

CS4400: Introduction to Database Systems

"Hints" for Practicing SQL Queries (v3 – last updated on Sun, 24 May 2020)

Practice Queries from the Textbook: All Categories

practiceQuery0: [book 0] Retrieve the birth date and address of the employees whose name is 'John Smith'.

Result Grid		Filter Rows: <input type="text" value="Search"/>	Export:
bdate	address		
1965-01-09	731 Fondren, Houston TX		

practiceQuery1: [book 1] Retrieve the first name, last name and address of all employees who work for the 'Research' department.

Result Grid		Filter Rows: <input type="text" value="Search"/>	Export:
fname	lname	address	
John	Smith	731 Fondren, Houston TX	
Franklin	Wong	638 Voss, Houston TX	
Joyce	English	5631 Rice, Houston TX	
Ramesh	Narayan	975 Fire Oak, Humble TX	

practiceQuery2: [book 2] For every project located in 'Stafford', list the project number, the controlling department number, and the department manager's last name, address, and birth date.

Result Grid

Filter Rows:

Q

Search

Export:

pnumber	dnum	lname	address	bdate	
▶ 10	4	Wallace	291 Berry, Bellaire TX	1941-06-20	
30	4	Wallace	291 Berry, Bellaire TX	1941-06-20	

practiceQuery3: [book 3] Find the names of employees who work on all the projects controlled by department number 5.

Result Grid		Filter Rows: <input type="text" value="Search"/>	Export:
fname	lname		

practiceQuery4: [book 4] Make a list of project numbers for projects that involve an employee whose last name is 'Smith', either as a worker or as a manager of the department that controls the project.

Result Grid		Filter Rows: <input type="text" value="Search"/>	Export:
pno			
1			
2			

practiceQuery5: [book 5] List the names of all employees with two or more dependents.

Result Grid		Filter Rows: <input type="text" value="Search"/>	Export:
fname	lname		
John	Smith		
Franklin	Wong		





practiceQuery6: [book 6] Retrieve the names of employees who have no dependents.

Result Grid		Filter Rows: <input type="text" value="Search"/>	Export:
fname	lname		
Joyce	English		
Ramesh	Narayan		
James	Borg		
Ahmad	Jabbar		
Alicia	Zelaya		




practiceQuery7: [book 7] List the names of managers who have at least one dependent.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname		
▶ Franklin	Wong		
Jennifer	Wallace		





practiceQuery8: [book 8] For each employee, retrieve the employee's first and last name and the first and last name of his or her immediate supervisor.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 					
A_fname	A_lname	B_fname	B_lname		
▶ John	Smith	Franklin	Wong		
Joyce	English	Franklin	Wong		
Ramesh	Narayan	Franklin	Wong		
Franklin	Wong	James	Borg		
Jennifer	Wallace	James	Borg		
Ahmad	Jabbar	Jennifer	Wallace		
Alicia	Zelaya	Jennifer	Wallace		
James	Borg	NULL	NULL		

practiceQuery9: [book 9] Select all of the employee's Social Security Numbers.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 		
ssn		
▶ 123456789		
333445555		
453453453		
666884444		
888665555		
987654321		
987987987		
999887777		

practiceQuery10: [book 10] Select all possible combinations of the employee's Social Security Numbers and department names.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
ssn	dname		
▶ 123456789	Headquarters		
123456789	Administration		
123456789	Research		
333445555	Headquarters		
333445555	Administration		
333445555	Research		
453453453	Headquarters		
453453453	Administration		
453453453	Research		
666884444	Headquarters		
666884444	Administration		
666884444	Research		
888665555	Headquarters		
888665555	Administration		
888665555	Research		
987654321	Headquarters		
987654321	Administration		
987654321	Research		
987987987	Headquarters		
987987987	Administration		
987987987	Research		
999887777	Headquarters		
999887777	Administration		
999887777	Research		

practiceQuery11: [book 11] Retrieve the distinct salaries of all of the employees.

Result Grid

Filter Rows:

Search

Export:

salary

▶ 30000

40000

25000

38000

55000

43000

practiceQuery12: [book 12] Retrieve the first and last names of all employees whose address is in Houston, Texas.

Result Grid			Filter Rows: <input type="text" value="Q Search"/>	Export:
fname	lname			
▶ John	Smith			
Franklin	Wong			
Joyce	English			
James	Borg			
Ahmad	Jabbar			

practiceQuery13: [book 13] Show the first and last names and resulting salaries if every employee working on the 'ProductX' project is given a 10% raise.

Result Grid				Filter Rows: <input type="text" value="Q Search"/>	Export:
fname	lname	salary			
▶ Franklin	Wong	40000.00			
Ramesh	Narayan	38000.00			
James	Borg	55000.00			
Jennifer	Wallace	43000.00			
Ahmad	Jabbar	25000.00			
Alicia	Zelaya	25000.00			
John	Smith	33000.00			
Joyce	English	27500.00			

practiceQuery14: [book 14] Retrieve all information for employees in department 5 whose salary is between \$30,000 and \$40,000.

Result Grid										Filter Rows: <input type="text" value="Q Search"/>	Export:
fname	lname	ssn	bdate	address	sex	salary	superssn	dno			
▶ John	Smith	123456789	1965-01-09	731 Fondren, Houston TX	M	30000	333445555	5			
Franklin	Wong	333445555	1955-12-08	638 Voss, Houston TX	M	40000	888665555	5			
Ramesh	Narayan	666884444	1962-09-15	975 Fire Oak, Humble TX	M	38000	333445555	5			

practiceQuery15: [book 15] Retrieve a list of department names, employee first and last names, and the project names they are working on, ordered by department and, within each department, ordered alphabetically by last name, then first name.

Result Grid	Filter Rows:	Search	Export:
dname	lname	fname	pname
Administration	Jabbar	Ahmad	Newbenefits
Administration	Jabbar	Ahmad	Computerization
Administration	Wallace	Jennifer	Newbenefits
Administration	Wallace	Jennifer	Computerization
Administration	Zelaya	Alicia	Newbenefits
Administration	Zelaya	Alicia	Computerization
Headquarters	Borg	James	Reorganization
Research	English	Joyce	ProductZ
Research	English	Joyce	ProductY
Research	English	Joyce	ProductX
Research	Narayan	Ramesh	ProductY
Research	Narayan	Ramesh	ProductX
Research	Narayan	Ramesh	ProductZ
Research	Smith	John	ProductZ
Research	Smith	John	ProductY
Research	Smith	John	ProductX
Research	Wong	Franklin	ProductZ
Research	Wong	Franklin	ProductY
Research	Wong	Franklin	ProductX

practiceQuery16: [book 16] Retrieve the name of each employee who has a dependent with the same first name and is the same sex as the employee.

Result Grid	Filter Rows:	Search	Export:
fname	lname		

practiceQuery17: [book 17] Retrieve the Social Security numbers of all employees who work on project numbers 1, 2 or 3.

Result Grid	Filter Rows:	Search	Export:
ssn			
123456789			
333445555			
453453453			
666884444			

practiceQuery18: [book 18] Retrieve the names of all employees who do not have supervisors.

Result Grid	Filter Rows:	Search	Export:
fname	lname		
James	Borg		

practiceQuery19: [book 19] Find the sum of the salaries of all employees, the maximum salary, the minimum salary, and the average salary.

Result Grid	Filter Rows:	Search	Export:
sum(salary)	max(salary)	min(salary)	avg(salary)
281000	55000	25000	35125.0000

practiceQuery20: [book 20] Find the sum of the salaries of all employees of the 'Research' department, as well as the maximum salary, the minimum salary, and the average salary in this department.

Result Grid	Filter Rows:	Search	Export:
sum(salary)	max(salary)	min(salary)	avg(salary)
133000	40000	25000	33250.0000

practiceQuery21: [book 21] Retrieve the total number of employees in the company.

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
count(*)			
▶ 8			

practiceQuery22: [book 22] Retrieve the total number of employees in the 'Research' department.

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
count(*)			
▶ 4			

practiceQuery23: [book 23] Count the number of distinct salary values in the database.

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
count(distinct salary)			
▶ 6			

practiceQuery24: [book 24] For each department, retrieve the department number, the number of employees in the department, and their average salary.

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
dnumber	count(ssn)	avg(salary)	
▶ 5	4	33250.0000	
1	1	55000.0000	
4	3	31000.0000	

practiceQuery25: [book 25] For each project, retrieve the project number, the project name, and the number of employees who work on that project. (Null employees will be interpreted as zero employees).

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
pnumber	pname	count(distinct essn)	
▶ 10	Computerization	3	
30	Newbenefits	3	
1	ProductX	2	
2	ProductY	3	
3	ProductZ	2	
20	Reorganization	3	

practiceQuery26: [book 26] For each project on which more than two employees work, retrieve the project number, the project name, and the number of employees who work on the project.

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
pnumber	pname	count(distinct essn)	
▶ 10	Computerization	3	
30	Newbenefits	3	
2	ProductY	3	
20	Reorganization	3	



practiceQuery27: [book 27] For each project, retrieve the project number, the project name, and the number of employees from department 5 who work on the project.

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
pnumber	pname	count(distinct essn)	
▶ 10	Computerization	1	
30	Newbenefits	0	
1	ProductX	2	
2	ProductY	3	
3	ProductZ	2	
20	Reorganization	1	



practiceQuery28: [book 28] For each department that has less than four* employees, retrieve the department number and the number of its employees who are making more than \$25,000*. (Less than four employees instead of more than five, and \$25,000 instead of \$40,000 to make the results more fruitful.)

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 		
dno	count(ssn)	
▶ 1	1	
4	1	



practiceQuery29: [book 1c] Retrieve all of the attribute values for any employee who works in department 5.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 								
fname	lname	ssn	bdate	address	sex	salary	superssn	dno
▶ John	Smith	123456789	1965-01-09	731 Fondren, Houston TX	M	30000	333445555	5
Franklin	Wong	333445555	1955-12-08	638 Voss, Houston TX	M	40000	888665555	5
Joyce	English	453453453	1972-07-31	5631 Rice, Houston TX	F	25000	333445555	5
Ramesh	Narayan	666884444	1962-09-15	975 Fire Oak, Humble TX	M	38000	333445555	5



practiceQuery30: [book 1d] Retrieve all of the attributes for each employee and the department for which he or she works.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 												
fname	lname	ssn	bdate	address	sex	salary	superssn	dno	dname	dnumber	mgrssn	mgrstartdate
▶ John	Smith	123456789	1965-01-09	731 Fondren...	M	30000	333445555	5	Research	5	333445555	1988-05-22
Franklin	Wong	333445555	1955-12-08	638 Voss, ...	M	40000	888665555	5	Research	5	333445555	1988-05-22
Joyce	English	453453453	1972-07-31	5631 Rice, ...	F	25000	333445555	5	Research	5	333445555	1988-05-22
Ramesh	Narayan	666884444	1962-09-15	975 Fire O...	M	38000	333445555	5	Research	5	333445555	1988-05-22
James	Borg	888665555	1937-11-10	450 Stone, ...	M	55000	NULL	1	Headquarters	1	888665555	1981-06-19
Jennifer	Wallace	987654321	1941-06-20	291 Berry, ...	F	43000	888665555	4	Administrati...	4	987654321	1995-01-01
Ahmad	Jabbar	987987987	1969-03-29	980 Dallas...	M	25000	987654321	4	Administrati...	4	987654321	1995-01-01
Alicia	Zelaya	999887777	1968-01-19	3321 Castl...	F	25000	987654321	4	Administrati...	4	987654321	1995-01-01



practiceQuery31: [book 12a] Find the first name, last name and birthdate of the employees who were born during the 1950s.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	bdate	
▶ Franklin	Wong	1955-12-08	

practiceQuery32: [book 6_10a] Retrieve the first and last names of all employees in department 5 who work more than 10 hours per week on the ProductX project.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 		
fname	lname	
▶ John	Smith	
Joyce	English	






practiceQuery33: [book 6_10b] List the first and last names of all employees who have a dependent with the same first name as themselves.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 	
fname	lname






practiceQuery34: [book 6_10c] Find the first and last names of all employees who are directly supervised by 'Franklin Wong'.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 	
fname	lname
▶ John	Smith
Joyce	English
Ramesh	Narayan






practiceQuery35: [book 7_7a] Retrieve the first and last names of all employees who work in the department that has the employee with the highest salary among all employees.

Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export: 			
fname	lname		
▶ James	Borg		

practiceQuery36: [book 7_7b] Retrieve the first and last names of all employees whose supervisor's supervisor has '888665555' for their SSN.






Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export: 			
fname	lname		
▶ John	Smith		
Joyce	English		
Ramesh	Narayan		
Ahmad	Jabbar		
Alicia	Zelaya		

practiceQuery37: [book 7_7c] Retrieve the first and last names of employees who make at least \$10,000 more than the employee who is paid the least in the company.






Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export: 			
fname	lname		
▶ Franklin	Wong		
Ramesh	Narayan		
James	Borg		
Jennifer	Wallace		

Practice Queries: Introductory Level Select Only




practiceQuery40: Display the words 'Hello World!'

Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export: 			
Hello World!			
▶ Hello World!			



practiceQuery41: Display the words 'Hello World!' as a 'greeting'

Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export: 			
greeting			
▶ Hello World!			




practiceQuery42: Display the sum of 4 and 6

Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export: 			
4 + 6			
▶ 10			

practiceQuery43: Display the sum of 4 and 6, the product of 3 and 7, and the difference of 9 and 5




Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export: 			
my_sum	my_product	my_difference	
▶ 10	21	4	

practiceQuery44: Display the entire contents of the employees table




Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 									
fname	lname	ssn	bdate	address	sex	salary	superssn	dno	
John	Smith	123456789	1965-01-09	731 Fondren, Houston TX	M	30000	333445555	5	
Franklin	Wong	333445555	1955-12-08	638 Voss, Houston TX	M	40000	888665555	5	
Joyce	English	453453453	1972-07-31	5631 Rice, Houston TX	F	25000	333445555	5	
Ramesh	Narayan	666884444	1962-09-15	975 Fire Oak, Humble TX	M	38000	333445555	5	
James	Borg	888665555	1937-11-10	450 Stone, Houston TX	M	55000	NULL	1	
Jennifer	Wallace	987654321	1941-06-20	291 Berry, Bellaire TX	F	43000	888665555	4	
Ahmad	Jabbar	987987987	1969-03-29	980 Dallas, Houston TX	M	25000	987654321	4	
Alicia	Zelaya	999887777	1968-01-19	3321 Castle, Spring TX	F	25000	987654321	4	

Practice Queries: Select – From – Where – Order By




practiceQuery50: Display the first name, last name and address of all employees.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 									
fname	lname	address							
John	Smith	731 Fondren, Houston TX							
Franklin	Wong	638 Voss, Houston TX							
Joyce	English	5631 Rice, Houston TX							
Ramesh	Narayan	975 Fire Oak, Humble TX							
James	Borg	450 Stone, Houston TX							
Jennifer	Wallace	291 Berry, Bellaire TX							
Ahmad	Jabbar	980 Dallas, Houston TX							
Alicia	Zelaya	3321 Castle, Spring TX							

practiceQuery51: Display the last name in a column titled 'Last Name', first name in a column titled 'First Name', and address in a column titled 'Residence Location' for all employees.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 									
Last Name	First Name	Residence Location							
Smith	John	731 Fondren, Houston TX							
Wong	Franklin	638 Voss, Houston TX							
English	Joyce	5631 Rice, Houston TX							
Narayan	Ramesh	975 Fire Oak, Humble TX							
Borg	James	450 Stone, Houston TX							
Wallace	Jennifer	291 Berry, Bellaire TX							
Jabbar	Ahmad	980 Dallas, Houston TX							
Zelaya	Alicia	3321 Castle, Spring TX							

practiceQuery52: Retrieve the first name, last name and address of all employees, and display the first and last name as a combined 'Whole Name'.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 									
Whole Name		address							
John Smith		731 Fondren, Houston TX							
Franklin Wong		638 Voss, Houston TX							
Joyce English		5631 Rice, Houston TX							
Ramesh Narayan		975 Fire Oak, Humble TX							
James Borg		450 Stone, Houston TX							
Jennifer Wallace		291 Berry, Bellaire TX							
Ahmad Jabbar		980 Dallas, Houston TX							
Alicia Zelaya		3321 Castle, Spring TX							

practiceQuery53: Retrieve the department numbers for all employees.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
dno		
5		
5		
5		
5		
1		
4		
4		
4		

practiceQuery54: Retrieve the unique department numbers for all employees.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
dno		
5		
1		
4		

practiceQuery55: Retrieve the salary and department number combinations for all employees.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
salary	dno	
30000	5	
40000	5	
25000	5	
38000	5	
55000	1	
43000	4	
25000	4	
25000	4	

practiceQuery56: Retrieve the distinct salary and department number combinations for all employees.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
salary	dno	
30000	5	
40000	5	
25000	5	
38000	5	
55000	1	
43000	4	
25000	4	




practiceQuery60: Retrieve the first name, last name and address of all employees in department 5.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
fname	lname	address
John	Smith	731 Fondren, Houston TX
Franklin	Wong	638 Voss, Houston TX
Joyce	English	5631 Rice, Houston TX
Ramesh	Narayan	975 Fire Oak, Humble TX




practiceQuery61: Retrieve the first name, last name and address of all employees who are not in department 5.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
fname	lname	address
James	Borg	450 Stone, Houston TX
Jennifer	Wallace	291 Berry, Bellaire TX
Ahmad	Jabbar	980 Dallas, Houston TX
Alicia	Zelaya	3321 Castle, Spring TX



practiceQuery62: Retrieve the first name, last name and address of all employees who earn more than 30000 in salary.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	address	
▶ Franklin	Wong	638 Voss, Houston TX	
Ramesh	Narayan	975 Fire Oak, Humble TX	
James	Borg	450 Stone, Houston TX	
Jennifer	Wallace	291 Berry, Bellaire TX	




practiceQuery63: Retrieve the first name, last name and address of all employees who are in department 5 or earn more than 30000 in salary.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	address	
▶ John	Smith	731 Fondren, Houston TX	
Franklin	Wong	638 Voss, Houston TX	
Joyce	English	5631 Rice, Houston TX	
Ramesh	Narayan	975 Fire Oak, Humble TX	
James	Borg	450 Stone, Houston TX	
Jennifer	Wallace	291 Berry, Bellaire TX	




practiceQuery64: Retrieve the first name, last name and address of all employees who are in department 5 and earn more than 30000 in salary.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	address	
▶ Franklin	Wong	638 Voss, Houston TX	
Ramesh	Narayan	975 Fire Oak, Humble TX	




practiceQuery65: Retrieve the first name, last name, address and birthdate of all employees born after January 1st, 1968.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 				
fname	lname	address	bdate	
▶ Joyce	English	5631 Rice, Houston TX	1972-07-31	
Ahmad	Jabbar	980 Dallas, Houston TX	1969-03-29	
Alicia	Zelaya	3321 Castle, Spring TX	1968-01-19	




practiceQuery66: Retrieve the first name, last name, address and birthdate of all employees born after January 1st, 1964 and before August 10th, 1970.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 				
fname	lname	address	bdate	
▶ John	Smith	731 Fondren, Houston TX	1965-01-09	
Ahmad	Jabbar	980 Dallas, Houston TX	1969-03-29	
Alicia	Zelaya	3321 Castle, Spring TX	1968-01-19	




practiceQuery67: Retrieve the first name, last name and address of all employees in first name order.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	address	
▶ Ahmad	Jabbar	980 Dallas, Houston TX	
Alicia	Zelaya	3321 Castle, Spring TX	
Franklin	Wong	638 Voss, Houston TX	
James	Borg	450 Stone, Houston TX	
Jennifer	Wallace	291 Berry, Bellaire TX	
John	Smith	731 Fondren, Houston TX	
Joyce	English	5631 Rice, Houston TX	
Ramesh	Narayan	975 Fire Oak, Humble TX	




practiceQuery68: Retrieve the first name, last name and address of all employees in descending last name order.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	address	
▶ Alicia	Zelaya	3321 Castle, Spring TX	
Franklin	Wong	638 Voss, Houston TX	
Jennifer	Wallace	291 Berry, Bellaire TX	
John	Smith	731 Fondren, Houston TX	
Ramesh	Narayan	975 Fire Oak, Humble TX	
Ahmad	Jabbar	980 Dallas, Houston TX	
Joyce	English	5631 Rice, Houston TX	
James	Borg	450 Stone, Houston TX	




practiceQuery69: Retrieve the first name and address of all employees in last name order (descending).

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	address		
▶ Alicia	3321 Castle, Spring TX		
Franklin	638 Voss, Houston TX		
Jennifer	291 Berry, Bellaire TX		
John	731 Fondren, Houston TX		
Ramesh	975 Fire Oak, Humble TX		
Ahmad	980 Dallas, Houston TX		
Joyce	5631 Rice, Houston TX		
James	450 Stone, Houston TX		




practiceQuery70: Retrieve the first name, last name and address of all employees in the order of last name and then first name.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	address	
▶ James	Borg	450 Stone, Houston TX	
Joyce	English	5631 Rice, Houston TX	
Ahmad	Jabbar	980 Dallas, Houston TX	
Ramesh	Narayan	975 Fire Oak, Humble TX	
John	Smith	731 Fondren, Houston TX	
Jennifer	Wallace	291 Berry, Bellaire TX	
Franklin	Wong	638 Voss, Houston TX	
Alicia	Zelaya	3321 Castle, Spring TX	

practiceQuery71: Retrieve the first name, last name and address of all employees who live in Houston.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	address	
▶ John	Smith	731 Fondren, Houston TX	
Franklin	Wong	638 Voss, Houston TX	
Joyce	English	5631 Rice, Houston TX	
James	Borg	450 Stone, Houston TX	
Ahmad	Jabbar	980 Dallas, Houston TX	

practiceQuery72: Retrieve the first name, last name and address of all employees who live in Dallas.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 			
fname	lname	address	
▶ Ahmad	Jabbar	980 Dallas, Houston TX	

practiceQuery73: Retrieve the first name, last name and address of all employees whose first names begin with the letter 'J'.

fname	lname	address
John	Smith	731 Fondren, Houston TX
Joyce	English	5631 Rice, Houston TX
James	Borg	450 Stone, Houston TX
Jennifer	Wallace	291 Berry, Bellaire TX

practiceQuery74: Retrieve the first name, last name and address of all employees whose last names contain the pattern 'aya'.

fname	lname	address
Ramesh	Narayan	975 Fire Oak, Humble TX
Alicia	Zelaya	3321 Castle, Spring TX

practiceQuery75: Retrieve the first name, last name and address of all employees whose last names contain the pattern 'aya' where the pattern is not at the end of the string.

fname	lname	address
Ramesh	Narayan	975 Fire Oak, Humble TX

Practice Queries: Select – From – Where – Group By – Having – Order By (with Aggregates)

practiceQuery80: Retrieve the first name, last name and salary of the employees in department number 5 if they were all given a 10% raise in salary.

fname	lname	raise
John	Smith	33000.0000
Franklin	Wong	44000.0000
Joyce	English	27500.0000
Ramesh	Narayan	41800.0000

practiceQuery81: Retrieve the sum of the salaries for all employees in department number 5.

sum(salary)
133000

practiceQuery82: Retrieve the smallest and largest salaries for all employees in department number 5.

min(salary)	max(salary)
25000	40000

practiceQuery83: Retrieve the number of different salaries for all employees.

count(distinct salary)
6

practiceQuery84: Retrieve the number of Supervisor's Social Security Numbers (superssn) without duplicates.

count(distinct superssn)
3

practiceQuery85: Retrieve the number of employees whose superssn is equal to 333445555.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
count(*)		
▶ 3		

practiceQuery86: Retrieve the number of employees whose superssn is not equal to 333445555.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
count(*)		
▶ 4		

practiceQuery87: Retrieve the total number of employees.

Result Grid	Filter Rows: <input type="text" value="Search"/>	Export:
count(*)		
▶ 8		

practiceQuery88: Retrieve the minimum, average and maximum salary for the employees in each department.

Result Grid

Filter Rows:

Export:

dno	min(salary)	avg(salary)	max(salary)
▶ 5	25000	33250.0000	40000
1	55000	55000.0000	55000
4	25000	31000.0000	43000

practiceQuery89: Retrieve the minimum, average and maximum salary for the employees in each department with less than four employees.

Result Grid

Filter Rows:

Q Search

Export:

dno	min(salary)	avg(salary)	max(salary)	
▶ 1	55000	55000.0000	55000	
4	25000	31000.0000	43000	

Practice Queries: Nested Queries & Set Operations (including Union & Correlated Subqueries)

practiceQuery100: Retrieve the total number of employees whose salaries exceed \$25,000 in each department.

Result Grid

Filter Rows:

Search

Export:

dno	count(*)	
▶ 5	3	
1	1	
4	1	

practiceQuery101: Retrieve the total number of employees whose salaries exceed \$25,000 in all of the departments except Headquarters.

Result Grid


Filter Rows:

Search

Export:

dno	count(*)	
▶ 5	3	
4	1	

practiceQuery102: Retrieve the department numbers for departments where fewer than four employees work.

Result Grid		Filter Rows: <input type="text" value="Search"/>	Export: 	
dno				
▶	1			
	4			

practiceQuery103: Retrieve the total number of employees whose salaries exceed \$25,000 per department, but only for departments where fewer than four employees work.

Result Grid

Filter Rows:

Q Search

Export:

dno	count(*)	
▶ 1	1	
4	1	

practiceQuery104: Retrieve the first name, last name and address for each employee that has a dependent daughter.

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
fname	lname	address	
▶ John	Smith	731 Fondren, Houston TX	
Franklin	Wong	638 Voss, Houston TX	

practiceQuery105: Retrieve the first name, last name and address for each employee that is working on a project that is located in Houston.

Result Grid		Filter Rows: <input type="text" value="Q Search"/>	Export:
fname	lname	address	
▶ Franklin	Wong	638 Voss, Houston TX	
Ramesh	Narayan	975 Fire Oak, Humble TX	
James	Borg	450 Stone, Houston TX	
Jennifer	Wallace	291 Berry, Bellaire TX	

practiceQuery106: Retrieve the Social Security Number (ssn) of employees who earn more than 25000 in salary or work on project 20.

Result Grid

Filter Rows:

Search

Export:

ssn

▶ 123456789

333445555

666884444

888665555

987654321

practiceQuery107: Retrieve the Social Security Number (ssn) of each employee who earns more than 25000 in salary and also works on project 20.

Result Grid

Filter Rows:

Search

Export:

ssn

▶ 333445555

888665555

987654321

practiceQuery108: Retrieve the Social Security Number (ssn) of each employee who earns more than 25000 in salary but doesn't work on project 20.

Result Grid

Filter Rows:

Q Search

Export:

ssn

▶ 123456789

666884444

Practice Queries: Cartesian Products & Joins (Inner, Outer & Natural)

practiceQuery120: Display the first name, last name, address, department number (dno and dnumber) and department name for all combinations of the employee and department record sets.

fname	lname	address	dno	dnumber	dname
John	Smith	731 Fondren, Houston TX	5	1	Headquarters
John	Smith	731 Fondren, Houston TX	5	4	Administration
John	Smith	731 Fondren, Houston TX	5	5	Research
Franklin	Wong	638 Voss, Houston TX	5	1	Headquarters
Franklin	Wong	638 Voss, Houston TX	5	4	Administration
Franklin	Wong	638 Voss, Houston TX	5	5	Research
Joyce	English	5631 Rice, Houston TX	5	1	Headquarters
Joyce	English	5631 Rice, Houston TX	5	4	Administration
Joyce	English	5631 Rice, Houston TX	5	5	Research
Ramesh	Narayan	975 Fire Oak, Humble TX	5	1	Headquarters
Ramesh	Narayan	975 Fire Oak, Humble TX	5	4	Administration
Ramesh	Narayan	975 Fire Oak, Humble TX	5	5	Research
James	Borg	450 Stone, Houston TX	1	1	Headquarters
James	Borg	450 Stone, Houston TX	1	4	Administration
James	Borg	450 Stone, Houston TX	1	5	Research
Jennifer	Wallace	291 Berry, Bellaire TX	4	1	Headquarters

truncated results shown – full result set has 24 rows

practiceQuery121: Retrieve the first name, last name, address, department name and number of all employees. [USE CARTESIAN PRODUCT TECHNIQUE]

practiceQuery122: Retrieve the first name, last name, address, department name and number of all employees. [USE INNER JOIN TECHNIQUE]


practiceQuery123: Retrieve the first name, last name, address, department name and number of all employees. [USE NATURAL JOIN TECHNIQUE]

fname	lname	address	dname	dno
John	Smith	731 Fondren, Houston TX	Research	5
Franklin	Wong	638 Voss, Houston TX	Research	5
Joyce	English	5631 Rice, Houston TX	Research	5
Ramesh	Narayan	975 Fire Oak, Humble TX	Research	5
James	Borg	450 Stone, Houston TX	Headquarters	1
Jennifer	Wallace	291 Berry, Bellaire TX	Administration	4
Ahmad	Jabbar	980 Dallas, Houston TX	Administration	4
Alicia	Zelaya	3321 Castle, Spring TX	Administration	4



practiceQuery124: Retrieve the employee's first and last name and address, along with their supervisor's Social Security Number, first and last names for all employees.

work_fname	work_lname	address	superssn	fname	lname
John	Smith	731 Fondren, Houston TX	333445555	Franklin	Wong
Joyce	English	5631 Rice, Houston TX	333445555	Franklin	Wong
Ramesh	Narayan	975 Fire Oak, Humble TX	333445555	Franklin	Wong
Franklin	Wong	638 Voss, Houston TX	888665555	James	Borg
Jennifer	Wallace	291 Berry, Bellaire TX	888665555	James	Borg
Ahmad	Jabbar	980 Dallas, Houston TX	987654321	Jennifer	Wallace
Alicia	Zelaya	3321 Castle, Spring TX	987654321	Jennifer	Wallace
James	Borg	450 Stone, Houston TX	NULL	NULL	NULL



practiceQuery125: Retrieve the name and birthdate of all dependents, along with the first and last name of their sponsor (employee). Include the names of all employees in your response, to include the first and last names of employees who don't have any dependents.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 				
dependent_name	bdate	fname	lname	
▶ Alice	1988-12-30	John	Smith	
Elizabeth	1967-05-05	John	Smith	
Michael	1988-01-04	John	Smith	
Alice	1986-04-04	Franklin	Wong	
Joy	1958-05-03	Franklin	Wong	
Theodore	1983-10-25	Franklin	Wong	
Abner	1942-02-28	Jennifer	Wallace	
NULL	NULL	Joyce	English	
NULL	NULL	Ramesh	Narayan	
NULL	NULL	James	Borg	
NULL	NULL	Ahmad	Jabbar	
NULL	NULL	Alicia	Zelaya	



practiceQuery126: Retrieve the first and last name, department number and department name for all department managers.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 				
fname	lname	dname	dnumber	
▶ Franklin	Wong	Research	5	
James	Borg	Headquarters	1	
Jennifer	Wallace	Administration	4	




practiceQuery127: Retrieve the first and last name, department number of all employees, along with the name of the department that they manage (if applicable).

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 				
fname	lname	dno	dname	
▶ James	Borg	1	Headquarters	
Jennifer	Wallace	4	Administration	
Franklin	Wong	5	Research	
John	Smith	5	NULL	
Joyce	English	5	NULL	
Ramesh	Narayan	5	NULL	
Ahmad	Jabbar	4	NULL	
Alicia	Zelaya	4	NULL	

practiceQuery128: Display the first and last names of employees along with the names of projects that are located in the city where they live (using the employee's address). Include the employee's address along with the project's location.

Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export: 					
fname	lname	address	pname	plocation	
▶ John	Smith	731 Fondren, Houston TX	ProductZ	Houston	
John	Smith	731 Fondren, Houston TX	Reorganization	Houston	
Franklin	Wong	638 Voss, Houston TX	ProductZ	Houston	
Franklin	Wong	638 Voss, Houston TX	Reorganization	Houston	
Joyce	English	5631 Rice, Houston TX	ProductZ	Houston	
Joyce	English	5631 Rice, Houston TX	Reorganization	Houston	
James	Borg	450 Stone, Houston TX	ProductZ	Houston	
James	Borg	450 Stone, Houston TX	Reorganization	Houston	
Jennifer	Wallace	291 Berry, Bellaire TX	ProductX	Bellaire	
Ahmad	Jabbar	980 Dallas, Houston TX	ProductZ	Houston	
Ahmad	Jabbar	980 Dallas, Houston TX	Reorganization	Houston	

practiceQuery129: Find the first and last names and birthdates of the employees (supervisors included) who are old as (or older than) one or more of the department managers. Include the first and last names and birthdates of the managers as well.

Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export: 						
work_fname	work_lname	work_bdate	fname	lname	bdate	
▶ James	Borg	1937-11-10	Franklin	Wong	1955-12-08	
James	Borg	1937-11-10	Jennifer	Wallace	1941-06-20	
Jennifer	Wallace	1941-06-20	Franklin	Wong	1955-12-08	