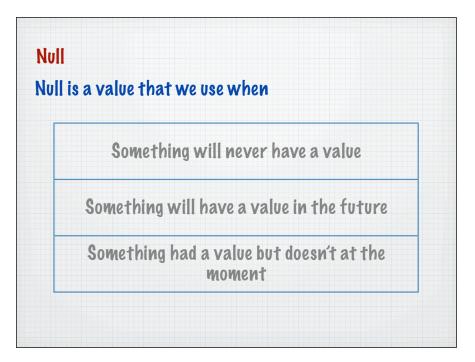
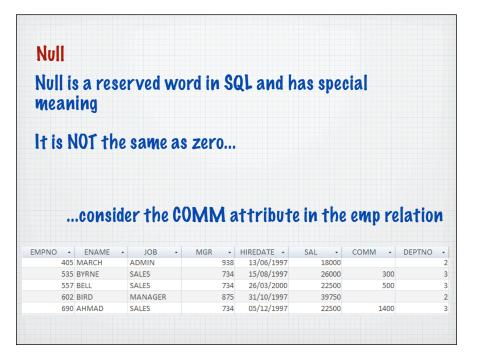
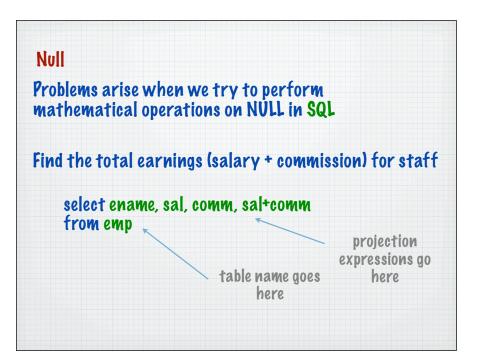
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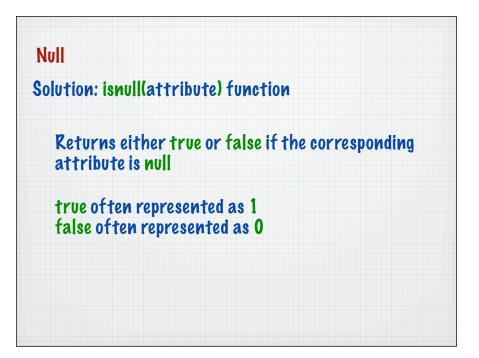


ess u	ses	a blar	ık	cell	to i	ndicate	e a NV	IL			
- ENA	ME •	JOB	*	MGF	2 -	HIREDATE 👻	SAL	*	COMM -	DEPTNO	
05 MARC	н	ADMIN			938	13/06/1997	1	8000			2
35 BYRNE		SALES			734	15/08/1997	2	5000	300		3
57 BELL		SALES			734	26/03/2000	2	2500	500		3
02 BIRD		MANAGER			875	31/10/1997	3	9750			2
90 AHMA	D	SALES			734	05/12/1997	2	2500	1400		3
34 COX		MANAGER			875	11/06/2002	3	8500			3
18 POLLA	RD	MANAGER			875	14/05/2000	34	4500			1
24 REES		ANALYST			602			0000			2
75 PARKE	R	PRESIDEN	Г			09/07/2002	6	0000			_1
		SALES			734				0		
		ADMIN			824						2
		ADMIN			734						3
38 GIBSO	N	ANALYST			602	05/12/1997	4	0000			2
	<ul> <li>ENA</li> <li>MARC</li> <li>BURN</li> <li>BELL</li> <li>BIRD</li> <li>AHMA</li> <li>COX</li> <li>POLLA</li> <li>RES</li> <li>PARKE</li> <li>TURN</li> <li>HAYES</li> <li>CASSY</li> </ul>	<ul> <li>ENAME</li> <li>MARCH</li> <li>BYRNE</li> <li>BYRNE</li> <li>BYRNE</li> <li>BYRNE</li> <li>BYRNE</li> <li>AHMAD</li> <li>COX</li> <li>POLLARD</li> <li>ARKER</li> <li>DULNRER</li> <li>TARKER</li> <li>TURNER</li> <li>TAKES</li> <li>CASSY</li> <li>GIBSON</li> </ul>	ENAME - JOB     MARCH ADMIN     SALES     SYRNE SALES     SALES     SALES     AMANAGER     AMANAGER     AMAA     ADMIN     ANAGER     ANALYST	ENAME     JOB     JOB     ADMIN     ADMIN     SALES     SALES     SALES     SALES     SALES     AMANAGER     AMANAGER     AMANAGER     AMANAGER     AMANAGER     ANALYST     ADMIN     SALES     AMANAGER     ANALYST	ENAME - JOB - MGF OS MARCH ADMIN S5 BYRNE SALES S7 BELL SALES OZ BIRD MANAGER OZ BIRD MANAGER OAHMAD SALES ACCX MANAGER ANALYST FARKER PRESIDENT S0 TURNER SALES T HAYES ADMIN S6 CASSY ADMIN S8 GIBSON ANALYST	<ul> <li>ENAME - JOB - MGR -</li> <li>SMARCH ADMIN 938</li> <li>BYRNE SALES 734</li> <li>BYRNE SALES 734</li> <li>FBELL SALES 734</li> <li>CALES 734</li> <li>AMANAGER 875</li> <li>AHMAD SALES 734</li> <li>COX MANAGER 875</li> <li>AHMAD SALES 734</li> <li>COX MANAGER 875</li> <li>POLLARD MANAGER 875</li> <li>POLLARD MANAGER 875</li> <li>POLLARD MANAGER 875</li> <li>PARKER PRESIDENT</li></ul>	•         ENAME         JOB         MGR         •         HIREDATE           05         MARCH         ADMIN         938         13/06/1997           35         BYRNE         SALES         734         15/08/1997           35         BYRNE         SALES         734         26/03/2000           02         BIRD         MANAGER         875         31/10/1997           02         BIRD         MANAGER         875         31/10/1997           03         ACOX         MANAGER         875         11/06/2002           18         POLLARD         MANAGER         875         14/05/2000           24         RES         ANALYST         602         05/03/2000           05         TURNER         SALES         734         04/06/2001           12         HAYES         ADMIN         824         04/06/2001           12         HAYES         ADMIN         734         23/07/2002           36         GASSY         ADMIN         602         05/12/1997	ENAME         JOB         MGR         HIREDATE         SAL           05         MARCH         ADMIN         938         13/06/1997         14           35         BYRNE         SALES         734         15/08/1997         24           57         BELL         SALES         734         26/03/2000         22           57         BELL         SALES         734         26/03/2000         22           02         BIRD         MANAGER         875         31/10/1997         23           90         AHMAD         SALES         734         05/12/1997         22           34         COX         MANAGER         875         11/06/2002         33           18         POLLARD         MANAGER         875         14/05/2000         34           75         PARKER         PRESIDENT         09/07/2002         66           80         TURNER         SALES         734         04/06/2001         22           12         HAYES         ADMIN         824         04/06/2001         22           36         CASSY         ADMIN         734         23/07/2002         11           38         GIBSON         ANALYST	MARCH         ADMIN         938         13/06/1997         18000           35         BYRNE         SALES         734         15/08/1997         26000           57         BELL         SALES         734         26/03/2000         22500           02         BIRD         MANAGER         875         31/10/1997         39750           90         AHMAD         SALES         734         05/12/1997         22500           34         COX         MANAGER         875         11/06/2002         38500           34         COX         MANAGER         875         14/05/2000         34500           24         RES         ANALYST         602         05/03/2000         40000           75         PARER         PRESIDENT         09/07/2002         60000           80         TURNER         SALES         734         04/06/2001         21000           12         HAYES         ADMIN         824         04/06/2001         21000           36         GISSON         ANALYST         602         05/12/1997         40000	ENAME         JOB         MGR         HIREDATE         SAL         COMM           05         MARCH         ADMIN         938         13/06/1997         18000           35         BYRNE         SALES         734         15/08/1997         26000         300           57         BELL         SALES         734         26/03/2000         22500         300           57         BELL         SALES         734         26/03/2000         22500         500           02         BIRD         MANAGER         875         31/10/1997         39750         1400           34         COX         MANAGER         875         11/06/2002         38500         1400           34         COX         MANAGER         875         14/05/2000         34500         1400           34         POLLARD         MANAGER         875         14/05/2000         40000         1400           35         PRESIDENT         09/07/2002         60000         010         12         4475         602         05/03/200         00         01           36         TURNER         SALES         734         04/06/2001         21000         12         12         14	•         ENAME         JOB         •         MGR         •         HIREDATE         SAL         •         COMM         DEPTNO           05         MARCH         ADMIN         938         13/06/1997         18000         -         DEPTNO           35         BYRNE         SALES         734         15/08/1997         26000         300           57         BELL         SALES         734         26/03/2000         22500         500           02         BIRD         MANAGER         875         31/10/1997         39750         -           90         AHMAD         SALES         734         05/12/1997         22500         1400           34         COX         MANAGER         875         11/06/2002         38500         -           18         POLLARD         MANAGER         875         14/05/2000         34500         -           73         PARKER         PRESIDENT         -         09/07/2002         60000         -           74         PAKER         734         04/06/2001         25000         0         -           74         PAKER         PRESIDENT         -         09/07/2002         60000         -

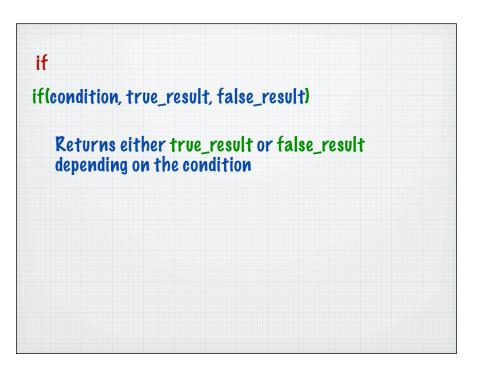
## Note how Turner is allowed to earn commission, but hasn't yet



Null				
Find the total earnings (s	alary +	r con	ımiss	ion) for
select ename, sal, com	n, sal+c	omm		
from emp				
	ename	sal	comm	sal+comm
	BYRNE	26000	300	26300
	BELL	22500	500	23000
	BIRD	39750	NULL	NULL
	AHMAD	22500 38500	1400 NULL	23900 NULL
	POLLARD	34500	NULL	NULL
	REES	40000	NULL	NULL
roblem:	PARKER	60000	NULL	NULL
I UNICAL.	TURNER	25000	0	25000
any value + null returns nu		21000	NULL	NULL
	CASSY	19500	NULL	NULL
8000 + null returns null	GIBSON	40000	NULL	NULL
	BLACK	23000	NULL	NULL
	MARCH	18000	NULL	NULL



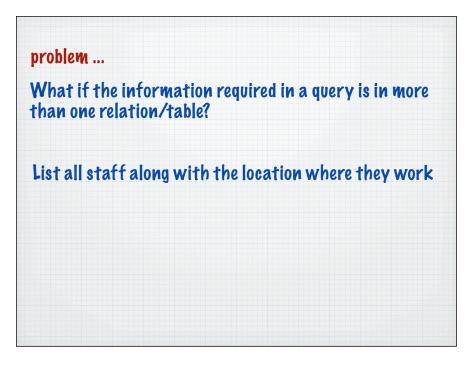
snull		
	comm	isnull(comm)
SELECT comm, isnull( comm )	300	0
	500	0
FROM emp	NULL	1
	1400	0
	NULL	1
	0	0
	NULL	1



Null				
ind the tota	l earning	js (sa	lary	+ commission) for staft
select ename	e, sal, con	nm, s	al+ it	f(isnull(comm), 0,comm)
from emp				
	ename	sal	comm	sal+ if(isnull(comm), 0,comm)
	BYRNE	26000	300	26300
	BELL	22500	500	23000
	BIRD	39750	NULL	39750
	AHMAD	22500	1400	23900
	COX	38500	NULL	38500
	POLLARD	34500	NULL	34500
	REES	40000	NULL	40000
	PARKER	60000	NULL	60000
	TURNER	25000	0	25000
	HAYES	21000	NULL	21000
	CASSY	19500	NULL	19500
	GIBSON	40000	NULL	40000
				00000
	BLACK	23000	NULL	23000

Selection	σ	
Projection	π	Choose particular columns
Cartesian Product	×	
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Gives us particular columns of interest SELECTION Gives us particular rows of interest	SELECTION	PROJECTION	
		Gives us particular columns of interes	t
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		Gives us particular rows of interest	

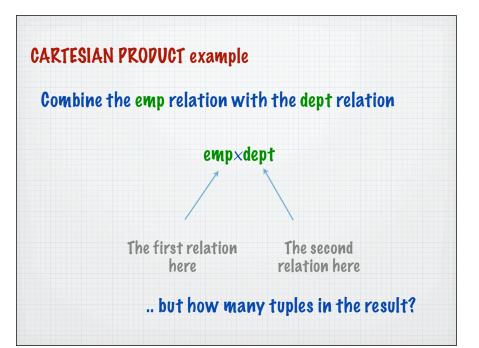


## Requires information in two relations tables to be combined

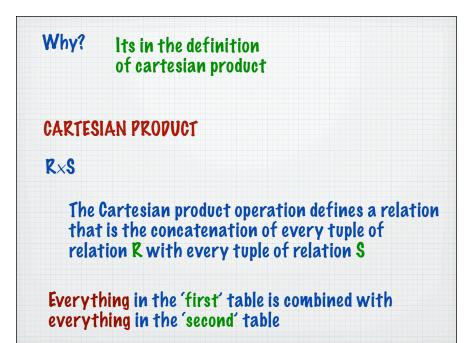
EMPNO -	ENAME	- JOB	✓ MGR ✓	HIREDATE -	SAL - C	OMM - DEI	PTNO
403	MARCH	ADMIN	938	13/06/1997	18000		
533	BYRNE	SALES	734	15/08/1997	26000	300	
55	7 BELL	SALES	734	26/03/2000	22500	500	
602	BIRD	MANAGER	875	31/10/1997	39750		
690	AHMAD	SALES	734	05/12/1997	22500	1400	
734	COX	MANAGER	875	11/06/2002	38500		
818	POLLARD	MANAGER	875	14/05/2000	34500		
824	REES	ANALYST	602	05/03/2000	40000		
875	PARKER	PRESIDENT		09/07/2002	60000		
880	TURNER	SALES	734	04/06/2001	25000	0	
912	HAYES	ADMIN	824	04/06/2001	21000		
936	CASSY	ADMIN	734	23/07/2002	19500		
938	GIBSON	ANALYST	602	05/12/1007	40000	100	
970	BLACK	ADMIN	818	DEPTNO	✓ DNAME	200	•
			Jan h hahla		1 ACCOUNTING		
			dept table		2 RESEARCH	YORK	_
					3 SALES	BIRMINGHAN	1
					4 OPERATIONS	LEEDS	

Selection	σ	
Projection	π	
Cartesian Product	x	<b>Combine relations</b>
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MPNO •	ENAME	- JOB -	MGR ·	HIREDATE -	SAL -	COMM •	emp.DEPTN -	dept.DEPTN •	DNAME -	LOC
405	MARCH	ADMIN	93	8 13/06/1997	18000		. 2	. 1	ACCOUNTING	LONDON
405	MARCH	ADMIN	93		18000		2	2	RESEARCH	YORK
405	MARCH	ADMIN	93		18000		2	3	SALES	BIRMINGHAM
405	MARCH	ADMIN	93		18000		2	4	OPERATIONS	LEEDS
535	BYRNE	SALES	73	4 15/08/1997	26000	300	3	1	ACCOUNTING	LONDON
535	BYRNE	SALES	73	4 15/08/1997	26000	300	3	2	RESEARCH	YORK
535	BYRNE	SALES	73	4 15/08/1997	26000	300	3	3	SALES	BIRMINGHAM
535	BYRNE	SALES	73	4 15/08/1997	26000	300	3	4	OPERATIONS	LEEDS
557	BELL	SALES	73	4 26/03/2000	22500	500	3	1	ACCOUNTING	LONDON
557	BELL	SALES	73	4 26/03/2000	22500	500	3	2	RESEARCH	YORK
557	BELL	SALES	73	4 26/03/2000	22500	500	3	3	SALES	BIRMINGHAM
557	BELL	SALES	73	4 26/03/2000	22500	500	3	4	OPERATIONS	LEEDS
602	BIRD	MANAGER	87	5 31/10/1997	39750		2	1	ACCOUNTING	LONDON
602	BIRD	MANAGER	87	5 31/10/1997	39750		2	2	RESEARCH	YORK
602	BIRD	MANAGER	87	5 31/10/1997	39750		2	3	SALES	BIRMINGHAM
602	BIRD	MANAGER	87	5 31/10/1997	39750		2	4	OPERATIONS	LEEDS
690	AHMAD	SALES	73	4 05/12/1997	22500	1400	3	1	ACCOUNTING	LONDON
690	AHMAD	SALES	73	4 05/12/1997	22500	1400	3	2	RESEARCH	YORK
690	AHMAD	SALES	73	4 05/12/1997	22500	1400	3	3	SALES	BIRMINGHAM
690	AHMAD	SALES	73	4 05/12/1997	22500	1400	3	4	OPERATIONS	LEEDS
734	COX	MANAGER	87	5 11/06/2002	38500		3	1	ACCOUNTING	LONDON
734	COX	MANAGER	87	5 11/06/2002	38500		3	2	RESEARCH	YORK
734	COX	MANAGER	87	5 11/06/2002	38500		3	3	SALES	BIRMINGHAM
734	COX	MANAGER	87	5 11/06/2002	38500		3	4	OPERATIONS	LEEDS
818	POLLARD	MANAGER		th ma						



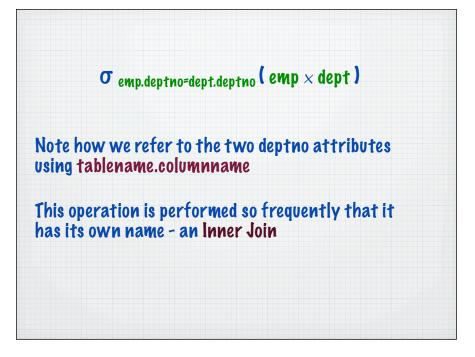
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	405	MARCH		ADMIN		938	13/06/1997		18000					
	535	BYRNE		SALES		734	15/08/1997		26000			300		
	557	BELL		SALES		734	26/03/2000		22500			500		
	602	BIRD		MANAGER		875	31/10/1997		39750					
	690	AHMAD		SALES		734	05/12/1997		22500		1	400		
	734	COX		MANAGER		875	11/06/2002		38500					
	818	POLLARD		MANAGER		875	14/05/2000		34500					
	824	REES		ANALYST		602	05/03/2000		40000					
	875	PARKER		PRESIDENT			09/07/2002		60000					
	880	TURNER		SALES		734	04/06/2001		25000			0		
	912	HAYES		ADMIN		824	04/06/2001		21000					
	936	CASSY		ADMIN		734	23/07/2002		19500					
	938	GIBSON		ANALYST		602	05/10/1007	-	40000	_			_	
	970	BLACK		ADMIN		818	DEPTNO	*	DNAME			.OC	-	
					dan	<b>k</b> he h le			ACCOUNT		LONI		_	
					aep	t table			RESEARCH		YOR		_	
					4	rows		3	SALES		BIRN	IING	HAM	
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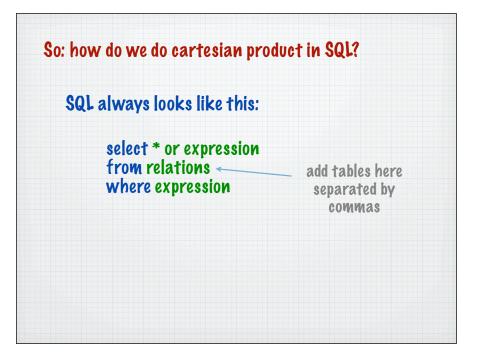
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MPNO • ENAME	• JOB •	MGR •	HIREDATE -	SAL -	сомм	emp.DEPTN + dept.D	COTN	DNAME •	LOC
405 MARCH	ADMIN	938	13/06/1997	18000	COMIN	2			
405 MARCH	ADMIN	938	13/06/1997	18000		2	21		YORK
405 MARCH	ADMIN	938	13/06/1997	18000		2	3 5		BIRMING
405 MARCH	ADMIN	938	13/06/1997	18000		2		PERATIONS	LEEDS
535 BYRNE	SALES	734	15/08/1997	26000	800	3	1		LONDON
535 BYRNE	SALES	734	15/08/1997	26000	800	3		RISEARCH	YORK
535 BYRNE	SALES	734	15/08/1997	26000	800	3	3		BIRMING
535 BYRNE	SALES	734	15/08/1997	26000	800	3	4 (	PERATIONS	LEEDS
557 BELL	SALES	734	26/03/2000	22500	500	3	1		LONDON
557 BELL	SALES	734	26/03/2000	22500	500	3	21	RESEARCH	YORK
557 BELL	SALES	734	26/03/2000	22500	500	3	3 5		BIRMING
557 BELL	SALES	734	26/03/2000	22500	500	3		PERATIONS	LEEDS
602 BIRD	MANAGER	875	31/10/1997	39750		2	1 /		LONDON
602 BIRD	MANAGER	875	31/10/1997	39750		2	21	RESEARCH	YORK
602 BIRD	MANAGER	875	31/10/1997	39750		2	3 5	ALES	BIRMING
602 BIRD	MANAGER	875	31/10/1997	39750		2	4 (	PERATIONS	LEEDS
690 AHMAD	SALES	734	05/12/1997	22500	1400	3	1 /		LONDON
690 AHMAD	SALES	734	05/12/1997	22500	1400	3	21	RESEARCH	YORK
690 AHMAD	SALES	734	05/12/1997	22500	1400	3	3 5	ALES	BIRMING
690 AHMAD	SALES	734	05/12/1997	22500	1400	3	4 (	PERATIONS	LEEDS
734 COX	MANAGER	875	11/06/2002	38500		3	1 /	COUNTING	LONDON
734 COX	MANAGER	875	11/06/2002	38500		3	21	RESEARCH	YORK
734 COX	MANAGER	875	11/06/2002	38500		3	3 5	ALES	BIRMING
734 COX	MANAGER	875	11/06/2002	38500		3	4 (	PERATIONS	LEEDS
818 POLLARD	MANAGER	875	14/05/2000	34500		1	1/	COUNTING	LONDON
818 POLLARD	MANAGER	875	14/05/2000	34500		1	21	RESEARCH	YORK

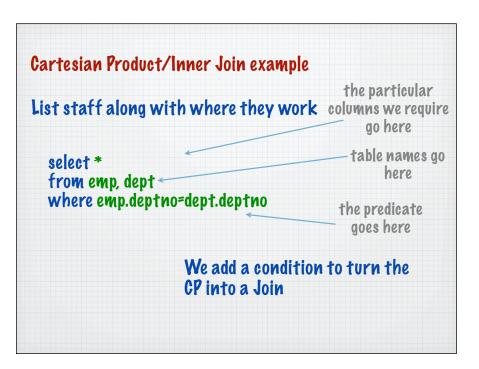
Joining tables			
We have to indicate how the ta correctly connected	ables sh	ould be	
at	1 + emp.D	EPTNO 🗸 dept.D	EPTNO 🗸
There may be many choices		2	1 AC
•		2	2 RE
		2	3 SA
		2	4 OF
aquaidar tha	300	3	1 AC
consider the	300	3	2 RE
deptno attributes	300	3	3 SA
	300	3	4 OF
in the result set	500	3	1 AC
	500	3	2 RE
	500	3	3 SA
	500	3	4 OF
		2	1 AC 2 RF
		2	2 RE 3 SA

We only want to include resul	te wi	noro tho		
leptno is the same in both rel				
ichter is the same in noth ter	a 1 10 <b>1</b>	ist lantes		
	1 -	emp.DEPTNO 👻	dept.DEPTNO 👻	
		2	-	AC
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entrack the ack hack the	300	3		AC
	300	3	-	RE
	300	3	5	SA
	300	3		OF
	500	3	-	RF
Children and the descent the se	500 500	3	-	RE SA
This can be done with a	500	3	5	OF
selection	500	2		AC
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Ad	Add an appropriate condition $\sigma_{\text{predicate}}$ ( emp $\times$ dept											
				σ	em	p.dept	no=dept.d	leptno ( e	emp × 0	dept )		
IPNO -	ENAME -	JOB 🔸	MGR 🗸	HIREDATE -	SAL -	COMM -	emp.DEPTNO -	dept.DEPTNO	DNAME -	LOC		
	ENAME - MARCH	JOB + ADMIN	MGR + 938	HIREDATE • 13/06/1997	SAL - 18000				DNAME + 2 RESEARCH	LOC YORK		
405								2		YORK		
405 535	MARCH	ADMIN	938	13/06/1997	18000	300		3	2 RESEARCH	YORK BIRMINGHA		
405 535 557	MARCH BYRNE	ADMIN SALES	938 734	13/06/1997 15/08/1997	18000 26000	300 500		- 2 3	2 RESEARCH 3 SALES	YORK BIRMINGHA		
405 535 557 602	MARCH BYRNE BELL	ADMIN SALES SALES	938 734 734	13/06/1997 15/08/1997 26/03/2000 31/10/1997 05/12/1997	18000 26000 22500	300 500		- 2 3 3 2	2 RESEARCH 3 SALES 3 SALES	YORK BIRMINGHA BIRMINGHA YORK		
405 535 557 602 690	MARCH BYRNE BELL BIRD	ADMIN SALES SALES MANAGER	938 734 734 875	13/06/1997 15/08/1997 26/03/2000 31/10/1997	18000 26000 22500 39750	300 500		* 2 3 3 2 3	2 RESEARCH 3 SALES 3 SALES 2 RESEARCH	YORK BIRMINGHA BIRMINGHA YORK BIRMINGHA		
405 535 557 602 690 734	MARCH BYRNE BELL BIRD AHMAD	ADMIN SALES SALES MANAGER SALES	938 734 734 875 734	13/06/1997 15/08/1997 26/03/2000 31/10/1997 05/12/1997 11/06/2002 14/05/2000	18000 26000 22500 39750 22500	300 500 1400		2 3 3 2 3 3	2 RESEARCH 3 SALES 3 SALES 2 RESEARCH 3 SALES	YORK BIRMINGHA BIRMINGHA YORK BIRMINGHA		
405 535 557 602 690 734 818 824	MARCH BYRNE BELL BIRD AHMAD COX POLLARD REES	ADMIN SALES SALES MANAGER SALES MANAGER	938 734 734 875 734 875	13/06/1997 15/08/1997 26/03/2000 31/10/1997 05/12/1997 11/06/2002 14/05/2000 05/03/2000	18000 26000 22500 39750 22500 38500 34500 40000	300 500 1400		· 3 3 2 3 3 3 3 4 2 2	2 RESEARCH 3 SALES 3 SALES 2 RESEARCH 3 SALES 3 SALES 1 ACCOUNTING 2 RESEARCH	YORK BIRMINGHA BIRMINGHA YORK BIRMINGHA LONDON YORK		
405 535 557 602 690 734 818 824	MARCH BYRNE BELL BIRD AHMAD COX POLLARD	ADMIN SALES SALES MANAGER SALES MANAGER MANAGER	938 734 734 875 734 875 875 875	13/06/1997 15/08/1997 26/03/2000 31/10/1997 05/12/1997 11/06/2002 14/05/2000 05/03/2000 09/07/2002	18000 26000 22500 39750 22500 38500 34500	300 500 1400		2 3 3 2 2 3 8 8 1 2 2 2	2 RESEARCH 3 SALES 3 SALES 2 RESEARCH 3 SALES 3 SALES 1 ACCOUNTING 2 RESEARCH	YORK BIRMINGHA BIRMINGHA BIRMINGHA BIRMINGHA LONDON		
405 535 557 602 690 734 818 824 875	MARCH BYRNE BELL BIRD AHMAD COX POLLARD REES	ADMIN SALES SALES MANAGER SALES MANAGER MANAGER ANALYST	938 734 734 875 734 875 875 875	13/06/1997 15/08/1997 26/03/2000 31/10/1997 05/12/1997 11/06/2002 14/05/2000 05/03/2000 09/07/2002 04/06/2001	18000 26000 22500 39750 22500 38500 34500 40000	300 500 1400			2 RESEARCH 3 SALES 3 SALES 2 RESEARCH 3 SALES 3 SALES 1 ACCOUNTING 2 RESEARCH	YORK BIRMINGHA BIRMINGHA YORK BIRMINGHA BIRMINGHA LONDON YORK LONDON		
405 535 557 602 690 734 818 824 875 880	MARCH BYRNE BELL BIRD AHMAD COX POLLARD REES PARKER	ADMIN SALES SALES MANAGER SALES MANAGER MANAGER ANALYST PRESIDENT	938 734 734 875 734 875 875 602	13/06/1997 15/08/1997 26/03/2000 31/10/1997 05/12/1997 11/06/2002 14/05/2000 05/03/2000 09/07/2002 04/06/2001	18000 26000 22500 39750 22500 38500 38500 34500 40000 60000	300 500 1400			2 RESEARCH 3 SALES 3 SALES 2 RESEARCH 3 SALES 1 ACCOUNTING 2 RESEARCH 1 ACCOUNTING	YORK BIRMINGHA BIRMINGHA YORK BIRMINGHA BIRMINGHA LONDON YORK LONDON		
405 535 557 602 690 734 818 824 875 880 912	MARCH BYRNE BELL BIRD AHMAD COX POLLARD REES PARKER TURNER	ADMIN SALES SALES MANAGER SALES MANAGER MANAGER ANALYST PRESIDENT SALES	938 734 734 875 734 875 875 602 734	13/06/1997 15/08/1997 26/03/2000 31/10/1997 05/12/1997 11/06/2002 14/05/2000 05/03/2000 09/07/2002 04/06/2001	18000 26000 22500 39750 22500 38500 34500 40000 60000 25000	300 500 1400		2 3 3 2 2 3 4 2 2 2 2 2 2 2 2 2 2 2 2 2	2 RESEARCH 3 SALES 3 SALES 2 RESEARCH 3 SALES 3 SALES 1 ACCOUNTING 2 RESEARCH 1 ACCOUNTING 3 SALES	YORK BIRMINGHA BIRMINGHA YORK BIRMINGHA BIRMINGHA LONDON YORK LONDON BIRMINGHA YORK		
405 535 557 602 690 734 818 824 875 880 912 936	MARCH BYRNE BELL BIRD AHMAD COX POLLARD REES PARKER TURNER HAYES	ADMIN SALES SALES MANAGER SALES MANAGER MANAGER ANALYST PRESIDENT SALES ADMIN	938 734 734 875 734 875 875 602 734 734 824	13/06/1997 15/08/1997 26/03/2000 31/10/1997 05/12/1997 11/06/2002 14/05/2000 05/03/2000 09/07/2002 04/06/2001	18000 26000 22500 39750 22500 38500 34500 40000 60000 25000 21000	300 500 1400 0		· · · · · · · · · · · · · ·	2 RESEARCH 3 SALES 3 SALES 2 RESEARCH 3 SALES 3 SALES 1 ACCOUNTING 2 RESEARCH 1 ACCOUNTING 3 SALES 2 RESEARCH	YORK BIRMINGHA BIRMINGHA YORK BIRMINGHA BIRMINGHA LONDON YORK LONDON BIRMINGHA		







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405	MARCH	ADMIN	938	13/06/1997	18000		2	2	RESEARCH	YORK
535	BYRNE	SALES	734	15/08/1997	26000	300	3	3	SALES	BIRMINGHAI
557	BELL	SALES	734	26/03/2000	22500	500	3	3	SALES	BIRMINGHAI
602	BIRD	MANAGER	875	31/10/1997	39750		2	2	RESEARCH	YORK
	BIRD AHMAD	MANAGER SALES	875 734	31/10/1997 05/12/1997		1400	2		RESEARCH SALES	
690					22500	1400		3		BIRMINGHAI
690 734	AHMAD	SALES	734	05/12/1997	22500 38500	1400	3	3	SALES	BIRMINGHAI
690 734 818	AHMAD COX	SALES MANAGER	734 875	05/12/1997 11/06/2002	22500 38500 34500	1400	3	3 3 1	SALES SALES	BIRMINGHAI
690 734 818 824	AHMAD COX POLLARD	SALES MANAGER MANAGER	734 875 875	05/12/1997 11/06/2002 14/05/2000	22500 38500 34500 40000	1400	3 3 1	3 3 1 2	SALES SALES ACCOUNTING	BIRMINGHAI BIRMINGHAI LONDON YORK
690 734 818 824 875	AHMAD COX POLLARD REES	SALES MANAGER MANAGER ANALYST	734 875 875	05/12/1997 11/06/2002 14/05/2000 05/03/2000	22500 38500 34500 40000	0	3 3 1 2	3 3 1 2 1	SALES SALES ACCOUNTING RESEARCH	BIRMINGHAI BIRMINGHAI LONDON YORK LONDON
690 734 818 824 875 880	AHMAD COX POLLARD REES PARKER	SALES MANAGER MANAGER ANALYST PRESIDENT	734 875 875 602	05/12/1997 11/06/2002 14/05/2000 05/03/2000 09/07/2002	22500 38500 34500 40000 60000 25000		3 3 1 2 1	3 3 1 2 1 3	SALES SALES ACCOUNTING RESEARCH ACCOUNTING	BIRMINGHAI BIRMINGHAI LONDON YORK LONDON
690 734 818 824 875 880 912	AHMAD COX POLLARD REES PARKER TURNER	SALES MANAGER MANAGER ANALYST PRESIDENT SALES	734 875 875 602 734	05/12/1997 11/06/2002 14/05/2000 05/03/2000 09/07/2002 04/06/2001	22500 38500 34500 40000 60000 25000 21000		3 3 1 2 1 3	3 3 1 2 1 3 3 2	SALES SALES ACCOUNTING RESEARCH ACCOUNTING SALES	BIRMINGHAI BIRMINGHAI LONDON YORK LONDON BIRMINGHAI
690 734 818 824 875 880 912 936	AHMAD COX POLLARD REES PARKER TURNER HAYES	SALES MANAGER MANAGER ANALYST PRESIDENT SALES ADMIN	734 875 602 734 824	05/12/1997 11/06/2002 14/05/2000 05/03/2000 09/07/2002 04/06/2001 04/06/2001	22500 38500 34500 40000 60000 25000 21000 19500		3 3 1 2 1 3 2	3 3 1 2 1 3 3 2 3	SALES SALES ACCOUNTING RESEARCH ACCOUNTING SALES RESEARCH	BIRMINGHAI BIRMINGHAI LONDON YORK LONDON BIRMINGHAI YORK

