999999	1995	2	7777777777	1000
Duplicate Reporting Error – Same SSN, UI Account, Year, Qtr, and Different Wages					
3a	999999999	1995	2	7777777777	750
3b	999999999	1995	2	7777777777	250
3c	999999999	1995	2	7777777777	1000

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Stage 2 Definitions

Notes on Preliminary Wage Records Editing Methodology Under Development in Wyoming

Significance Testing uses the historic aggregate employer account data to determine outliers in a given year and quarter at the employer account level. For example, an employer account would be flagged that reports a total of 5 SSNs in Wage Records for 2001q2, if the employer account historically reported 50 SSNs in each of the previous 20 quarters. For the examples in this packet a two tailed .05 (5 %) significance level was used. The threshold statistic

Significance C	Description
na	The employer account had fewer than four quarters significance not available
no	Not significant at the .05 percent level, the observation was within normal behavior
no(m)	Not significant at the .05 percent level, the observation was within normal behavior, even with a quarter of 0 total transactions/total wages
yes-	Significant at the .05 percent level, the observation was outside normal behavior
yes-(m)	Significant at the .05 percent level, the observation was outside normal behavior and the quarter had 0 total transactions/total wages

The concepts and the methodology discussed in these tables will be covered in more detail in the forthcoming "An Introduction to Wage Records Applications, Section 8 Wage Records Editing Methods" Wyoming Department of Employment, Research and Planning.

Stage 2 Edit Example 1

Table 2a: Example of Historic Profile of an Employer Account to Measure Deviation from Normal Reporting
Low Reporting 1999q1, 2001q4 to 2002q2 and Missing Data Likely 2002q3

Employer Account	Year	Qtr	Total Wages Paid	Total Transactions	Average Transactions	Average Total Wage	Current Qtrs t Score for Number of Transactions	Current Qtrs t Score for Total Wages	Is Transaction t Score Significant at .05	Is Total Wage t Score Significant at .05
999999996	1997	1	1,670,889	452	450	1,409,385	0.06	3.32	no	no
999999996	1997	2	1,807,078	507	450	1,409,385	2.31	5.05	no	no
999999996	1997	3	1,527,653	493	450	1,409,385	1.73	1.50	no	no
999999996	1997	4	1,805,086	471	450	1,409,385	0.84	5.03	no	no
999999996	1998	1	1,768,658	434	450	1,409,385	-0.67	4.56	no	no
999999996	1998	2	1,825,680	519	450	1,409,385	2.79	5.29	no	no
999999996	1998	3	1,781,953	554	450	1,409,385	4.22	4.73	no	no
999999996	1998	4	1,805,148	518	450	1,409,385	2.75	5.03	no	no
999999996	1999	1	14,105	5	450	1,409,385	-18.16	-17.72	yes-	yes-
999999996	1999	2	1,471,213	487	450	1,409,385	1.49	0.79	no	no
999999996	1999	3	1,355,752	503	450	1,409,385	2.14	-0.68	no	no
999999996	1999	4	1,711,752	490	450	1,409,385	1.61	3.84	no	no
999999996	2000	1	1,576,112	462	450	1,409,385	0.47	2.12	no	no
999999996	2000	2	1,446,679	495	450	1,409,385	1.82	0.47	no	no
999999996	2000	3	1,625,171	521	450	1,409,385	2.88	2.74	no	no
999999996	2000	4	1,307,998	478	450	1,409,385	1.12	-1.29	no	no
999999996	2001	1	1,545,094	481	450	1,409,385	1.25	1.72	no	no
999999996	2001	2	1,327,582	517	450	1,409,385	2.71	-1.04	no	no
999999996	2001	3	1,696,384	538	450	1,409,385	3.57	3.65	no	no
999999996	2001	4	16,840	5	450	1,409,385	-18.16	-17.69	yes-	yes-
999999996	2002	1	16,844	5	450	1,409,385	-18.16	-17.69	yes-	yes-
999999996	2002	2	3,627	2	450	1,409,385	-18.28	-17.85	yes-	yes-

Stage 2 Edit Example 2

Table 2b: Example of Historic Profile of an Employer Account to Measure Deviation from Normal Reporting
Low Reporting 1996q4, and 2001q1

Employer Account	Year	Qtr	Total Wages Paid	Total Transactions	Average Transactions	Average Total Wage	Current Qtrs t Score for Number of Transactions	Current Qtrs t Score for Total Wages	Is Transaction t Score Significant at .05	Is Total Wage t Score Significant at .05
999999997	1996	4	47,576	14	419	1,045,716	-18.07	-15.21	yes-	yes-
999999997	1997	1	846,138	290	419	1,045,716	-5.75	-3.04	no	no
999999997	1997	2	964,181	351	419	1,045,716	-3.03	-1.24	no	no
999999997	1997	3	969,023	373	419	1,045,716	-2.05	-1.17	no	no
999999997	1997	4	1,054,926	385	419	1,045,716	-1.51	0.14	no	no
999999997	1998	1	1,046,639	375	419	1,045,716	-1.96	0.01	no	no
999999997	1998	2	1,168,280	453	419	1,045,716	1.52	1.87	no	no
999999997	1998	3	1,147,046	490	419	1,045,716	3.17	1.54	no	no
999999997	1998	4	1,200,174	422	419	1,045,716	0.14	2.35	no	no
999999997	1999	1	1,033,580	387	419	1,045,716	-1.43	-0.18	no	no
999999997	1999	2	1,343,744	560	419	1,045,716	6.30	4.54	no	no
999999997	1999	3	1,552,145	619	419	1,045,716	8.93	7.72	no	no
999999997	1999	4	1,319,086	497	419	1,045,716	3.48	4.17	no	no
999999997	2000	1	24,746	6	419	1,045,716	-18.43	-15.56	yes-	yes-
999999997	2000	2	1,435,474	485	419	1,045,716	2.95	5.94	no	no
999999997	2000	3	1,605,965	549	419	1,045,716	5.81	8.54	no	no
999999997	2000	4	1,405,158	483	419	1,045,716	2.86	5.48	no	no
999999997	2001	1	1,471,044	455	419	1,045,716	1.61	6.48	no	no
999999997	2001	2	1,334,612	505	419	1,045,716	3.84	4.40	no	no
999999997	2001	3	1,787,493	681	419	1,045,716	11.70	11.30	no	no
999999997	2001	4	1,672,912	587	419	1,045,716	7.50	9.56	no	no
999999997	2002	1	1,754,254	564	419	1,045,716	6.47	10.80	no	no
999999997	2002	2	1,549,221	581	419	1,045,716	7.23	7.67	no	no

Stage 2 Edit Example 3

Table 2c: Example of Historic Profile of an Employer Account to Measure Deviation from Normal Reporting
Employer Account with Highly Seasonal Activity, Including Quarters of Non-Reporting, That Does Not Meet the Significance Threshold

Employer Account	Year	Qtr	Total Wages Paid	Total Transactions	Average Transactions	Average Total Wage	Current Qtrs t Score for Number of Transactions	Current Qtrs t Score for Total Wages	Is Transaction t Score Significant at .05	Is Total Wage t Score Significant at .05
999999998	1997	1	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	1997	2	1,010	2	1	474	3.84	4.65	no	no
999999998	1997	3	1,129	3	1	474	8.69	5.68	no	no
999999998	1997	4	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	1998	1	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	1998	2	1,115	3	1	474	8.69	5.56	no	no
999999998	1998	3	1,337	2	1	474	3.84	7.48	no	no
999999998	1998	4	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	1999	1	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	1999	2	748	3	1	474	8.69	2.38	no	no
999999998	1999	3	841	2	1	474	3.84	3.18	no	no
999999998	1999	4	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	2000	1	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	2000	2	388	1	1	474	-1.02	-0.75	no	no
999999998	2000	3	925	3	1	474	8.69	3.91	no	no
999999998	2000	4	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	2001	1	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	2001	2	241	2	1	474	3.84	-2.02	no	no
999999998	2001	3	1,243	2	1	474	3.84	6.67	no	no
999999998	2001	4	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	2002	1	0	0	1	474	-5.87	-4.11	no(m)	no(m)
999999998	2002	2	1,995	3	1	474	8.69	13.18	no	no

Stage 2 Edit Example 4

Table 2d: Example of Historic Profile of an Employer Account to Measure Deviation from Normal Reporting
Wage Bonuses 200q2, 2000q4, and Likely in 2001q4

Employer Account	Year	Qtr	Total Wages Paid	Total Transactions	Average Transactions	Average Total Wage	Current Qtrs t Score for Number of Transactions	Current Qtrs t Score for Total Wages	Is Transaction t Score Significant at .05	Is Total Wage t Score Significant at .05
999999995	1997	1	480,898	15	16	388,091	-0.51	0.81	no	no
999999995	1997	2	230,084	20	16	388,091	1.91	-1.38	no	no
999999995	1997	3	278,472	24	16	388,091	3.85	-0.96	no	no
999999995	1997	4	422,213	23	16	388,091	3.36	0.30	no	no
999999995	1998	1	305,388	22	16	388,091	2.88	-0.72	no	no
999999995	1998	2	376,016	27	16	388,091	5.30	-0.11	no	no
999999995	1998	3	379,722	28	16	388,091	5.78	-0.07	no	no
999999995	1998	4	438,485	28	16	388,091	5.78	0.44	no	no
999999995	1999	1	527,217	41	16	388,091	12.08	1.21	no	no
999999995	1999	2	537,670	40	16	388,091	11.59	1.31	no	no
999999995	1999	3	625,400	43	16	388,091	13.04	2.07	no	no
999999995	1999	4	958,932	45	16	388,091	14.01	4.98	yes+	no
999999995	2000	1	772,982	47	16	388,091	14.98	3.36	yes+	no
999999995	2000	2	1,977,887	44	16	388,091	13.53	13.88	yes+	yes+
999999995	2000	3	181,467	11	16	388,091	-2.44	-1.80	no	no
999999995	2000	4	4,441,129	15	16	388,091	-0.51	35.39	no	yes+
999999995	2001	1	224,797	14	16	388,091	-0.99	-1.43	no	no
999999995	2001	2	241,681	17	16	388,091	0.46	-1.28	no	no
999999995	2001	3	264,781	17	16	388,091	0.46	-1.08	no	no
999999995	2001	4	1,160,528	16	16	388,091	-0.02	6.74	no	no
999999995	2002	1	21,489	3	16	388,091	-6.32	-3.20	no	no
999999995	2002	2	49,525	1	16	388,091	-7.28	-2.96	no	no

Stage 2 Edit Summary Statistics

Table 3: Summary Statistics of Employer Accounts by Significance in the Number of Total Transactions

Year	Qtr	Total Accounts	N/A	No	Significance No (Missing Quarter of Data)	Yes Positive	Yes Negative	Yes Negative (Missing Quarter of Data)
1997	1	16,613	155	14,626	1,298	198	155	181
1997	2	16,847	212	15,174	848	378	100	135
1997	3	17,009	283	15,273	744	472	110	127
1997	4	16,992	269	15,452	736	302	116	117
1998	1	16,889	202	14,837	1,259	208	151	232
1998	2	17,164	261	15,540	787	366	104	106
1998	3	17,208	278	15,467	718	529	109	107
1998	4	17,135	276	15,495	773	341	122	128
1999	1	17,043	197	14,822	1,271	215	199	339
1999	2	17,270	232	15,501	794	363	131	249
1999	3	17,353	247	15,728	662	520	112	84
1999	4	17,390	257	15,841	713	325	146	108
2000	1	17,376	216	15,461	1,146	250	145	158
2000	2	17,621	246	15,894	764	435	126	156
2000	3	17,688	255	15,997	674	510	108	144
2000	4	17,741	237	16,220	663	332	136	153
2001	1	17,655	220	15,619	1,157	258	174	227
2001	2	17,941	310	16,172	652	525	136	146
2001	3	18,002	336	16,117	573	717	122	137
2001	4	17,847	334	16,027	581	424	175	306
2002	1	17,396	755	15,078	831	359	175	198
2002	2	17,370	1,254	14,682	328	689	163	254
2002	3	16,269	1,531	13,606	0	983	149	0

Followup Likely

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Stage 3 Edit Verification Summary Statistics

Table 4: Stage 3 Micro Level Verification of Low and Missing Data Reports

year	qtr	yes-Low Report Accounts	Corresponding SSN	yes-(m)Missing Account	Corresponding SSN	Total Accounts	Total SSN
1997	1	78	2087	153	1654	231	3741
1997	2	52	1052	114	1060	166	2112
1997	3	54	660	108	1059	162	1719
1997	4	60	1034	95	604	155	1638
1998	1	78	1557	198	907	276	2464
1998	2	55	1258	92	543	147	1801
1998	3	66	1087	91	429	157	1516
1998	4	74	2403	105	933	179	3336
1999	1	122	3655	309	3714	431	7369
1999	2	81	2407	226	1871	307	4278
1999	3	70	3872	62	457	132	4329
1999	4	86	1950	82	739	168	2689
2000	1	72	1896	128	713	200	2609
2000	2	76	1277	139	2193	215	3470
2000	3	69	900	123	1238	192	2138
2000	4	79	960	131	1678	210	2638
2001	1	95	1109	197	2324	292	3433
2001	2	90	1456	128	2289	218	3745
2001	3	85	1249	118	1016	203	2265
2001	4	129	3634	280	3723	409	7357
2002	1	129	3351	166	1953	295	5304
2002	2	141	5276	240	2840	381	8116
2002	3	147	1898	2	17	149	1915

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Introduction to Tenure, Experience and Level of Analysis

**Wage Records Technical Training
Casper, Wyoming
2/20/2003**

Presented By

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Tenure, Experience and Level of Analysis

Hypothetical Pat Tenure, Experience, and Levels of Analysis

	1995				1996				1997			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A-OK Construction												
Tenure with A-OK	1	2	3							1		
Experience with A-OK	1	2	3							4		
Dandy Do Construction												
Tenure with Dandy Do			1	2			1	2	3	4		
Experience with Dandy Do			1	2			3	4	5	6		
Hypothetical Pat's Tenure and Experience with the Construction Industry												
Tenure with Industry	1	2	3	4			1	2	3	4		
Experience with Industry	1	2	3	4			5	6	7	8		
A-Plus Retail Hardware												
Tenure with A-Plus								1	2	3	4	5
Experience with A-Plus								1	2	3	4	5
Hypothetical Pat's Tenure and Experience with the Retail Trade Industry												
Tenure with Industry								1	2	3	4	5
Experience with Industry								1	2	3	4	5
Hypothetical Pat's Tenure and Experience with the Market												
Tenure with Market	1	2	3	4			1	2	3	4	5	6
Experience with Market	1	2	3	4			5	6	7	8	9	10

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Introduction to Combining Wage Records and Select OES Data to Calculate Occupational Turnover

**Wage Records Technical Training
Casper, Wyoming
2/20/2003**

Presented By

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MDAR Occupational Turnover Project
FoxPro Query Designer – Query 1 Fields Tab

MDAR Occupational Turnover Project
FoxPro Query Designer – Query 1 Filter Tab

MDAR Occupational Turnover Project
FoxPro Query Designer – Query 1 Group By Tab

MDAR Occupational Turnover Project
FoxPro Query Designer – Selecting Query 1 Output Settings

MDAR Occupational Turnover Project
FoxPro Query Designer – Selecting Query 1 Output Type

MDAR Occupational Turnover Project
FoxPro Query Designer – Query 1 Output Table Name and Destination

MDAR Occupational Turnover Project
FoxPro Query Designer – Run Query 1

MDAR Occupational Turnover Project
FoxPro SQL Language

*Query 1
SELECT substr(sic,1,2) **AS** sic, **SUBSTR**(tran,1,1) **AS** tran,;
   tran_base.year, tran_base.qtr, **CNT**(ssn) as n;
FROM tran_base;
WHERE tran_base.year = 2001;
GROUP BY 1, 2, Tran_base.year, Tran_base.qtr;
INTO TABLE tran_2001.dbf

*Query 2
SELECT Ins21stp.use_sic, **SUBSTR**(occ_code,1,2) **AS**
occ_code, **SUM**(raw_emp) **AS** oes_emp;
FROM ins21stp;
GROUP BY Ins21stp.use_sic, 2;
INTO TABLE oes_temp1.dbf

*Query 3
SELECT Oes_temp1.use_sic, **SUM**(oes_emp) **AS** oes_temp;
FROM oes_temp1;
GROUP BY Oes_temp1.use_sic;
INTO TABLE oes_temp2.dbf

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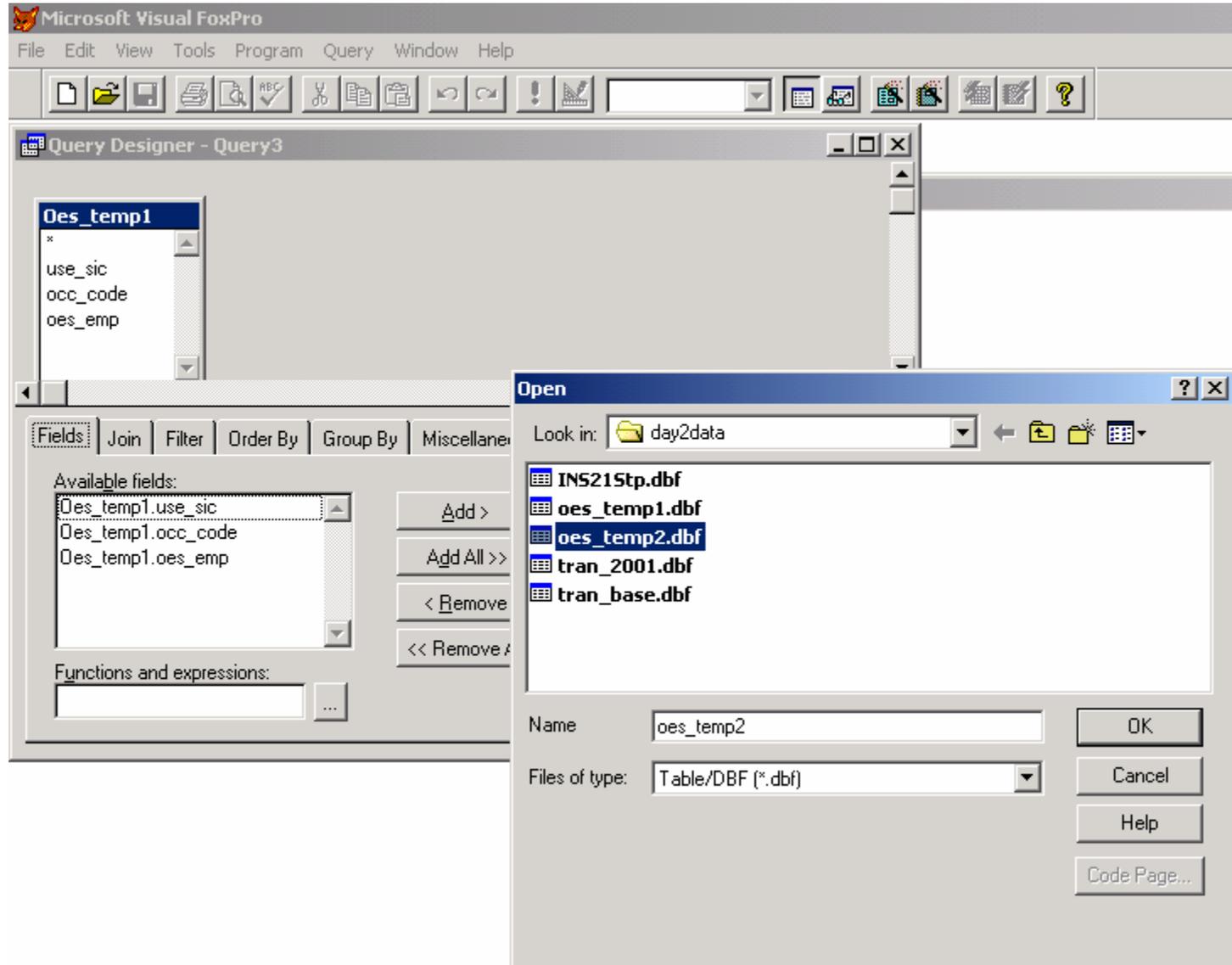# FoxPro Query Designer – Select First Table for Query 4
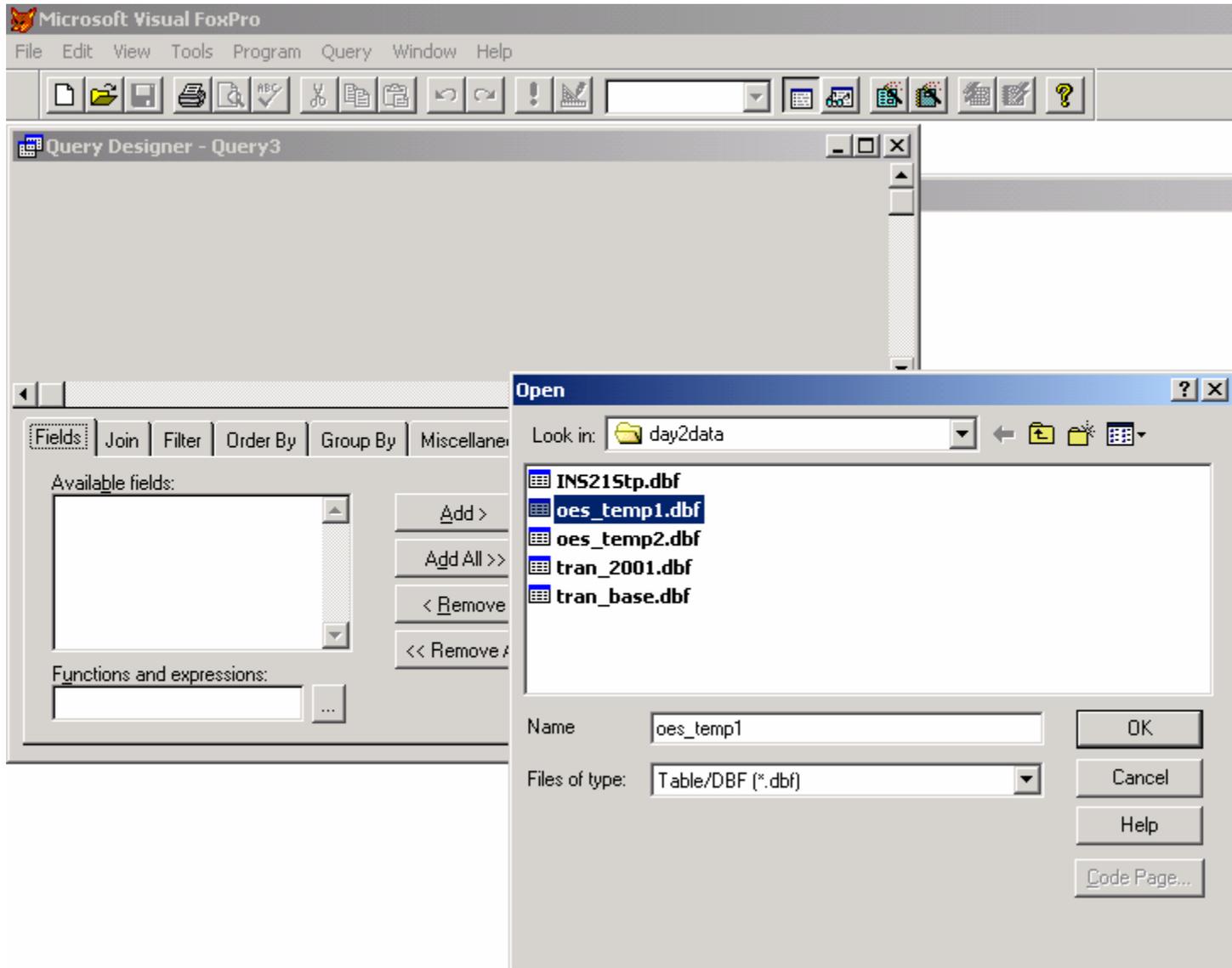
MDAR Occupational Turnover Project
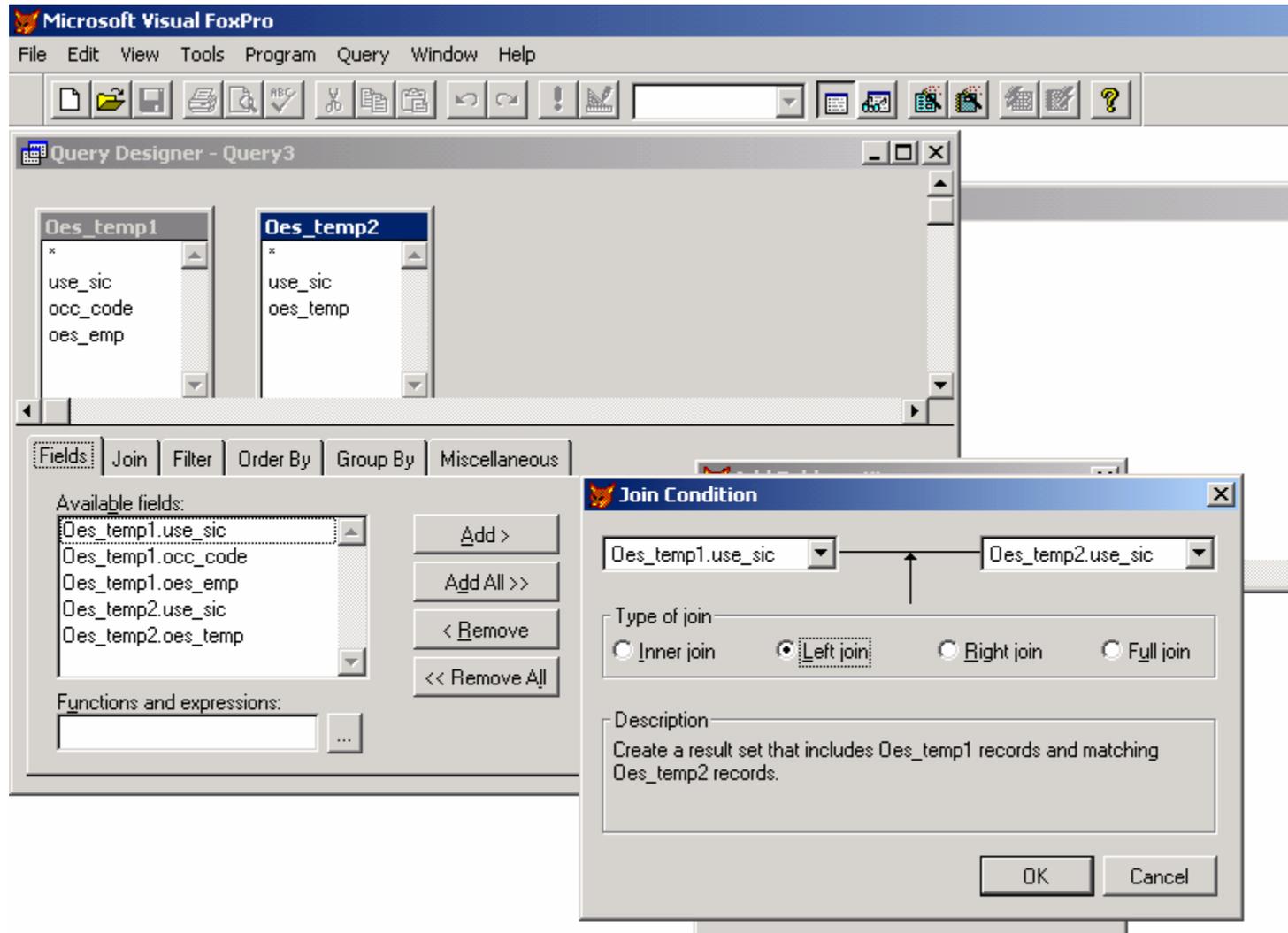## FoxPro Query Designer – Add Other Table for Query 4
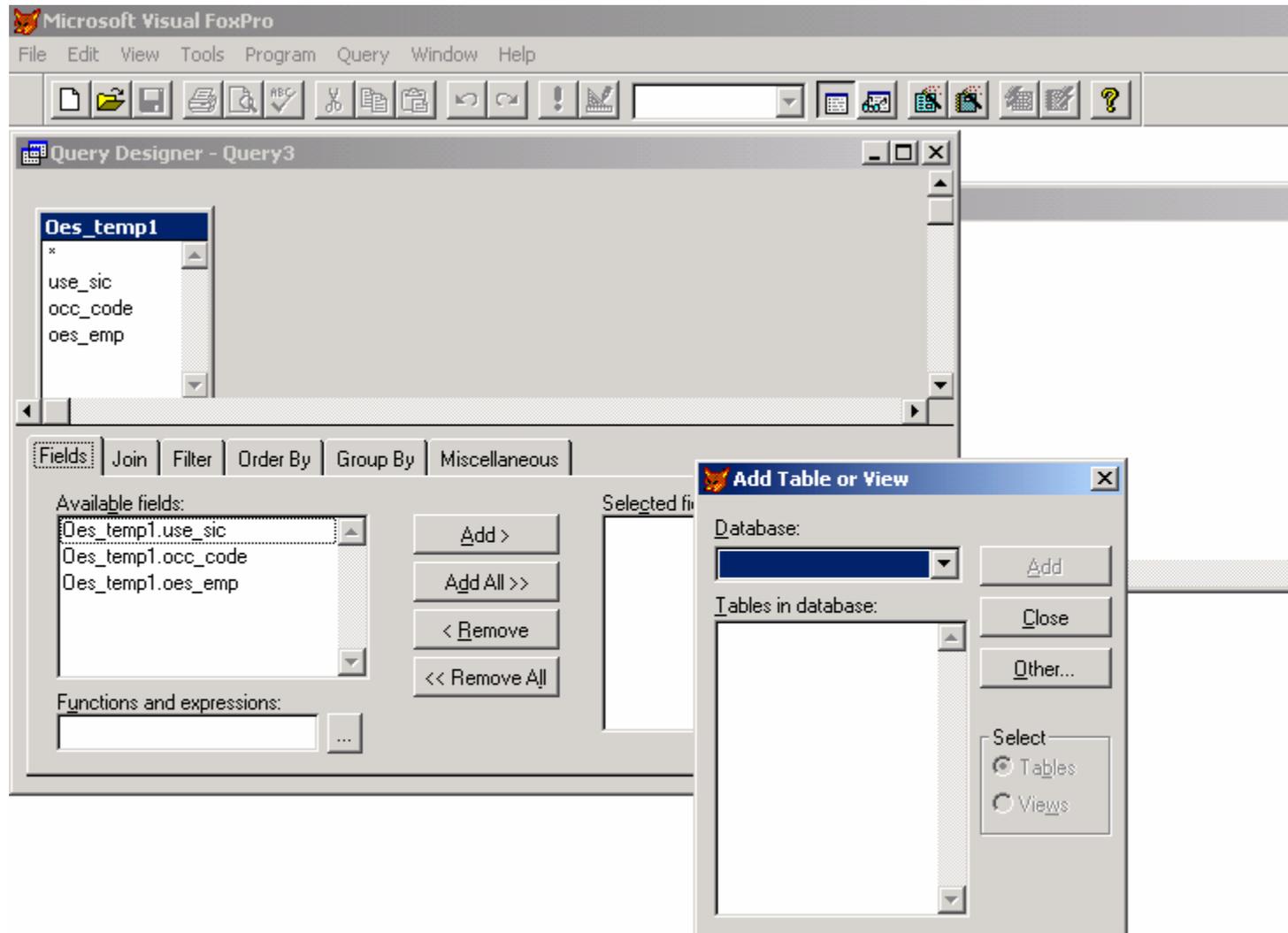
MDAR Occupational Turnover Project
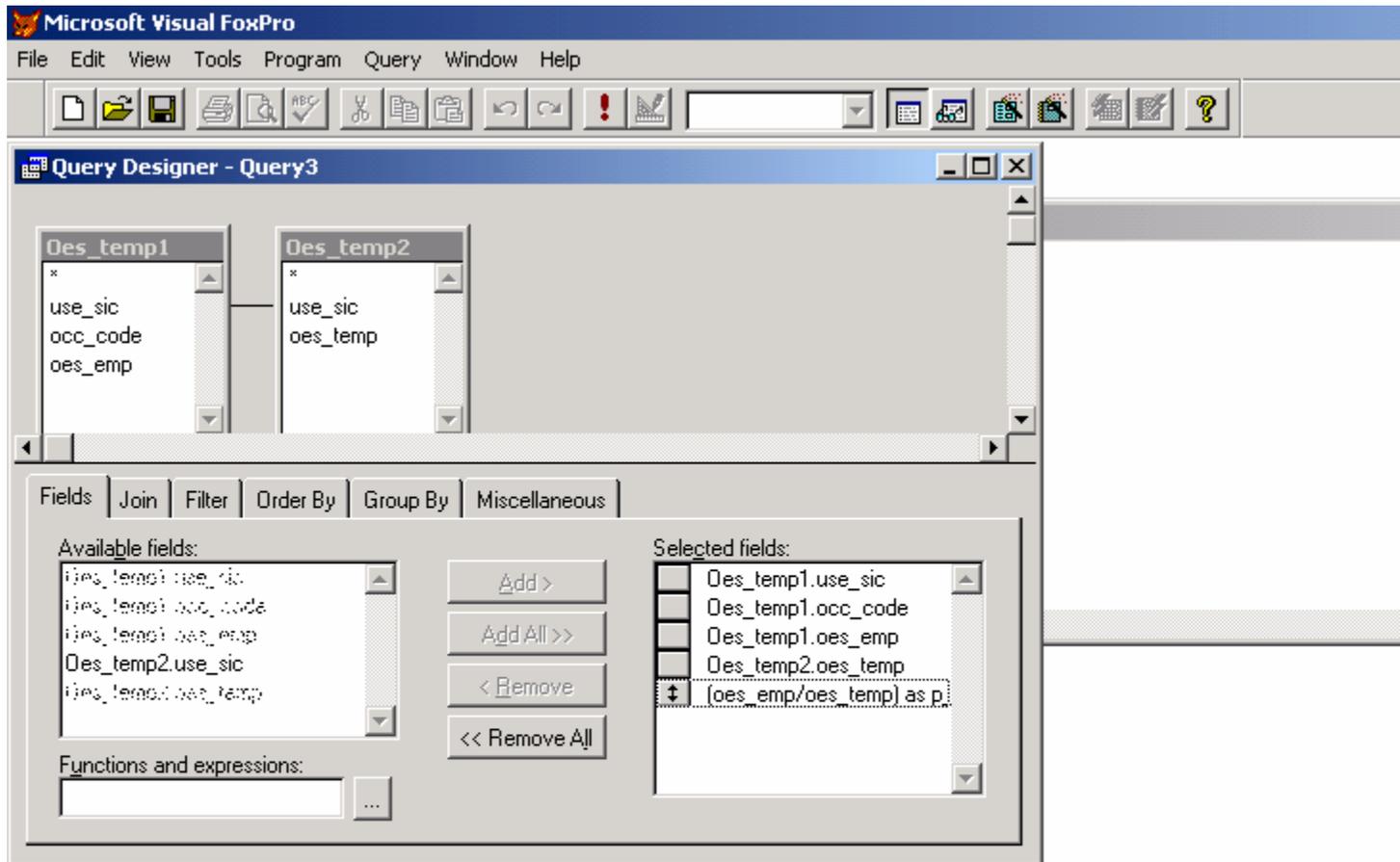## FoxPro Query Designer – Select Second Table for Query 4

MDAR Occupational Turnover Project
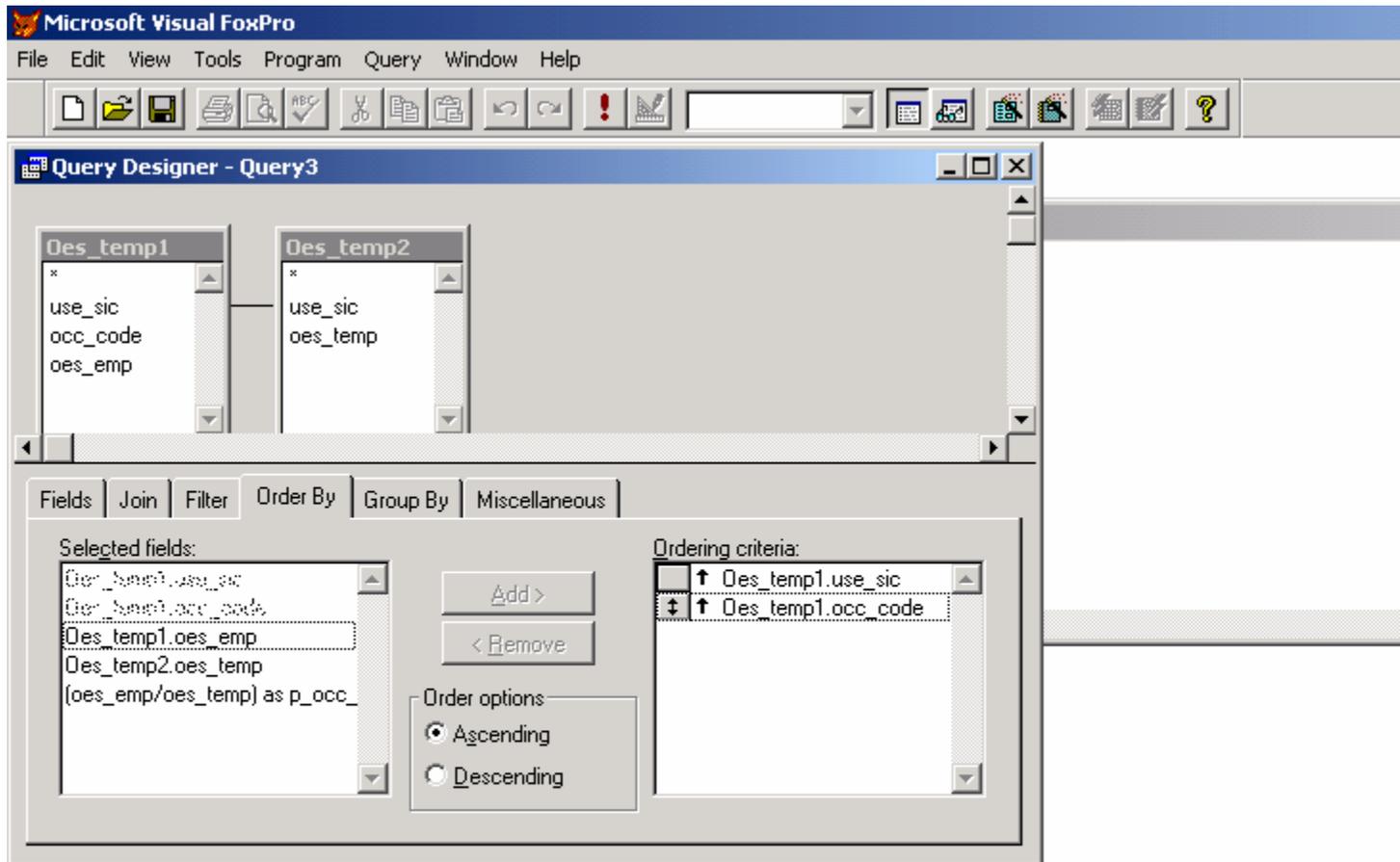## FoxPro Query Designer – Select Type of Join for Query 4

MDAR Occupational Turnover Project
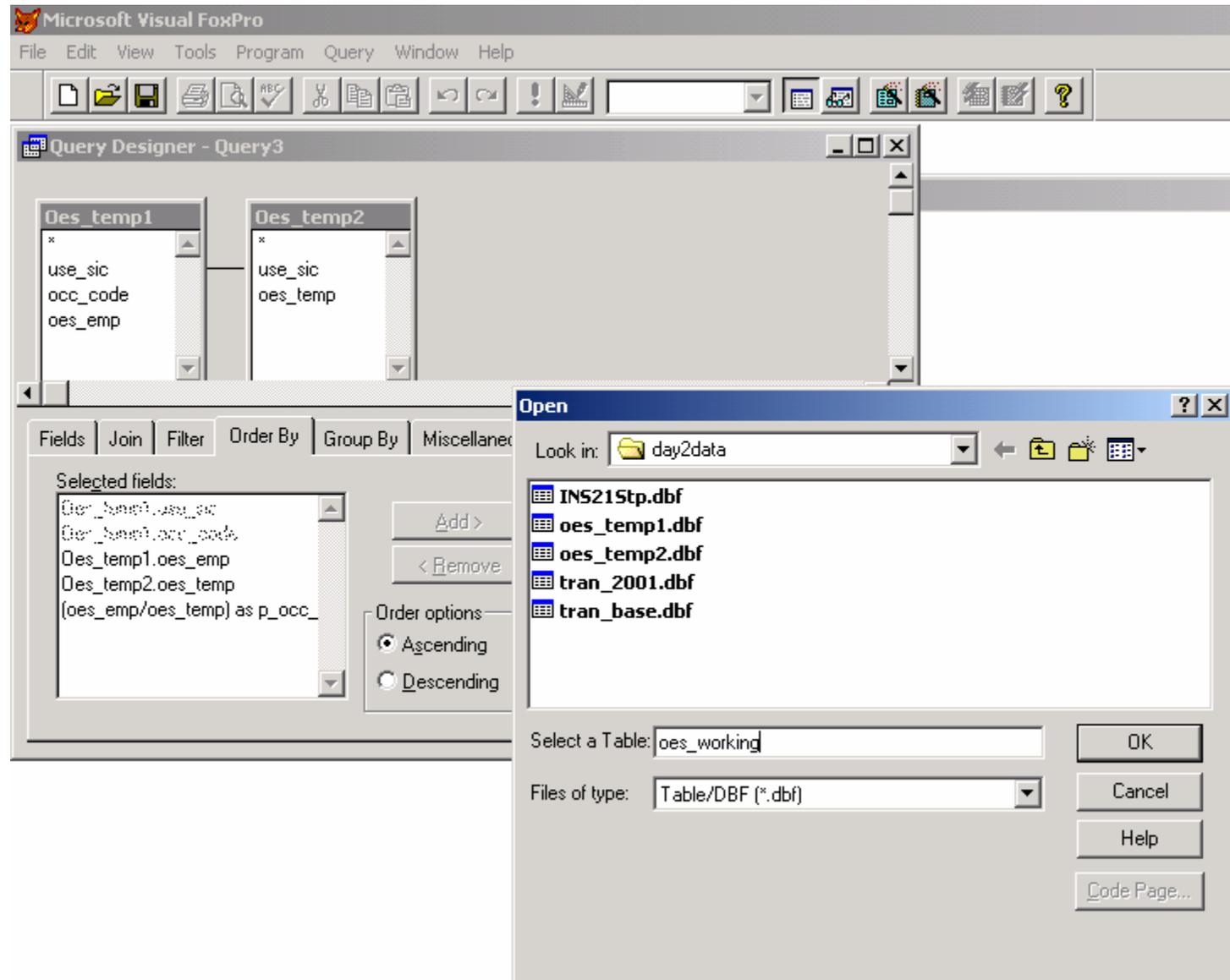# FoxPro Query Designer – Query 4 Fields Tab

MDAR Occupational Turnover Project
FoxPro Query Designer – Query 4 Order By

MDAR Occupational Turnover Project
FoxPro Query Designer – Query 4 Output Table Name and Destination

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FoxPro SQL Language

*Query 4
SELECT oes_temp1.*, oes_temp2.oes_temp,;
   (oes_emp/oes_temp) as p_occ_ind;
FROM oes_temp1 LEFT OUTER JOIN oes_temp2 ;
   ON oes_temp1.use_sic = oes_temp2.use_sic;
ORDER BY oes_temp1.use_sic, oes_temp1.occ_code;
INTO TABLE oes_working.dbf

*Command Between Query 4 and 5
USE oes_working.dbf **EXCLUSIVE**
REPLACE ALL use_sic **WITH SUBSTR**(use_sic,1,2)

*Query 5
SELECT Tran_2001.*, Oes_working.occ_code, Oes_working.oes_emp,;
   Oes_working.oes_temp, Oes_working.p_occ_ind;
FROM tran_2001 **LEFT OUTER JOIN** oes_working ;
   ON Tran_2001.sic = Oes_working.use_sic;
ORDER BY Tran_2001.year, Tran_2001.qtr, Tran_2001.sic,;
   Oes_working.occ_code;
INTO TABLE final.dbf

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FoxPro SQL Language

*Cleanup Directory
Tran_2001.dbf
Oes_temp1.dbf
Oes_temp2.dbf
Oes_working.dbf

*Query 6
SELECT Final.year, Final.qtr, Final.occ_code, Final.tran,;
    SUM(n*p_occ_ind) **AS** n;
FROM final;
GROUP BY Final.year, Final.qtr, Final.occ_code, Final.tran;
ORDER BY Final.year, Final.qtr, Final.occ_code, Final.tran;
INTO TABLE output.dbf

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That's All Folks

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