

```
1 /* Ariez Hart (previously Othus) */
2
3 CREATE DATABASE myCompany;
4 USE myCompany;
5
6 CREATE TABLE Departments
7 (
8     DepID INT PRIMARY KEY,
9     DepName VARCHAR(50)
10 );
11
12 CREATE TABLE Employees
13 (
14     EmployeeID INT PRIMARY KEY,
15     DepID INT FOREIGN KEY REFERENCES Departments (DepID),
16     Surname VARCHAR(40),
17     EmployeeName VARCHAR(30),
18     Birthdate DATETIME,
19     Height FLOAT,
20     BossID INT
21 );
22
23 CREATE TABLE Salaries
24 (
25     SalaryID INT PRIMARY KEY,
26     PersonID INT FOREIGN KEY REFERENCES Employees(EmployeeID),
27     Gross MONEY,
28     SalaryDate DATETIME
29 );
30
31 CREATE TABLE Bonuses
32 (
33     BonusID INT PRIMARY KEY,
34     PersonID INT FOREIGN KEY REFERENCES Employees(EmployeeID),
35     Descript VARCHAR(100)
36 );
37
38 /* Creating a junk/redundant table to show the use of []s. */
39
40 CREATE TABLE [percent]
41 (
42     [Birth Date] DATETIME,
43     [50] INT,
44     [col*] INT
45 );
46
47 /* Permanently and irrevocably deleted the junk table [percent]. */
48
49 DROP TABLE [percent];
```

```
1 /* Ariez Hart (Previously Othus) */
2
3 /* * * DEPARTMENTS * * */
4
5 INSERT INTO Departments (DepID, DepName) VALUES (1, 'Analytics');
6 INSERT INTO Departments (DepName, DepID) VALUES ('Database Architecture', 2);
7 INSERT INTO Departments VALUES (3, 'Database Administration');
8 INSERT INTO Departments (DepName, DepID) VALUES ('Cyber Security', 4);
9
10 /* * * EMPLOYEES * * */
11
12 /* Inserting my Analysts into my Employees Table */
13
14 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Birthdate, Height, BossID) VALUES (1, 1, 'Hart', 'Ariez', '1991-02-20', 1.63, 1);
15 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, BossID) VALUES (2, 1, 'Chaney', 'Jason', 1);
16 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, BossID) VALUES (3, 1, 'Anderson', 'Nia', 2);
17 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, BossID) VALUES (4, 1, 'Wright', 'Holly', 2);
18 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, BossID) VALUES (5, 1, 'Goldberg', 'Abram', 2);
19
20 /* Inserting my Database Architecture Staff into my Employees Table */
21
22 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (6, 2, 'Christilaw', 'Dennis', NULL, 2);
23 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (7, 2, 'Sesarla', 'Mohammad', NULL, 2);
24 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (8, 2, 'McInerney', 'Denise', NULL, 2);
25 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (9, 2, 'Shapira', 'Curtis', NULL, 3);
26 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (10, 2, 'Liu', 'Linda', NULL, 2);
27 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (11, 2, 'Booker', 'Adam', 1.89, 3);
28 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, BossID) VALUES (12, 2, 'Redhat', 'Carmen', 3);
29
30 /* Inserting my Database Administrators into my Employees Table */
31
32 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Birthdate, Height, BossID) VALUES (13, 3, 'Othus', 'David', '1966-04-19', 1.86, 4);
33 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (14, 3, 'Jackson', 'Hunter', NULL, 4);
34 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (15, 3, 'Davis', 'Bradley', NULL, 4);
35 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (16, 3, 'Wadhwa', 'Sanjay', NULL, 5);
```

```
C:\Users\ariez\OneDrive\Documents\SQL Server Management Studio\myCompanyInsertingFeildsIntoTables.sql
36 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (17, 3, 'Snezana', 'Sahter', NULL, 5);
37 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (18, 3, 'Umit', 'Yalcinalp', NULL, 5);
38
39 /* Inserting my Cyber Security Staff into my Employees Table */
40
41 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (19, 4, 'Johnson', 'Alexa', 1.70, 6);
42 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (20, 4, 'Whitehat', 'Robby', NULL, 6);
43 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (21, 4, 'Whitehat', 'Nathan', NULL, 6);
44 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (22, 4, 'Greyhat', 'Sue', NULL, 7);
45 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (23, 4, 'Whitehat', 'Mohammad', NULL, 7);
46 INSERT INTO Employees (EmployeeID, DepID, Surname, EmployeeName, Height, BossID) VALUES (24, 4, 'Blackhat', 'Justice', NULL, 7);
47
48 /* * * SALARIES * * */
49
50 /* Inserting the Salaries for my Analyst Team */
51
52 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (1, 1, 85000, '2020-02-28');
53 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (2, 2, 96000, '2020-02-28');
54 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (3, 3, 83000, '2020-02-28');
55 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (4, 4, 68000, '2020-02-28');
56 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (5, 5, 83000, '2020-02-28');
57
58 /* Inserting the Salaries for my Database Architect Team */
59
60 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (6, 6, 113000, '2020-02-28');
61 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (7, 7, 145000, '2020-02-28');
62 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (8, 8, 150000, '2020-02-28');
63 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (9, 9, 150000, '2020-02-28');
64 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (10, 10, 112000, '2020-02-28');
65 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (11, 11, 113000, '2020-02-28');
66 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (12, 12, 114000, '2020-02-28');
67
68 /* Inserting the Salaries for my Database Adminstration Team */
69
70 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (13, 13, 160000, '2020-02-28');
```

```
71 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (14, 14, 130000, '2020-02-28');
72 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (15, 15, 100000, '2020-02-28');
73 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (16, 16, 60000, '2020-02-28');
74 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (17, 17, 100000, '2020-02-28');
75 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (18, 18, 100000, '2020-02-28');
76
77 /* Inserting the Salaries for my Cyber Security Team */
78
79 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (19, 19, 113000, '2020-02-28');
80 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (20, 20, 114000, '2020-02-28');
81 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (21, 21, 160000, '2020-02-28');
82 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (22, 22, 150000, '2020-02-28');
83 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (23, 23, 149000, '2020-02-28');
84 INSERT INTO Salaries (SalaryID, PersonID, Gross, SalaryDate) VALUES (24, 24, 120000, '2020-02-28');
85
86 /* * * BONUSES * * */
87
88 INSERT INTO Bonuses VALUES (1, 1, 'First Prize');
89 INSERT INTO Bonuses VALUES (2, 3, 'Second Prize');
90 INSERT INTO Bonuses VALUES (3, 7, 'Third Prize');
```

```
1 SELECT * FROM Employees;
2
3 SELECT * FROM Departments;
4
5 SELECT * FROM Salaries;
6
7 SELECT * FROM Bonuses;
```

	DepID	DepName
1	1	Analytics
2	2	Database Architecture
3	3	Database Administration
4	4	Cyber Security

	EmployeeID	DeptID	Surname	EmployeeName	Birthdate	Height	BossID
1	1	1	Hart	Ariez	1991-02-20 00:00:00.000	1.63	1
2	2	1	Chaney	Jason	NULL	NULL	1
3	3	1	Anderson	Nia	NULL	NULL	2
4	4	1	Wright	Holly	NULL	NULL	2
5	5	1	Goldberg	Abram	NULL	NULL	2
6	6	2	Christilaw	Dennis	NULL	NULL	2
7	7	2	Susarla	Mohammad	NULL	NULL	2
8	8	2	McInerney	Denise	NULL	NULL	2
9	9	2	Shapira	Curtis	NULL	NULL	3
10	10	2	Liu	Linda	NULL	NULL	2
11	11	2	Booker	Adam	NULL	1.89	3
12	12	2	Redhat	Carmen	NULL	NULL	3
13	13	3	Othus	David	1966-04-19 00:00:00.000	1.86	4
14	14	3	Jackson	Hunter	NULL	NULL	4
15	15	3	Davis	Bradley	NULL	NULL	4
16	16	3	Wadhwa	Sanjay	NULL	NULL	5
17	17	3	Snezana	Sahter	NULL	NULL	5
18	18	3	Umit	Yalcinalp	NULL	NULL	5
19	19	4	Johnson	Alexa	NULL	1.7	6
20	20	4	Whitehat	Robby	NULL	NULL	6
21	21	4	Whitehat	Nathan	NULL	NULL	6
22	22	4	Greyhat	Sue	NULL	NULL	7

23	23	4	Whitehat	Mohammad	NULL	NULL	7
24	24	4	Blackhat	Justice	NULL	NULL	7

	SalaryID	PersonID	Gross	SalaryDate
1	1	1	85000.00	2020-02-28 00:00:00.000
2	2	2	96000.00	2020-02-28 00:00:00.000
3	3	3	83000.00	2020-02-28 00:00:00.000
4	4	4	68000.00	2020-02-28 00:00:00.000
5	5	5	83000.00	2020-02-28 00:00:00.000
6	6	6	113000.00	2020-02-28 00:00:00.000
7	7	7	145000.00	2020-02-28 00:00:00.000
8	8	8	150000.00	2020-02-28 00:00:00.000
9	9	9	150000.00	2020-02-28 00:00:00.000
10	10	10	112000.00	2020-02-28 00:00:00.000
11	11	11	113000.00	2020-02-28 00:00:00.000
12	12	12	114000.00	2020-02-28 00:00:00.000
13	13	13	160000.00	2020-02-28 00:00:00.000
14	14	14	130000.00	2020-02-28 00:00:00.000
15	15	15	100000.00	2020-02-28 00:00:00.000
16	16	16	60000.00	2020-02-28 00:00:00.000
17	17	17	100000.00	2020-02-28 00:00:00.000
18	18	18	100000.00	2020-02-28 00:00:00.000
19	19	19	113000.00	2020-02-28 00:00:00.000
20	20	20	114000.00	2020-02-28 00:00:00.000
21	21	21	160000.00	2020-02-28 00:00:00.000
22	22	22	150000.00	2020-02-28 00:00:00.000

23	23	23	149000.00	2020-02-28 00:00:00.000
24	24	24	120000.00	2020-02-28 00:00:00.000

BonusID	PersonID	Descript
1	1	First Prize
2	2	Second Prize
3	7	Third Prize

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```
1 SELECT EmployeeID, DepID, Surname, EmployeeName, BossID  
2 FROM Employees;
```

1

	EmployeeID	DepID	Surname	EmployeeName	BossID
1	1	1	Hart	Ariez	1
2	2	1	Chaney	Jason	1
3	3	1	Anderson	Nia	2
4	4	1	Wright	Holly	2
5	5	1	Goldberg	Abram	2
6	6	2	Christilaw	Dennis	2
7	7	2	Susarla	Mohammad	2
8	8	2	McInerney	Denise	2
9	9	2	Shapira	Curtis	3
10	10	2	Liu	Linda	2
11	11	2	Booker	Adam	3
12	12	2	Redhat	Carmen	3
13	13	3	Othus	David	4
14	14	3	Jackson	Hunter	4
15	15	3	Davis	Bradley	4
16	16	3	Wadhwa	Sanjay	5
17	17	3	Snezana	Sahter	5
18	18	3	Umit	Yalcinalp	5
19	19	4	Johnson	Alexa	6
20	20	4	Whitehat	Robby	6
21	21	4	Whitehat	Nathan	6
22	22	4	Greyhat	Sue	7
23	23	4	Whitehat	Mohammad	7
24	24	4	Blackhat	Justice	7

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```
1 SELECT EmployeeID, DepID AS DepartmentID, Surname AS LastName, EmployeeName /*AS*/ →
    FirstName, BossID Boss
2 FROM Employees;
```

	EmployeeID	DepartmentID	LastName	FirstName	Boss
1	1	1	Hart	Ariez	1
2	2	1	Chaney	Jason	1
3	3	1	Anderson	Nia	2
4	4	1	Wright	Holly	2
5	5	1	Goldberg	Abram	2
6	6	2	Christilaw	Dennis	2
7	7	2	Susarla	Mohammad	2
8	8	2	McInerney	Denise	2
9	9	2	Shapira	Curtis	3
10	10	2	Liu	Linda	2
11	11	2	Booker	Adam	3
12	12	2	Redhat	Carmen	3
13	13	3	Othus	David	4
14	14	3	Jackson	Hunter	4
15	15	3	Davis	Bradley	4
16	16	3	Wadhwa	Sanjay	5
17	17	3	Snezana	Sahter	5
18	18	3	Umit	Yalcinalp	5
19	19	4	Johnson	Alexa	6
20	20	4	Whitehat	Robby	6
21	21	4	Whitehat	Nathan	6
22	22	4	Greyhat	Sue	7
23	23	4	Whitehat	Mohammad	7
24	24	4	Blackhat	Justice	7

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```
1 SELECT PersonID, Gross, 5 AS percent_increase, gross * 1.05 AS new_salary
2 FROM Salaries;
```

1

PersonID		Gross	percent_increase	new_salary
1	1	85000.00	5	89250.000000
2	2	96000.00	5	100800.000000
3	3	83000.00	5	87150.000000
4	4	68000.00	5	71400.000000
5	5	83000.00	5	87150.000000
6	6	113000.00	5	118650.000000
7	7	145000.00	5	152250.000000
8	8	150000.00	5	157500.000000
9	9	150000.00	5	157500.000000
10	10	112000.00	5	117600.000000
11	11	113000.00	5	118650.000000
12	12	114000.00	5	119700.000000
13	13	160000.00	5	168000.000000
14	14	130000.00	5	136500.000000
15	15	100000.00	5	105000.000000
16	16	60000.00	5	63000.000000
17	17	100000.00	5	105000.000000
18	18	100000.00	5	105000.000000
19	19	113000.00	5	118650.000000
20	20	114000.00	5	119700.000000
21	21	160000.00	5	168000.000000
22	22	150000.00	5	157500.000000
23	23	149000.00	5	156450.000000
24	24	120000.00	5	126000.000000

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```
1 SELECT Surname + ' ' + EmployeeName AS FullName, BossID AS Boss
2 FROM Employees;
```

1

```
1 SELECT EmployeeName + ' ' + Surname AS FullName, BossID AS Boss
2 FROM Employees
3 WHERE Birthdate IS NULL
4 ORDER BY Surname DESC;
5
6 /* Shows employees and their associated bosses for which birthdays are not known ↵
*/
```

	FullName	Boss
1	Holly Wright	2
2	Robby Whitehat	6
3	Nathan Whitehat	6
4	Mohammad Whitehat	7
5	Sanjay Wadhwa	5
6	Yalcinalp Umit	5
7	Mohammad Susarla	2
8	Sahter Snezana	5
9	Curtis Shapira	3
10	Carmen Redhat	3
11	Denise McInerney	2
12	Linda Liu	2
13	Alexa Johnson	6
14	Hunter Jackson	4
15	Sue Greyhat	7
16	Abram Goldberg	2
17	Bradley Davis	4
18	Dennis Christilaw	2
19	Jason Chaney	1
20	Adam Booker	3
21	Justice Blackhat	7
22	Nia Anderson	2

```
1 SELECT EmployeeName, Surname
2 FROM Employees
3 WHERE Birthdate BETWEEN '1950-01-01' AND '2000-01-01';
4
5 /* Shows employees with birthdays between 01/01/1950 and 01/01/2000 */
6
```

EmployeeName

Surname

1	Ariez	Hart
2	David	Othus

```
1 /* Updating the Birthdates for the Employees */
2
3 UPDATE Employees
4 SET Birthdate='2001-01-02'
5 WHERE EmployeeName = 'Holly' AND Surname = 'Wright';
6
7 UPDATE Employees
8 SET Birthdate='1980-10-21'
9 WHERE EmployeeName = 'Nia' AND Surname = 'Anderson';
10
11 UPDATE Employees
12 SET Birthdate='1983-10-31'
13 WHERE EmployeeName = 'Abram' AND Surname = 'Goldberg';
14
15 UPDATE Employees
16 SET Birthdate='1989-03-01'
17 WHERE EmployeeID = 7;
18
19 UPDATE Employees
20 SET Birthdate='1990-04-01'
21 WHERE EmployeeID = 8;
22
23 UPDATE Employees
24 SET Birthdate='1997-12-15'
25 WHERE EmployeeID = 9;
26
27 UPDATE Employees
28 SET Birthdate='1965-12-23'
29 WHERE EmployeeID = 10;
30
31 UPDATE Employees
32 SET Birthdate='1990-10-12'
33 WHERE EmployeeID = 11;
34
35 UPDATE Employees
36 SET Birthdate='1970-09-13'
37 WHERE EmployeeID = 12;
38
39 UPDATE Employees
40 SET Birthdate='1960-09-04'
41 WHERE EmployeeID = 14;
42
43 UPDATE Employees
44 SET Birthdate='1971-08-14'
45 WHERE EmployeeID = 15;
46 SELECT * FROM Employees;
47
48 UPDATE Employees
49 SET Birthdate='1960-07-17'
```

```
50 WHERE EmployeeID = 16;
51
52 UPDATE Employees
53 SET Birthdate='1967-06-28'
54 WHERE EmployeeID = 17;
55
56 UPDATE Employees
57 SET Birthdate='1968-05-25'
58 WHERE EmployeeID = 18;
59
60 UPDATE Employees
61 SET Birthdate='1969-04-21'
62 WHERE EmployeeID = 19;
63
64 UPDATE Employees
65 SET Birthdate='1972-03-26'
66 WHERE EmployeeID = 20;
67
68 UPDATE Employees
69 SET Birthdate='1999-02-28'
70 WHERE EmployeeID = 21;
71
72 UPDATE Employees
73 SET Birthdate='1998-01-04'
74 WHERE EmployeeID = 22;
75
76 UPDATE Employees
77 SET Birthdate='1997-04-04'
78 WHERE EmployeeID = 23;
79
80 UPDATE Employees
81 SET Birthdate='1995-01-31'
82 WHERE EmployeeID = 24;
83
84 SELECT * FROM Employees;
```

	EmployeeID	DeptID	Surname	EmployeeName	Birthdate	Height	BossID
1	1	1	Hart	Ariez	1991-02-20 00:00:00.000	1.63	1
2	2	1	Chaney	Jason	NULL	NULL	1
3	3	1	Anderson	Nia	1980-10-21 00:00:00.000	NULL	2
4	4	1	Wright	Holly	2001-01-02 00:00:00.000	NULL	2
5	5	1	Goldberg	Abram	1983-10-31 00:00:00.000	NULL	2
6	6	2	Christilaw	Dennis	NULL	NULL	2
7	7	2	Susarla	Mohammad	1989-03-01 00:00:00.000	NULL	2
8	8	2	McInerney	Denise	1990-04-01 00:00:00.000	NULL	2
9	9	2	Shapira	Curtis	1997-12-15 00:00:00.000	NULL	3
10	10	2	Liu	Linda	1965-12-23 00:00:00.000	NULL	2
11	11	2	Booker	Adam	1990-10-12 00:00:00.000	1.89	3
12	12	2	Redhat	Carmen	1970-09-13 00:00:00.000	NULL	3
13	13	3	Othus	David	1966-04-19 00:00:00.000	1.86	4
14	14	3	Jackson	Hunter	1960-09-04 00:00:00.000	NULL	4
15	15	3	Davis	Bradley	1971-08-14 00:00:00.000	NULL	4
16	16	3	Wadhwa	Sanjay	1960-07-17 00:00:00.000	NULL	5
17	17	3	Snezana	Sahter	1967-06-28 00:00:00.000	NULL	5
18	18	3	Umit	Yalcinalp	1968-05-25 00:00:00.000	NULL	5
19	19	4	Johnson	Alexa	1969-04-21 00:00:00.000	1.7	6
20	20	4	Whitehat	Robby	1972-03-26 00:00:00.000	NULL	6
21	21	4	Whitehat	Nathan	1999-02-28 00:00:00.000	NULL	6
22	22	4	Greyhat	Sue	1998-01-04 00:00:00.000	NULL	7

23	23	4	Whitehat	Mohammad	1997-04-04 00:00:00.000	NULL	7
24	24	4	Blackhat	Justice	1995-01-31 00:00:00.000	NULL	7

```
1 /* Updating the Heights for the Employees */
2
3 UPDATE Employees
4 SET Height=1.37
5 WHERE EmployeeName = 'Holly' AND Surname = 'Wright';
6
7 UPDATE Employees
8 SET Height=1.27
9 WHERE EmployeeName = 'Nia' AND Surname = 'Anderson';
10
11 UPDATE Employees
12 SET Height=1.86
13 WHERE EmployeeName = 'Abram' AND Surname = 'Goldberg';
14
15 UPDATE Employees
16 SET Height=1.58
17 WHERE EmployeeID = 7;
18
19 UPDATE Employees
20 SET Height=1.05
21 WHERE EmployeeID = 8;
22
23 UPDATE Employees
24 SET Height=1.30
25 WHERE EmployeeID = 9;
26
27 UPDATE Employees
28 SET Height=1.70
29 WHERE EmployeeID = 10;
30
31 /* We already had Booker's Height*/
32
33 UPDATE Employees
34 SET Height=1.79
35 WHERE EmployeeID = 12;
36
37 /* We already had David's Height*/
38
39 UPDATE Employees
40 SET Height=1.47
41 WHERE EmployeeID = 14;
42
43 UPDATE Employees
44 SET Height=1.43
45 WHERE EmployeeID = 15;
46 SELECT * FROM Employees;
47
48 UPDATE Employees
49 SET Height=1.90
```

```
50 WHERE EmployeeID = 16;
51
52 UPDATE Employees
53 SET Height=1.37
54 WHERE EmployeeID = 17;
55
56 UPDATE Employees
57 SET Height=1.09
58 WHERE EmployeeID = 18;
59
60 /* We already had Alexa's height */
61
62 UPDATE Employees
63 SET Height=1.43
64 WHERE EmployeeID = 20;
65
66 UPDATE Employees
67 SET Height=1.82
68 WHERE EmployeeID = 21;
69
70 UPDATE Employees
71 SET Height=1.65
72 WHERE EmployeeID = 22;
73
74 UPDATE Employees
75 SET Height=1.73
76 WHERE EmployeeID = 23;
77
78 UPDATE Employees
79 SET Height=1.75
80 WHERE EmployeeID = 24;
81
82 SELECT * FROM Employees;
```

	EmployeeID	DeptID	Surname	EmployeeName	Birthdate	Height	BossID
1	1	1	Hart	Ariez	1991-02-20 00:00:00.000	1.63	1
2	2	1	Chaney	Jason	NULL	NULL	1
3	3	1	Anderson	Nia	1980-10-21 00:00:00.000	1.27	2
4	4	1	Wright	Holly	2001-01-02 00:00:00.000	1.37	2
5	5	1	Goldberg	Abram	1983-10-31 00:00:00.000	1.86	2
6	6	2	Christilaw	Dennis	NULL	NULL	2
7	7	2	Susarla	Mohammad	1989-03-01 00:00:00.000	1.58	2
8	8	2	McInerney	Denise	1990-04-01 00:00:00.000	1.05	2
9	9	2	Shapira	Curtis	1997-12-15 00:00:00.000	1.3	3
10	10	2	Liu	Linda	1965-12-23 00:00:00.000	1.7	2
11	11	2	Booker	Adam	1990-10-12 00:00:00.000	1.89	3
12	12	2	Redhat	Carmen	1970-09-13 00:00:00.000	1.79	3
13	13	3	Othus	David	1966-04-19 00:00:00.000	1.86	4
14	14	3	Jackson	Hunter	1960-09-04 00:00:00.000	1.47	4
15	15	3	Davis	Bradley	1971-08-14 00:00:00.000	1.43	4
16	16	3	Wadhwa	Sanjay	1960-07-17 00:00:00.000	1.9	5
17	17	3	Snezana	Sahter	1967-06-28 00:00:00.000	1.37	5
18	18	3	Umit	Yalcinalp	1968-05-25 00:00:00.000	1.09	5
19	19	4	Johnson	Alexa	1969-04-21 00:00:00.000	1.7	6
20	20	4	Whitehat	Robby	1972-03-26 00:00:00.000	1.43	6
21	21	4	Whitehat	Nathan	1999-02-28 00:00:00.000	1.82	6
22	22	4	Greyhat	Sue	1998-01-04 00:00:00.000	1.65	7

23	23	4	Whitehat	Mohammad	1997-04-04 00:00:00.000	1.73	7
24	24	4	Blackhat	Justice	1995-01-31 00:00:00.000	1.75	7

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1

```
1 SELECT EmployeeName, Surname, Birthdate
2 FROM Employees
3 WHERE Surname = 'Whitehat';
```

	EmployeeName	Surname	Birthdate
1	Robby	Whitehat	1972-03-26 00:00:00.000
2	Nathan	Whitehat	1999-02-28 00:00:00.000
3	Mohammad	Whitehat	1997-04-04 00:00:00.000

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1

```
1 SELECT *
2 FROM Employees
3 WHERE Birthdate >= '1984-01-01';
```

	EmployeeID	DepID	Surname	EmployeeName
1	1	1	Hart	Ariez
2	4	1	Wright	Holly
3	7	2	Susarla	Mohammad
4	8	2	McInerney	Denise
5	9	2	Shapira	Curtis
6	11	2	Booker	Adam
7	21	4	Whitehat	Nathan
8	22	4	Greyhat	Sue
9	23	4	Whitehat	Mohammad
10	24	4	Blackhat	Justice

Birthdate	Height	BossID
1991-02-20 00:00:00.000	1.63	1
2001-01-02 00:00:00.000	1.37	2
1989-03-01 00:00:00.000	1.58	2
1990-04-01 00:00:00.000	1.05	2
1997-12-15 00:00:00.000	1.3	3
1990-10-12 00:00:00.000	1.89	3
1999-02-28 00:00:00.000	1.82	6
1998-01-04 00:00:00.000	1.65	7
1997-04-04 00:00:00.000	1.73	7
1995-01-31 00:00:00.000	1.75	7

```
1 SELECT EmployeeName, Surname, Birthdate
2 FROM Employees
3 WHERE Birthdate <> '1991-02-20'
4 ORDER BY Birthdate ASC;
```

	EmployeeName	Surname	Birthdate
1	Sanjay	Wadhwa	1960-07-17 00:00:00.000
2	Hunter	Jackson	1960-09-04 00:00:00.000
3	Linda	Liu	1965-12-23 00:00:00.000
4	David	Othus	1966-04-19 00:00:00.000
5	Sahter	Snezana	1967-06-28 00:00:00.000
6	Yalcinalp	Umit	1968-05-25 00:00:00.000
7	Alexa	Johnson	1969-04-21 00:00:00.000
8	Carmen	Redhat	1970-09-13 00:00:00.000
9	Bradley	Davis	1971-08-14 00:00:00.000
10	Robby	Whitehat	1972-03-26 00:00:00.000
11	Nia	Anderson	1980-10-21 00:00:00.000
12	Abram	Goldberg	1983-10-31 00:00:00.000
13	Mohammad	Susarla	1989-03-01 00:00:00.000
14	Denise	McInerney	1990-04-01 00:00:00.000
15	Adam	Booker	1990-10-12 00:00:00.000
16	Justice	Blackhat	1995-01-31 00:00:00.000
17	Mohammad	Whitehat	1997-04-04 00:00:00.000
18	Curtis	Shapira	1997-12-15 00:00:00.000
19	Sue	Greyhat	1998-01-04 00:00:00.000
20	Nathan	Whitehat	1999-02-28 00:00:00.000
21	Holly	Wright	2001-01-02 00:00:00.000

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1

```
1 SELECT *
2 FROM Salaries
3 WHERE Gross > 100000;
```

	SalaryID	PersonID	Gross	SalaryDate
1	6	6	113000.00	2020-02-28 00:00:00.000
2	7	7	145000.00	2020-02-28 00:00:00.000
3	8	8	150000.00	2020-02-28 00:00:00.000
4	9	9	150000.00	2020-02-28 00:00:00.000
5	10	10	112000.00	2020-02-28 00:00:00.000
6	11	11	113000.00	2020-02-28 00:00:00.000
7	12	12	114000.00	2020-02-28 00:00:00.000
8	13	13	160000.00	2020-02-28 00:00:00.000
9	14	14	130000.00	2020-02-28 00:00:00.000
10	19	19	113000.00	2020-02-28 00:00:00.000
11	20	20	114000.00	2020-02-28 00:00:00.000
12	21	21	160000.00	2020-02-28 00:00:00.000
13	22	22	150000.00	2020-02-28 00:00:00.000
14	23	23	149000.00	2020-02-28 00:00:00.000
15	24	24	120000.00	2020-02-28 00:00:00.000

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1

```
1 SELECT *
2 FROM Employees
3 WHERE Birthdate IS NULL;
```

	EmployeeID	DepID	Surname	EmployeeName	Birthdate
1	2	1	Chaney	Jason	NULL
2	6	2	Christilaw	Dennis	NULL

Height BossID

NULL	1
NULL	2

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1

```
1 SELECT *
2 FROM Employees
3 WHERE Birthdate IS NOT NULL;
```

	EmployeeID	DeptID	Surname	EmployeeName
1	1	1	Hart	Ariez
2	3	1	Anderson	Nia
3	4	1	Wright	Holly
4	5	1	Goldberg	Abram
5	7	2	Susarla	Mohammad
6	8	2	McInerney	Denise
7	9	2	Shapira	Curtis
8	10	2	Liu	Linda
9	11	2	Booker	Adam
10	12	2	Redhat	Carmen
11	13	3	Othus	David
12	14	3	Jackson	Hunter
13	15	3	Davis	Bradley
14	16	3	Wadhwa	Sanjay
15	17	3	Snezana	Sahter
16	18	3	Umit	Yalcinalp
17	19	4	Johnson	Alexa
18	20	4	Whitehat	Robby
19	21	4	Whitehat	Nathan
20	22	4	Greyhat	Sue
21	23	4	Whitehat	Mohammad
22	24	4	Blackhat	Justice

Birthdate	Height	BossID
1991-02-20 00:00:00.000	1.63	1
1980-10-21 00:00:00.000	1.27	2
2001-01-02 00:00:00.000	1.37	2
1983-10-31 00:00:00.000	1.86	2
1989-03-01 00:00:00.000	1.58	2
1990-04-01 00:00:00.000	1.05	2
1997-12-15 00:00:00.000	1.3	3
1965-12-23 00:00:00.000	1.7	2
1990-10-12 00:00:00.000	1.89	3
1970-09-13 00:00:00.000	1.79	3
1966-04-19 00:00:00.000	1.86	4
1960-09-04 00:00:00.000	1.47	4
1971-08-14 00:00:00.000	1.43	4
1960-07-17 00:00:00.000	1.9	5
1967-06-28 00:00:00.000	1.37	5
1968-05-25 00:00:00.000	1.09	5
1969-04-21 00:00:00.000	1.7	6
1972-03-26 00:00:00.000	1.43	6
1999-02-28 00:00:00.000	1.82	6
1998-01-04 00:00:00.000	1.65	7
1997-04-04 00:00:00.000	1.73	7
1995-01-31 00:00:00.000	1.75	7

```
1 SELECT EmployeeName, Surname, Birthdate
2 FROM Employees
3 WHERE Birthdate BETWEEN '1996-02-19' AND '2008-02-07';
4
5 /* This is the same as */
6
7 SELECT EmployeeName, Surname, Birthdate
8 FROM Employees
9 WHERE Birthdate >= '1996-02-19' AND Birthdate <= '2008-02-07';
```

	EmployeeName	Surname	Birthdate
1	Holly	Wright	2001-01-02 00:00:00.000
2	Curtis	Shapira	1997-12-15 00:00:00.000
3	Nathan	Whitehat	1999-02-28 00:00:00.000
4	Sue	Greyhat	1998-01-04 00:00:00.000
5	Mohammad	Whitehat	1997-04-04 00:00:00.000

	EmployeeName	Surname	Birthdate
1	Curtis	Shapira	1997-12-15 00:00:00.000
2	Denise	McInerney	1990-04-01 00:00:00.000
3	Dennis	Christilaw	NULL
4	Holly	Wright	2001-01-02 00:00:00.000
5	Hunter	Jackson	1960-09-04 00:00:00.000
6	Justice	Blackhat	1995-01-31 00:00:00.000
7	Robby	Whitehat	1972-03-26 00:00:00.000
8	Sue	Greyhat	1998-01-04 00:00:00.000

	EmployeeName	Surname	Birthdate
1	Mohammad	Susarla	1989-03-01 00:00:00.000
2	Mohammad	Whitehat	1997-04-04 00:00:00.000

	EmployeeName	Surname	Birthdate
1	Abram	Goldberg	1983-10-31 00:00:00.000
2	Adam	Booker	1990-10-12 00:00:00.000
3	Carmen	Redhat	1970-09-13 00:00:00.000
4	Mohammad	Whitehat	1997-04-04 00:00:00.000
5	Mohammad	Susarla	1989-03-01 00:00:00.000

	EmployeeName	Surname	Birthdate
1	Abram	Goldberg	1983-10-31 00:00:00.000
2	Adam	Booker	1990-10-12 00:00:00.000

	EmployeeName	Surname	Birthdate
1	Carmen	Redhat	1970-09-13 00:00:00.000

	EmployeeName	Surname	Birthdate
1	Abram	Goldberg	1983-10-31 00:00:00.000
2	Adam	Booker	1990-10-12 00:00:00.000
3	Alexa	Johnson	1969-04-21 00:00:00.000
4	Ariez	Hart	1991-02-20 00:00:00.000
5	Bradley	Davis	1971-08-14 00:00:00.000
6	Carmen	Redhat	1970-09-13 00:00:00.000
7	David	Othus	1966-04-19 00:00:00.000
8	Jason	Chaney	NULL
9	Linda	Liu	1965-12-23 00:00:00.000
10	Mohammad	Whitehat	1997-04-04 00:00:00.000
11	Mohammad	Susarla	1989-03-01 00:00:00.000
12	Nathan	Whitehat	1999-02-28 00:00:00.000
13	Nia	Anderson	1980-10-21 00:00:00.000
14	Sahter	Snezana	1967-06-28 00:00:00.000
15	Sanjay	Wadhwa	1960-07-17 00:00:00.000
16	Yalcinalp	Umit	1968-05-25 00:00:00.000

	EmployeeName	Surname	Birthdate
1	Curtis	Shapira	1997-12-15 00:00:00.000
2	Denise	McInerney	1990-04-01 00:00:00.000
3	Dennis	Christilaw	NULL
4	Holly	Wright	2001-01-02 00:00:00.000
5	Hunter	Jackson	1960-09-04 00:00:00.000
6	Justice	Blackhat	1995-01-31 00:00:00.000
7	Robby	Whitehat	1972-03-26 00:00:00.000
8	Sue	Greyhat	1998-01-04 00:00:00.000

```
1 SELECT EmployeeName, Surname, Birthdate, Gross, SalaryDate
2 FROM Employees, Salaries
3 WHERE EmployeeID = PersonID;
4
5 /* Same Code, Improved Readability (you can tell which table each column is from) ↵
   */
6
7 SELECT Employees.EmployeeName, Employees.Surname, Employees.Birthdate,
       Salaries.Gross, Salaries.SalaryDate
8 FROM Employees, Salaries
9 WHERE EmployeeID = PersonID;
10
11 /* Same code, using aliases to cut down on typing time */
12
13 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
14 FROM Employees as e, Salaries as s
15 WHERE e.EmployeeID = s.PersonID;
16
17 /* Same code, using aliases to cut down on typing time, cutting out clutter      ↵
   keywords */
18
19 Select e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
20 From Employees e, Salaries s
21 WHERE e.EmployeeID = s.PersonID;
22
23 /* Ordering Table */
24
25 SELECT EmployeeName, Birthdate, Gross, SalaryDate
26 FROM Employees, Salaries
27 WHERE EmployeeID = PersonID
28 ORDER BY Surname /* ASC */;
29
30 /* Explicitly Joining the Tables together using the Join command */
31
32 SELECT e.EmployeeName, e.Birthdate, s.Gross, s.SalaryDate
33 FROM Employees e JOIN Salaries s
34 ON e.EmployeeID = s.PersonID
35 ORDER BY e.Surname;
36
37 /* Performing a Left Outer Join */
38 -- selects all the columns from the first table after the FROM
39 -- clause, regardless of whether or not they have matches in
40 -- the second table.
41
42 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
43 FROM Employees e LEFT OUTER JOIN Salaries s
44 ON e.EmployeeID = s.PersonID
45 ORDER BY e.Surname;
46
```

```
47 /* OUTER is a Clutter Word, same code, same output, less typing */
48
49 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
50 FROM Employees e LEFT JOIN Salaries s
51 ON e.EmployeeID = s.PersonID
52 ORDER BY e.Surname;
53
54 /* Performing a Right Outer Join */
55 -- selects all the columns from the second table after the
56 -- FROM clause, regardless of whether or not they have
57 -- matches in the second table.
58
59 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
60 FROM Employees e RIGHT /* OUTER */ JOIN Salaries s
61 ON e.EmployeeID = s.PersonID
62 ORDER BY e.Surname;
63
64 /* Performing a Full Outer Join*/
65 --Returns all the rows whether they have matches or not
66
67 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
68 FROM Employees AS e FULL OUTER JOIN Salaries AS s
69 ON e.EmployeeID = s.PersonID
70 ORDER BY e.Surname;
71
72 /* less clutter */
73
74 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
75 FROM Employees e FULL JOIN Salaries s
76 ON e.EmployeeID = s.PersonID
77 ORDER BY e.Surname;
78
79 /* Using the WHERE clause to further restrict results */
80 -- Employees who have annual salaries > $100,000
81
82 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
83 FROM Employees e, Salaries s
84 WHERE e.EmployeeID = s.PersonID
85 AND s.gross > 100000
86 ORDER BY e.Surname;
87
88 /* Using the WHERE clause to further restrict results */
89 -- Employees who H before an A somewhere in their name
90
91
92 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
93 FROM Employees e LEFT JOIN Salaries s
94 ON e.EmployeeID = s.PersonId
95 WHERE e.Surname LIKE '%h%a%'
```

```
96 ORDER BY Surname;
97
98 /* Using the WHERE clause to further restrict results */
99 -- Employees who H before an A somewhere in their name
100 -- OR that have a salary > $100,000
101
102 SELECT e.EmployeeName, e.Surname, e.Birthdate, s.Gross, s.Salarydate
103 FROM Employees e LEFT JOIN Salaries s
104 ON e.EmployeeID = s.PersonId
105 WHERE e.Surname LIKE '%h%a%' OR s.gross > 100000
106 ORDER BY Surname;
107
108 /*Three Way Join*/
109
110 SELECT d.DepName, e.EmployeeName AS Name, e.Surname AS Last, s.Gross
111 FROM Employees AS e, Salaries AS s, Departments as D
112 WHERE e.EmployeeID = s.PersonID
113 AND e.DepID = d.DepID
114 ORDER BY d.DepID, e.Surname;
115
116 SELECT d.DepName DepartmentName, e.EmployeeName FirstName, e.Surname LastName,
117     s.Gross AnnualGross, s.Salarydate SalaryReviewDate
118 FROM Employees e
119 JOIN Salaries s ON e.EmployeeID = s.PersonID
120 JOIN Departments d ON e.DepID = d.DepID
121 ORDER BY d.DepID DESC, e.Surname ASC;
122
123 SELECT d.DepName DepartmentName, e.EmployeeName FirstName, e.Surname LastName,
124     s.Gross AnnualGross, s.Salarydate SalaryReviewDate
125 FROM Employees e
126 JOIN Salaries s ON e.EmployeeID = s.PersonID
127 JOIN Departments d ON e.DepID = d.DepID
128 WHERE e.Surname LIKE '%at'
129 ORDER BY d.DepID, e.Surname;
130
131 /* Showing all Columns*/
132
133 SELECT * FROM
134 Employees AS e, Salaries AS s, Departments as D
135 WHERE e.EmployeeID = s.PersonID
136 AND e.DepID = d.DepID
137 ORDER BY d.DepID ASC, e.Surname ASC, s.SalaryDate ASC;
```

	EmployeeName	Surname	Birthdate	Gross
1	Ariez	Hart	1991-02-20 00:00:00.000	85000.00
2	Jason	Chaney	NULL	96000.00
3	Nia	Anderson	1980-10-21 00:00:00.000	83000.00
4	Holly	Wright	2001-01-02 00:00:00.000	68000.00
5	Abram	Goldberg	1983-10-31 00:00:00.000	83000.00
6	Dennis	Christilaw	NULL	113000.00
7	Mohammad	Susarla	1989-03-01 00:00:00.000	145000.00
8	Denise	McInerney	1990-04-01 00:00:00.000	150000.00
9	Curtis	Shapira	1997-12-15 00:00:00.000	150000.00
10	Linda	Liu	1965-12-23 00:00:00.000	112000.00
11	Adam	Booker	1990-10-12 00:00:00.000	113000.00
12	Carmen	Redhat	1970-09-13 00:00:00.000	114000.00
13	David	Othus	1966-04-19 00:00:00.000	160000.00
14	Hunter	Jackson	1960-09-04 00:00:00.000	130000.00
15	Bradley	Davis	1971-08-14 00:00:00.000	100000.00
16	Sanjay	Wadhwa	1960-07-17 00:00:00.000	60000.00
17	Sahter	Snezana	1967-06-28 00:00:00.000	100000.00
18	Yalcinalp	Umit	1968-05-25 00:00:00.000	100000.00
19	Alexa	Johnson	1969-04-21 00:00:00.000	113000.00
20	Robby	Whitehat	1972-03-26 00:00:00.000	114000.00
21	Nathan	Whitehat	1999-02-28 00:00:00.000	160000.00
22	Sue	Greyhat	1998-01-04 00:00:00.000	150000.00
23	Mohammad	Whitehat	1997-04-04 00:00:00.000	149000.00
24	Justice	Blackhat	1995-01-31 00:00:00.000	120000.00

SalaryDate

	EmployeeName	Birthdate	Gross
1	Nia	1980-10-21 00:00:00.000	83000.00
2	Justice	1995-01-31 00:00:00.000	120000.00
3	Adam	1990-10-12 00:00:00.000	113000.00
4	Jason	NULL	96000.00
5	Dennis	NULL	113000.00
6	Bradley	1971-08-14 00:00:00.000	100000.00
7	Abram	1983-10-31 00:00:00.000	83000.00
8	Sue	1998-01-04 00:00:00.000	150000.00
9	Ariez	1991-02-20 00:00:00.000	85000.00
10	Hunter	1960-09-04 00:00:00.000	130000.00
11	Alexa	1969-04-21 00:00:00.000	113000.00
12	Linda	1965-12-23 00:00:00.000	112000.00
13	Denise	1990-04-01 00:00:00.000	150000.00
14	David	1966-04-19 00:00:00.000	160000.00
15	Carmen	1970-09-13 00:00:00.000	114000.00
16	Curtis	1997-12-15 00:00:00.000	150000.00
17	Sahter	1967-06-28 00:00:00.000	100000.00
18	Mohammad	1989-03-01 00:00:00.000	145000.00
19	Yalcinalp	1968-05-25 00:00:00.000	100000.00
20	Sanjay	1960-07-17 00:00:00.000	60000.00
21	Robby	1972-03-26 00:00:00.000	114000.00
22	Nathan	1999-02-28 00:00:00.000	160000.00
23	Mohammad	1997-04-04 00:00:00.000	149000.00
24	Holly	2001-01-02 00:00:00.000	68000.00

SalaryDate

	EmployeeName	Surname	Birthdate	Gross
1	Nia	Anderson	1980-10-21 00:00:00.000	83000.00
2	Justice	Blackhat	1995-01-31 00:00:00.000	120000.00
3	Adam	Booker	1990-10-12 00:00:00.000	113000.00
4	Jason	Chaney	NULL	96000.00
5	Dennis	Christilaw	NULL	113000.00
6	Bradley	Davis	1971-08-14 00:00:00.000	100000.00
7	Abram	Goldberg	1983-10-31 00:00:00.000	83000.00
8	Sue	Greyhat	1998-01-04 00:00:00.000	150000.00
9	Ariez	Hart	1991-02-20 00:00:00.000	85000.00
10	Hunter	Jackson	1960-09-04 00:00:00.000	130000.00
11	Alexa	Johnson	1969-04-21 00:00:00.000	113000.00
12	Linda	Liu	1965-12-23 00:00:00.000	112000.00
13	Denise	McInerney	1990-04-01 00:00:00.000	150000.00
14	David	Othus	1966-04-19 00:00:00.000	160000.00
15	Carmen	Redhat	1970-09-13 00:00:00.000	114000.00
16	Curtis	Shapira	1997-12-15 00:00:00.000	150000.00
17	Sahter	Snezana	1967-06-28 00:00:00.000	100000.00
18	Mohammad	Susarla	1989-03-01 00:00:00.000	145000.00
19	Yalcinalp	Umit	1968-05-25 00:00:00.000	100000.00
20	Sanjay	Wadhwa	1960-07-17 00:00:00.000	60000.00
21	Robby	Whitehat	1972-03-26 00:00:00.000	114000.00
22	Nathan	Whitehat	1999-02-28 00:00:00.000	160000.00
23	Mohammad	Whitehat	1997-04-04 00:00:00.000	149000.00
24	Holly	Wright	2001-01-02 00:00:00.000	68000.00

Salarydate

	EmployeeName	Surname	Birthdate	Gross
1	Nia	Anderson	1980-10-21 00:00:00.000	83000.00
2	Justice	Blackhat	1995-01-31 00:00:00.000	120000.00
3	Adam	Booker	1990-10-12 00:00:00.000	113000.00
4	Jason	Chaney	NULL	96000.00
5	Dennis	Christilaw	NULL	113000.00
6	Bradley	Davis	1971-08-14 00:00:00.000	100000.00
7	Abram	Goldberg	1983-10-31 00:00:00.000	83000.00
8	Sue	Greyhat	1998-01-04 00:00:00.000	150000.00
9	Ariez	Hart	1991-02-20 00:00:00.000	85000.00
10	Hunter	Jackson	1960-09-04 00:00:00.000	130000.00
11	Alexa	Johnson	1969-04-21 00:00:00.000	113000.00
12	Linda	Liu	1965-12-23 00:00:00.000	112000.00
13	Denise	McInerney	1990-04-01 00:00:00.000	150000.00
14	David	Othus	1966-04-19 00:00:00.000	160000.00
15	Carmen	Redhat	1970-09-13 00:00:00.000	114000.00
16	Curtis	Shapira	1997-12-15 00:00:00.000	150000.00
17	Sahter	Snezana	1967-06-28 00:00:00.000	100000.00
18	Mohammad	Susarla	1989-03-01 00:00:00.000	145000.00
19	Yalcinalp	Umit	1968-05-25 00:00:00.000	100000.00
20	Sanjay	Wadhwa	1960-07-17 00:00:00.000	60000.00
21	Robby	Whitehat	1972-03-26 00:00:00.000	114000.00
22	Nathan	Whitehat	1999-02-28 00:00:00.000	160000.00
23	Mohammad	Whitehat	1997-04-04 00:00:00.000	149000.00
24	Holly	Wright	2001-01-02 00:00:00.000	68000.00

Salarydate

	EmployeeName	Surname	Birthdate	Gross
1	Nia	Anderson	1980-10-21 00:00:00.000	83000.00
2	Justice	Blackhat	1995-01-31 00:00:00.000	120000.00
3	Adam	Booker	1990-10-12 00:00:00.000	113000.00
4	Jason	Chaney	NULL	96000.00
5	Dennis	Christilaw	NULL	113000.00
6	Bradley	Davis	1971-08-14 00:00:00.000	100000.00
7	Abram	Goldberg	1983-10-31 00:00:00.000	83000.00
8	Sue	Greyhat	1998-01-04 00:00:00.000	150000.00
9	Ariez	Hart	1991-02-20 00:00:00.000	85000.00
10	Hunter	Jackson	1960-09-04 00:00:00.000	130000.00
11	Alexa	Johnson	1969-04-21 00:00:00.000	113000.00
12	Linda	Liu	1965-12-23 00:00:00.000	112000.00
13	Denise	McInerney	1990-04-01 00:00:00.000	150000.00
14	David	Othus	1966-04-19 00:00:00.000	160000.00
15	Carmen	Redhat	1970-09-13 00:00:00.000	114000.00
16	Curtis	Shapira	1997-12-15 00:00:00.000	150000.00
17	Sahter	Snezana	1967-06-28 00:00:00.000	100000.00
18	Mohammad	Susarla	1989-03-01 00:00:00.000	145000.00
19	Yalcinalp	Umit	1968-05-25 00:00:00.000	100000.00
20	Sanjay	Wadhwa	1960-07-17 00:00:00.000	60000.00
21	Robby	Whitehat	1972-03-26 00:00:00.000	114000.00
22	Nathan	Whitehat	1999-02-28 00:00:00.000	160000.00
23	Mohammad	Whitehat	1997-04-04 00:00:00.000	149000.00
24	Holly	Wright	2001-01-02 00:00:00.000	68000.00

Salarydate

	EmployeeName	Surname	Birthdate	Gross
1	Justice	Blackhat	1995-01-31 00:00:00.000	120000.00
2	Adam	Booker	1990-10-12 00:00:00.000	113000.00
3	Dennis	Christilaw	NULL	113000.00
4	Sue	Greyhat	1998-01-04 00:00:00.000	150000.00
5	Hunter	Jackson	1960-09-04 00:00:00.000	130000.00
6	Alexa	Johnson	1969-04-21 00:00:00.000	113000.00
7	Linda	Liu	1965-12-23 00:00:00.000	112000.00
8	Denise	McInerney	1990-04-01 00:00:00.000	150000.00
9	David	Othus	1966-04-19 00:00:00.000	160000.00
10	Carmen	Redhat	1970-09-13 00:00:00.000	114000.00
11	Curtis	Shapira	1997-12-15 00:00:00.000	150000.00
12	Mohammad	Susarla	1989-03-01 00:00:00.000	145000.00
13	Robby	Whitehat	1972-03-26 00:00:00.000	114000.00
14	Nathan	Whitehat	1999-02-28 00:00:00.000	160000.00
15	Mohammad	Whitehat	1997-04-04 00:00:00.000	149000.00

Salarydate

	EmployeeName	Surname	Birthdate	Gross
1	Justice	Blackhat	1995-01-31 00:00:00.000	120000.00
2	Jason	Chaney	NULL	96000.00
3	Dennis	Christilaw	NULL	113000.00
4	Sue	Greyhat	1998-01-04 00:00:00.000	150000.00
5	Ariez	Hart	1991-02-20 00:00:00.000	85000.00
6	Carmen	Redhat	1970-09-13 00:00:00.000	114000.00
7	Curtis	Shapira	1997-12-15 00:00:00.000	150000.00
8	Sanjay	Wadhwa	1960-07-17 00:00:00.000	60000.00
9	Robby	Whitehat	1972-03-26 00:00:00.000	114000.00
10	Nathan	Whitehat	1999-02-28 00:00:00.000	160000.00
11	Mohammad	Whitehat	1997-04-04 00:00:00.000	149000.00

Salarydate

	EmployeeName	Surname	Birthdate	Gross
1	Justice	Blackhat	1995-01-31 00:00:00.000	120000.00
2	Adam	Booker	1990-10-12 00:00:00.000	113000.00
3	Jason	Chaney	NULL	96000.00
4	Dennis	Christilaw	NULL	113000.00
5	Sue	Greyhat	1998-01-04 00:00:00.000	150000.00
6	Ariez	Hart	1991-02-20 00:00:00.000	85000.00
7	Hunter	Jackson	1960-09-04 00:00:00.000	130000.00
8	Alexa	Johnson	1969-04-21 00:00:00.000	113000.00
9	Linda	Liu	1965-12-23 00:00:00.000	112000.00
10	Denise	McInerney	1990-04-01 00:00:00.000	150000.00
11	David	Othus	1966-04-19 00:00:00.000	160000.00
12	Carmen	Redhat	1970-09-13 00:00:00.000	114000.00
13	Curtis	Shapira	1997-12-15 00:00:00.000	150000.00
14	Mohammad	Susarla	1989-03-01 00:00:00.000	145000.00
15	Sanjay	Wadhwa	1960-07-17 00:00:00.000	60000.00
16	Robby	Whitehat	1972-03-26 00:00:00.000	114000.00
17	Nathan	Whitehat	1999-02-28 00:00:00.000	160000.00
18	Mohammad	Whitehat	1997-04-04 00:00:00.000	149000.00

Salarydate

	DepName	Name	Last	Gross
1	Analytics	Nia	Anderson	83000.00
2	Analytics	Jason	Chaney	96000.00
3	Analytics	Abram	Goldberg	83000.00
4	Analytics	Ariez	Hart	85000.00
5	Analytics	Holly	Wright	68000.00
6	Database Architecture	Adam	Booker	113000.00
7	Database Architecture	Dennis	Christilaw	113000.00
8	Database Architecture	Linda	Liu	112000.00
9	Database Architecture	Denise	McInerney	150000.00
10	Database Architecture	Carmen	Redhat	114000.00
11	Database Architecture	Curtis	Shapira	150000.00
12	Database Architecture	Mohammad	Susarla	145000.00
13	Database Administration	Bradley	Davis	100000.00
14	Database Administration	Hunter	Jackson	130000.00
15	Database Administration	David	Othus	160000.00
16	Database Administration	Sahter	Snezana	100000.00
17	Database Administration	Yalcinalp	Umit	100000.00
18	Database Administration	Sanjay	Wadhwa	60000.00
19	Cyber Security	Justice	Blackhat	120000.00
20	Cyber Security	Sue	Greyhat	150000.00
21	Cyber Security	Alexa	Johnson	113000.00
22	Cyber Security	Robby	Whitehat	114000.00
23	Cyber Security	Nathan	Whitehat	160000.00
24	Cyber Security	Mohammad	Whitehat	149000.00

	DepartmentName	FirstName	LastName	AnnualGross
1	Cyber Security	Justice	Blackhat	120000.00
2	Cyber Security	Sue	Greyhat	150000.00
3	Cyber Security	Alexa	Johnson	113000.00
4	Cyber Security	Robby	Whitehat	114000.00
5	Cyber Security	Nathan	Whitehat	160000.00
6	Cyber Security	Mohammad	Whitehat	149000.00
7	Database Administration	Bradley	Davis	100000.00
8	Database Administration	Hunter	Jackson	130000.00
9	Database Administration	David	Othus	160000.00
10	Database Administration	Sahter	Snezana	100000.00
11	Database Administration	Yalcinalp	Umit	100000.00
12	Database Administration	Sanjay	Wadhwa	60000.00
13	Database Architecture	Adam	Booker	113000.00
14	Database Architecture	Dennis	Christilaw	113000.00
15	Database Architecture	Linda	Liu	112000.00
16	Database Architecture	Denise	McInerney	150000.00
17	Database Architecture	Carmen	Redhat	114000.00
18	Database Architecture	Curtis	Shapira	150000.00
19	Database Architecture	Mohammad	Susarla	145000.00
20	Analytics	Nia	Anderson	83000.00
21	Analytics	Jason	Chaney	96000.00
22	Analytics	Abram	Goldberg	83000.00
23	Analytics	Ariez	Hart	85000.00
24	Analytics	Holly	Wright	68000.00

SalaryReviewDate

	DepartmentName	FirstName	LastName	AnnualGross
1	Database Architecture	Carmen	Redhat	114000.00
2	Cyber Security	Justice	Blackhat	120000.00
3	Cyber Security	Sue	Greyhat	150000.00
4	Cyber Security	Mohammad	Whitehat	149000.00
5	Cyber Security	Robby	Whitehat	114000.00
6	Cyber Security	Nathan	Whitehat	160000.00

SalaryReviewDate

2020-02-28 00:00:00.000

2020-02-28 00:00:00.000

2020-02-28 00:00:00.000

2020-02-28 00:00:00.000

2020-02-28 00:00:00.000

2020-02-28 00:00:00.000

	EmployeeID	DepID	Surname	EmployeeName
1	3	1	Anderson	Nia
2	2	1	Chaney	Jason
3	5	1	Goldberg	Abram
4	1	1	Hart	Ariez
5	4	1	Wright	Holly
6	11	2	Booker	Adam
7	6	2	Christilaw	Dennis
8	10	2	Liu	Linda
9	8	2	McInerney	Denise
10	12	2	Redhat	Carmen
11	9	2	Shapira	Curtis
12	7	2	Susarla	Mohammad
13	15	3	Davis	Bradley
14	14	3	Jackson	Hunter
15	13	3	Othus	David
16	17	3	Snezana	Sahter
17	18	3	Umit	Yalcinalp
18	16	3	Wadhwa	Sanjay
19	24	4	Blackhat	Justice
20	22	4	Greyhat	Sue
21	19	4	Johnson	Alexa
22	20	4	Whitehat	Robby
23	21	4	Whitehat	Nathan
24	23	4	Whitehat	Mohammad

Birthdate	Height	BossID	SalaryID	PersonID
1980-10-21 00:00:00.000	1.27	2	3	3
NULL	NULL	1	2	2
1983-10-31 00:00:00.000	1.86	2	5	5
1991-02-20 00:00:00.000	1.63	1	1	1
2001-01-02 00:00:00.000	1.37	2	4	4
1990-10-12 00:00:00.000	1.89	3	11	11
NULL	NULL	2	6	6
1965-12-23 00:00:00.000	1.7	2	10	10
1990-04-01 00:00:00.000	1.05	2	8	8
1970-09-13 00:00:00.000	1.79	3	12	12
1997-12-15 00:00:00.000	1.3	3	9	9
1989-03-01 00:00:00.000	1.58	2	7	7
1971-08-14 00:00:00.000	1.43	4	15	15
1960-09-04 00:00:00.000	1.47	4	14	14
1966-04-19 00:00:00.000	1.86	4	13	13
1967-06-28 00:00:00.000	1.37	5	17	17
1968-05-25 00:00:00.000	1.09	5	18	18
1960-07-17 00:00:00.000	1.9	5	16	16
1995-01-31 00:00:00.000	1.75	7	24	24
1998-01-04 00:00:00.000	1.65	7	22	22
1969-04-21 00:00:00.000	1.7	6	19	19
1972-03-26 00:00:00.000	1.43	6	20	20
1999-02-28 00:00:00.000	1.82	6	21	21
1997-04-04 00:00:00.000	1.73	7	23	23

Gross	SalaryDate	DepID	DepName
83000.00	2020-02-28 00:00:00.000	1	Analytics
96000.00	2020-02-28 00:00:00.000	1	Analytics
83000.00	2020-02-28 00:00:00.000	1	Analytics
85000.00	2020-02-28 00:00:00.000	1	Analytics
68000.00	2020-02-28 00:00:00.000	1	Analytics
113000.00	2020-02-28 00:00:00.000	2	Database Architect...
113000.00	2020-02-28 00:00:00.000	2	Database Architect...
112000.00	2020-02-28 00:00:00.000	2	Database Architect...
150000.00	2020-02-28 00:00:00.000	2	Database Architect...
114000.00	2020-02-28 00:00:00.000	2	Database Architect...
150000.00	2020-02-28 00:00:00.000	2	Database Architect...
145000.00	2020-02-28 00:00:00.000	2	Database Architect...
100000.00	2020-02-28 00:00:00.000	3	Database Administr...
130000.00	2020-02-28 00:00:00.000	3	Database Administr...
160000.00	2020-02-28 00:00:00.000	3	Database Administr...
100000.00	2020-02-28 00:00:00.000	3	Database Administr...
100000.00	2020-02-28 00:00:00.000	3	Database Administr...
60000.00	2020-02-28 00:00:00.000	3	Database Administr...
120000.00	2020-02-28 00:00:00.000	4	Cyber Security
150000.00	2020-02-28 00:00:00.000	4	Cyber Security
113000.00	2020-02-28 00:00:00.000	4	Cyber Security
114000.00	2020-02-28 00:00:00.000	4	Cyber Security
160000.00	2020-02-28 00:00:00.000	4	Cyber Security
149000.00	2020-02-28 00:00:00.000	4	Cyber Security

```
1 /* The summation of all the rows in the selected column */
2
3 SELECT SUM(Gross) AS SumGross
4 FROM Salaries;
5
6 /* The minimum value in the selected column */
7
8 SELECT MIN(Gross) as MinGross
9 FROM Salaries;
10
11 /* The max value in the selected column */
12
13 SELECT MAX(Gross) AS MaxGross
14 FROM Salaries;
15
16 /* Highest age value using MIN function on Birthdate */
17
18 SELECT MIN(Employees.Birthdate) AS OldestEmployee
19 FROM Employees;
20
21 /* Youngest age value using MAX function on Birthdate */
22
23 SELECT MAX(Employees.Birthdate) AS OldestEmployee
24 FROM Employees;
25
26 /* First name in column by Alphabetical Order */
27
28 SELECT MIN(Surname) AS FirstByLastName
29 FROM Employees;
30
31 /* Last name in column by Alphabetical Order */
32
33 SELECT MAX(Surname) AS LastByLastName
34 FROM Employees;
35
36 /* First name in column Alphabetically, that contains a 'H' */
37
38 SELECT MIN(Surname) AS FirstContainingH
39 FROM Employees
40 Where Surname LIKE '%h%';
41
42 /* How many Employees do we have? */
43
44 SELECT COUNT(*) AS CountEmployees
45 FROM Employees;
46
47 /* What is our Average Salary? */
48
49 SELECT AVG(Gross) AS AvgGross
```

```
50 FROM Salaries;
51
52 /* Alternative Form*/
53
54 SELECT SUM(Gross) / COUNT(Gross) AS AvgGross
55 FROM Salaries;
56
57 /* Salary Data Breakdown */
58
59 SELECT SUM(Gross) AS TotalAnnualGrossForAllEmployees, MIN(Gross) AS LowestAnnualIncome, MAX(Gross) AS HighestAnnualIncome, AVG(Gross) AS AverageIncome, COUNT(*) AS NumberOfSalaries
60 FROM Salaries; ↵
61
62 /* Shows only unique entries in the table */
63
64 SELECT DISTINCT Surname
65 FROM Employees;
66
67 /* Group By is used to divide a Database Table into Groups based on the group
   columns. */ ↵
68 --For each group you can apply aggregate functions.
69 --In this case the result set contains non-repetitive
70 --groups of the surnames. In most cases each group
71 --contain only one surname; if there are several
72 --identical surnames, the group contains all of them.
73
74 SELECT Surname
75 FROM Employees
76 GROUP BY Surname;
77
78 /* WHERE before GROUP BY */
79 --Surnames > J in the Alphabet
80
81 SELECT Surname
82 FROM Employees
83 WHERE Surname > 'J'
84 GROUP BY Surname
85 ORDER BY Surname DESC; /*Order by must be last in statement*/
86
87 SELECT PersonID, SUM(Gross) AS SumGross
88 FROM Salaries
89 GROUP BY PersonID;
90
91 SELECT PersonID, SUM(Gross) AS SumGross
92 FROM Salaries
93 WHERE Gross > 100000
94 GROUP BY PersonID;
95
```

```
96 SELECT PersonID, SUM(Gross) AS SumGross
97 FROM Salaries
98 GROUP BY PersonID
99 HAVING SUM(GROSS) > 90000;
100
101 /* SUM and AVG Earnings by Departments */
102
103 SELECT Departments.DepName, SUM(Salaries.Gross) As SumGross, AVG(Salaries.Gross) ↵
    AS AvgGross
104 FROM Departments JOIN Employees
105 ON Departments.DepID = Employees.DepID
106 JOIN Salaries
107 ON Employees.EmployeeID = Salaries.PersonID
108 GROUP BY Departments.DepName
109 ORDER BY Departments.DepName ASC;
110
```

SumGross

1	2768000.00
---	------------

MinGross

1

60000.00

MaxGross

1

160000.00

OldestEmployee

1

1960-07-17 00:00:00.000

OldestEmployee

1

2001-01-02 00:00:00.000

FirstByLastName

1

Anderson

LastByLastName

1

Wright

FirstContainingH

1

Blackhat

CountEmployees

1

24

AvgGross

1	115333.3333
---	-------------

AvgGross

1	115333.3333
---	-------------

TotalAnnualGrossForAllEmployees

LowestAnnualIncome

1

2768000.00

60000.00

HighestAnnualIncome	AverageIncome	NumberOfSalaries
---------------------	---------------	------------------

160000.00	115333.3333	24
-----------	-------------	----

Surname

1	Anderson
2	Blackhat
3	Booker
4	Chaney
5	Christilaw
6	Davis
7	Goldberg
8	Greyhat
9	Hart
10	Jackson
11	Johnson
12	Liu
13	McInerney
14	Othus
15	Redhat
16	Shapira
17	Snezana
18	Susarla
19	Umit
20	Wadhwa
21	Whitehat
22	Wright

Surname

1	Anderson
2	Blackhat
3	Booker
4	Chaney
5	Christilaw
6	Davis
7	Goldberg
8	Greyhat
9	Hart
10	Jackson
11	Johnson
12	Liu
13	McInerney
14	Othus
15	Redhat
16	Shapira
17	Snezana
18	Susarla
19	Umit
20	Wadhwa
21	Whitehat
22	Wright

Surname

1	Wright
2	Whitehat
3	Wadhwa
4	Umit
5	Susarla
6	Snezana
7	Shapira
8	Redhat
9	Othus
10	McInerney
11	Liu
12	Johnson
13	Jackson

Surname

1	Wright
2	Whitehat
3	Wadhwa
4	Umit
5	Susarla
6	Snezana
7	Shapira
8	Redhat
9	Othus
10	McInerney
11	Liu
12	Johnson
13	Jackson

	PersonID	SumGross
1	1	85000.00
2	2	96000.00
3	3	83000.00
4	4	68000.00
5	5	83000.00
6	6	113000.00
7	7	145000.00
8	8	150000.00
9	9	150000.00
10	10	112000.00
11	11	113000.00
12	12	114000.00
13	13	160000.00
14	14	130000.00
15	15	100000.00
16	16	60000.00
17	17	100000.00
18	18	100000.00
19	19	113000.00
20	20	114000.00
21	21	160000.00
22	22	150000.00
23	23	149000.00
24	24	120000.00

	PersonID	SumGross
1	6	113000.00
2	7	145000.00
3	8	150000.00
4	9	150000.00
5	10	112000.00
6	11	113000.00
7	12	114000.00
8	13	160000.00
9	14	130000.00
10	19	113000.00
11	20	114000.00
12	21	160000.00
13	22	150000.00
14	23	149000.00
15	24	120000.00

PersonID		SumGross
1	2	96000.00
2	6	113000.00
3	7	145000.00
4	8	150000.00
5	9	150000.00
6	10	112000.00
7	11	113000.00
8	12	114000.00
9	13	160000.00
10	14	130000.00
11	15	100000.00
12	17	100000.00
13	18	100000.00
14	19	113000.00
15	20	114000.00
16	21	160000.00
17	22	150000.00
18	23	149000.00
19	24	120000.00

	DepName	SumGross	AvgGross
1	Analytics	415000.00	83000.00
2	Cyber Security	806000.00	134333.3333
3	Database Administration	650000.00	108333.3333
4	Database Architecture	897000.00	128142.8571

```
1 SELECT Surname
2 FROM Employees
3 UNION
4 SELECT DepName
5 FROM Departments;
6
7
```

Surname

1	Analytics
2	Anderson
3	Blackhat
4	Booker
5	Chaney
6	Christilaw
7	Cyber Security
8	Database Administration
9	Database Architecture
10	Davis
11	Goldberg
12	Greyhat
13	Hart
14	Jackson
15	Johnson
16	Liu
17	McInerney
18	Othus
19	Redhat
20	Shapira
21	Snezana
22	Susarla
23	Umit
24	Wadhwa
25	Whitehat
26	Wright

```
1 SELECT Surname, 'Employees' AS infoAboutTable
2 FROM Employees
3 WHERE Surname LIKE 'd%'
4 UNION
5 SELECT DepName, 'Departments' AS InfoAboutTable
6 FROM Departments
7 WHERE DepName LIKE 'd%';
```

Surname infoAboutTable

1	Database Administration	Departments
2	Database Architecture	Departments
3	Davis	Employees

```
1 SELECT Surname
2 FROM Employees
3 WHERE Surname LIKE 'd%'
4 UNION
5 SELECT Surname
6 FROM Employees
7 WHERE Surname LIKE '%y%'
```

Surname

1	Chaney
2	Davis
3	Greyhat
4	McInerney

```
1 SELECT Surname
2 FROM Employees
3 WHERE Surname LIKE 'C%'
4 UNION ALL
5 SELECT Surname
6 FROM Employees
7 WHERE Surname LIKE '%Y%'
```

Surname

1	Chaney
2	Christilaw
3	Chaney
4	McInerney
5	Greyhat

```
1 SELECT *
2 FROM Departments
3 UNION ALL
4 SELECT EmployeeID, Surname
5 FROM Employees;
```

	DepID	DepName
1	1	Analytics
2	2	Database Architecture
3	3	Database Administration
4	4	Cyber Security
5	1	Hart
6	2	Chaney
7	3	Anderson
8	4	Wright
9	5	Goldberg
10	6	Christilaw
11	7	Susarla
12	8	McInerney
13	9	Shapira
14	10	Liu
15	11	Booker
16	12	Redhat
17	13	Othus
18	14	Jackson
19	15	Davis
20	16	Wadhwa
21	17	Snezana
22	18	Umit
23	19	Johnson
24	20	Whitehat
25	21	Whitehat
26	22	Greyhat
27	23	Whitehat
28	24	Blackhat

```
1 SELECT Surname, 'Employees' AS infoAboutTable
2 FROM Employees
3 WHERE Surname LIKE '%r%'
4 UNION ALL
5 SELECT DepName, 'Departments' AS InfoAboutTable
6 FROM Departments
7 WHERE depName LIKE '%r%'
8 ORDER BY Surname;
```

Surname infoAboutTable

1	Anderson	Employees
2	Booker	Employees
3	Christilaw	Employees
4	Cyber Security	Departments
5	Database Administration	Departments
6	Database Architecture	Departments
7	Goldberg	Employees
8	Greyhat	Employees
9	Hart	Employees
10	McInerney	Employees
11	Redhat	Employees
12	Shapira	Employees
13	Susarla	Employees
14	Wright	Employees

```
1 SELECT Surname, 'Employees' AS InfoAboutTable
2 FROM Employees
3 WHERE Surname LIKE '%r%'
4 UNION ALL
5 SELECT DepName, 'Departments' AS InfoAboutTable
6 FROM Departments
7 WHERE DepName LIKE '%r%'
8 ORDER BY 1 DESC;
9
10 /*reference columns in the ORDER BY clause by their position in the result set */
```

	Surname	InfoAboutTable
1	Wright	Employees
2	Susarla	Employees
3	Shapira	Employees
4	Redhat	Employees
5	McInerney	Employees
6	Hart	Employees
7	Greyhat	Employees
8	Goldberg	Employees
9	Database Architecture	Departments
10	Database Administration	Departments
11	Cyber Security	Departments
12	Christilaw	Employees
13	Booker	Employees
14	Anderson	Employees

```
1 SELECT e.Surname, AVG(s.Gross) AS AverageSalary, COUNT(s.Gross) AS CountSalary
2 FROM Employees e, Salaries s
3 WHERE e.EmployeeID = s.PersonID
4 AND (e.Surname LIKE 's%' OR e.Surname LIKE 'm%')
5 GROUP BY e.Surname
6 HAVING AVG(s.Gross) > 95000
7 UNION ALL
8 SELECT e.Surname, AVG(s.Gross) As AverageSalary, COUNT(s.Gross) AS CountSalary
9 FROM Employees e, Salaries s
10 WHERE e.EmployeeID = s.PersonID
11 AND (e.Surname LIKE 'b%' OR e.Surname LIKE 't%')
12 GROUP BY e.Surname
13 HAVING AVG(s.Gross) > 80000
14 ORDER BY e.Surname ASC;
```

	Surname	AverageSalary	CountSalary
1	Blackhat	120000.00	1
2	Booker	113000.00	1
3	McInerney	150000.00	1
4	Shapira	150000.00	1
5	Snezana	100000.00	1
6	Susarla	145000.00	1

```
1 SELECT Surname, 'Employees' AS InfoAboutTable
2 FROM Employees
3 WHERE Surname LIKE '%w%'
4 INTERSECT
5 SELECT Surname, 'Employees' AS InfoAboutTable
6 FROM Employees
7 WHERE Surname LIKE '%a%';
```

Surname InfoAboutTable

1	Christilaw	Employees
2	Wadhwa	Employees
3	Whitehat	Employees

```
1 SELECT Surname, 'Employees' AS InfoAboutTable
2 FROM Employees
3 WHERE Surname LIKE '%a%'
4 EXCEPT
5 SELECT Surname, 'Employees' AS InfoAboutTable
6 FROM Employees
7 WHERE Surname LIKE '%h%';
```

Surname InfoAboutTable

1	Anderson	Employees
2	Davis	Employees
3	Jackson	Employees
4	Snezana	Employees
5	Susarla	Employees

```
1 SELECT e.Surname, e.EmployeeName,
2      (
3          SELECT d.DepName
4          FROM Departments d
5          WHERE d.DepID = e.DepID
6      ) AS Dep_Name
7 FROM Employees e;
```

	Surname	EmployeeName	Dep_Name
1	Hart	Ariez	Analytics
2	Chaney	Jason	Analytics
3	Anderson	Nia	Analytics
4	Wright	Holly	Analytics
5	Goldberg	Abram	Analytics
6	Christilaw	Dennis	Database Architecture
7	Susarla	Mohammad	Database Architecture
8	McInerney	Denise	Database Architecture
9	Shapira	Curtis	Database Architecture
10	Liu	Linda	Database Architecture
11	Booker	Adam	Database Architecture
12	Redhat	Carmen	Database Architecture
13	Othus	David	Database Administration
14	Jackson	Hunter	Database Administration
15	Davis	Bradley	Database Administration
16	Wadhwa	Sanjay	Database Administration
17	Snezana	Sahter	Database Administration
18	Umit	Yalcinalp	Database Administration
19	Johnson	Alexa	Cyber Security
20	Whitehat	Robby	Cyber Security
21	Whitehat	Nathan	Cyber Security
22	Greyhat	Sue	Cyber Security
23	Whitehat	Mohammad	Cyber Security
24	Blackhat	Justice	Cyber Security

```
1 SELECT e.Surname, E.EmployeeName, a.DepName
2 FROM Employees AS e,
3      (
4          SELECT DepID, DepName
5          FROM Departments
6      ) AS a
7 WHERE e.DepID = a.DepID;
```

```
1 SELECT e.Surname, e.EmployeeName, d.DepName
2 FROM Employees e, Departments d
3 WHERE d.DepID = e.DepID;
4
5 /* Same code, written differently */
```

	Surname	EmployeeName	DepName
1	Hart	Ariez	Analytics
2	Chaney	Jason	Analytics
3	Anderson	Nia	Analytics
4	Wright	Holly	Analytics
5	Goldberg	Abram	Analytics
6	Christilaw	Dennis	Database Architecture
7	Susarla	Mohammad	Database Architecture
8	McInerney	Denise	Database Architecture
9	Shapira	Curtis	Database Architecture
10	Liu	Linda	Database Architecture
11	Booker	Adam	Database Architecture
12	Redhat	Carmen	Database Architecture
13	Othus	David	Database Administration
14	Jackson	Hunter	Database Administration
15	Davis	Bradley	Database Administration
16	Wadhwa	Sanjay	Database Administration
17	Snezana	Sahter	Database Administration
18	Umit	Yalcinalp	Database Administration
19	Johnson	Alexa	Cyber Security
20	Whitehat	Robby	Cyber Security
21	Whitehat	Nathan	Cyber Security
22	Greyhat	Sue	Cyber Security
23	Whitehat	Mohammad	Cyber Security
24	Blackhat	Justice	Cyber Security

```
1 SELECT e.Surname, e.EmployeeName, a.DepName
2 FROM
3 (
4     SELECT DepID, EmployeeName, Surname
5         FROM Employees
6     WHERE Surname LIKE '%s%'
7 ) AS e,
8 (
9     SELECT DepID, DepName
10        FROM Departments
11    WHERE DepName LIKE '%a%'
12 ) AS a
13
14
15 WHERE e.DepID = a.DepID;
```

	Surname	EmployeeName	DepName
1	Anderson	Nia	Analytics
2	Christilaw	Dennis	Database Architecture
3	Susarla	Mohammad	Database Architecture
4	Shapira	Curtis	Database Architecture
5	Othus	David	Database Administration
6	Jackson	Hunter	Database Administration
7	Davis	Bradley	Database Administration
8	Snezana	Sahter	Database Administration

```
1 SELECT Surname, EmployeeName, BirthDate
2 FROM Employees
3 WHERE EmployeeID IN
4 (
5     SELECT PersonID
6     FROM Salaries
7     WHERE Gross > 84000
8     AND Birthdate IS NOT NULL
9 );
10
11
```

	Surname	EmployeeName	BirthDate
1	Hart	Ariez	1991-02-20 00:00:00.000
2	Susarla	Mohammad	1989-03-01 00:00:00.000
3	McInerney	Denise	1990-04-01 00:00:00.000
4	Shapira	Curtis	1997-12-15 00:00:00.000
5	Liu	Linda	1965-12-23 00:00:00.000
6	Booker	Adam	1990-10-12 00:00:00.000
7	Redhat	Carmen	1970-09-13 00:00:00.000
8	Othus	David	1966-04-19 00:00:00.000
9	Jackson	Hunter	1960-09-04 00:00:00.000
10	Davis	Bradley	1971-08-14 00:00:00.000
11	Snezana	Sahter	1967-06-28 00:00:00.000
12	Umit	Yalcinalp	1968-05-25 00:00:00.000
13	Johnson	Alexa	1969-04-21 00:00:00.000
14	Whitehat	Robby	1972-03-26 00:00:00.000
15	Whitehat	Nathan	1999-02-28 00:00:00.000
16	Greyhat	Sue	1998-01-04 00:00:00.000
17	Whitehat	Mohammad	1997-04-04 00:00:00.000
18	Blackhat	Justice	1995-01-31 00:00:00.000

```
1 SELECT Surname, EmployeeName, BirthDate
2 FROM Employees
3 WHERE EmployeeID NOT IN
4     (
5         SELECT PersonID
6             FROM Salaries
7                 WHERE Gross > 84000
8                 AND Birthdate IS NOT NULL
9     );
```

	Surname	EmployeeName	BirthDate
1	Chaney	Jason	NULL
2	Anderson	Nia	1980-10-21 00:00:00.000
3	Wright	Holly	2001-01-02 00:00:00.000
4	Goldberg	Abram	1983-10-31 00:00:00.000
5	Christilaw	Dennis	NULL
6	Wadhwa	Sanjay	1960-07-17 00:00:00.000

```
1 SELECT Surname, EmployeeName, Birthdate
2 FROM Employees
3 WHERE EmployeeID NOT IN
4 (
5     SELECT PersonID
6     FROM Salaries
7     WHERE Gross < 200000
8 );
```

Surname

EmployeeName

Birthdate

```
1 SELECT e.Surname, e.EmployeeName, e.Birthdate
2 FROM Employees e, Salaries s
3 WHERE e.EmployeeID = s.PersonID
4 AND s.Gross > 80000;
```

	Surname	EmployeeName	Birthdate
1	Hart	Ariez	1991-02-20 00:00:00.000
2	Chaney	Jason	NULL
3	Anderson	Nia	1980-10-21 00:00:00.000
4	Goldberg	Abram	1983-10-31 00:00:00.000
5	Christilaw	Dennis	NULL
6	Susarla	Mohammad	1989-03-01 00:00:00.000
7	McInerney	Denise	1990-04-01 00:00:00.000
8	Shapira	Curtis	1997-12-15 00:00:00.000
9	Liu	Linda	1965-12-23 00:00:00.000
10	Booker	Adam	1990-10-12 00:00:00.000
11	Redhat	Carmen	1970-09-13 00:00:00.000
12	Othus	David	1966-04-19 00:00:00.000
13	Jackson	Hunter	1960-09-04 00:00:00.000
14	Davis	Bradley	1971-08-14 00:00:00.000
15	Snezana	Sahter	1967-06-28 00:00:00.000
16	Umit	Yalcinalp	1968-05-25 00:00:00.000
17	Johnson	Alexa	1969-04-21 00:00:00.000
18	Whitehat	Robby	1972-03-26 00:00:00.000
19	Whitehat	Nathan	1999-02-28 00:00:00.000
20	Greyhat	Sue	1998-01-04 00:00:00.000
21	Whitehat	Mohammad	1997-04-04 00:00:00.000
22	Blackhat	Justice	1995-01-31 00:00:00.000

```
1 SELECT DISTINCT e.Surname, e.EmployeeName, e.Birthdate
2 FROM Employees e, Salaries s
3 WHERE e.EmployeeID = s.PersonID
4 AND s.Gross > 80000;
```

	Surname	EmployeeName	Birthdate
1	Anderson	Nia	1980-10-21 00:00:00.000
2	Blackhat	Justice	1995-01-31 00:00:00.000
3	Booker	Adam	1990-10-12 00:00:00.000
4	Chaney	Jason	NULL
5	Christilaw	Dennis	NULL
6	Davis	Bradley	1971-08-14 00:00:00.000
7	Goldberg	Abram	1983-10-31 00:00:00.000
8	Greyhat	Sue	1998-01-04 00:00:00.000
9	Hart	Ariez	1991-02-20 00:00:00.000
10	Jackson	Hunter	1960-09-04 00:00:00.000
11	Johnson	Alexa	1969-04-21 00:00:00.000
12	Liu	Linda	1965-12-23 00:00:00.000
13	McInerney	Denise	1990-04-01 00:00:00.000
14	Othus	David	1966-04-19 00:00:00.000
15	Redhat	Carmen	1970-09-13 00:00:00.000
16	Shapira	Curtis	1997-12-15 00:00:00.000
17	Snezana	Sahter	1967-06-28 00:00:00.000
18	Susarla	Mohammad	1989-03-01 00:00:00.000
19	Umit	Yalcinalp	1968-05-25 00:00:00.000
20	Whitehat	Mohammad	1997-04-04 00:00:00.000
21	Whitehat	Nathan	1999-02-28 00:00:00.000
22	Whitehat	Robby	1972-03-26 00:00:00.000

```
1 SELECT Surname, EmployeeName, Birthdate
2 FROM Employees
3 WHERE Birthdate >
4      (
5          SELECT MAX(Birthdate)
6          FROM Employees
7          WHERE DepID = 3
8      );
```

	Surname	EmployeeName	Birthdate
1	Anderson	Nia	1980-10-21 00:00:00.000
2	Blackhat	Justice	1995-01-31 00:00:00.000
3	Booker	Adam	1990-10-12 00:00:00.000
4	Chaney	Jason	NULL
5	Christilaw	Dennis	NULL
6	Davis	Bradley	1971-08-14 00:00:00.000
7	Goldberg	Abram	1983-10-31 00:00:00.000
8	Greyhat	Sue	1998-01-04 00:00:00.000
9	Hart	Ariez	1991-02-20 00:00:00.000
10	Jackson	Hunter	1960-09-04 00:00:00.000
11	Johnson	Alexa	1969-04-21 00:00:00.000
12	Liu	Linda	1965-12-23 00:00:00.000
13	McInerney	Denise	1990-04-01 00:00:00.000
14	Othus	David	1966-04-19 00:00:00.000
15	Redhat	Carmen	1970-09-13 00:00:00.000
16	Shapira	Curtis	1997-12-15 00:00:00.000
17	Snezana	Sahter	1967-06-28 00:00:00.000
18	Susarla	Mohammad	1989-03-01 00:00:00.000
19	Umit	Yalcinalp	1968-05-25 00:00:00.000
20	Whitehat	Mohammad	1997-04-04 00:00:00.000
21	Whitehat	Nathan	1999-02-28 00:00:00.000
22	Whitehat	Robby	1972-03-26 00:00:00.000

```
1 SELECT PersonID, AVG(Gross)
2 FROM Salaries
3 GROUP BY PersonID
4 HAVING AVG(Gross) < (SELECT AVG(Gross) FROM Salaries);
```

PersonID (No column name)

1	1	85000.00
2	2	96000.00
3	3	83000.00
4	4	68000.00
5	5	83000.00
6	6	113000.00
7	10	112000.00
8	11	113000.00
9	12	114000.00
10	15	100000.00
11	16	60000.00
12	17	100000.00
13	18	100000.00
14	19	113000.00
15	20	114000.00

```
1 SELECT PersonID, Gross
2 FROM Salaries
3 WHERE Gross > SOME
4 (
5     SELECT AVG(Gross)
6     FROM Salaries JOIN Employees
7     ON Employees.EmployeeID = Salaries.PersonID
8     GROUP BY DepID
9 );
10
```

	PersonID	Gross
1	1	85000.00
2	2	96000.00
3	6	113000.00
4	7	145000.00
5	8	150000.00
6	9	150000.00
7	10	112000.00
8	11	113000.00
9	12	114000.00
10	13	160000.00
11	14	130000.00
12	15	100000.00
13	17	100000.00
14	18	100000.00
15	19	113000.00
16	20	114000.00
17	21	160000.00
18	22	150000.00
19	23	149000.00
20	24	120000.00

```
1 SELECT Surname, EmployeeName, Birthdate
2 FROM Employees
3 WHERE Birthdate >= ANY
4 (
5     SELECT MAX(Birthdate)
6     FROM Employees
7     WHERE DepID = 2
8 );
```

	Surname	EmployeeName	Birthdate
1	Wright	Holly	2001-01-02 00:00:00.000
2	Shapira	Curtis	1997-12-15 00:00:00.000
3	Whitehat	Nathan	1999-02-28 00:00:00.000
4	Greyhat	Sue	1998-01-04 00:00:00.000

```
1 SELECT e.Surname, e.EmployeeName, e.Birthdate, e.DepID
2 FROM Employees e
3 WHERE EXISTS
4      (
5          SELECT d.DepID
6          FROM Departments d
7          WHERE d.DepID = e.DepID
8          AND d.DepID = 2
9      );
```

	Surname	EmployeeName	Birthdate	DeptID
1	Christilaw	Dennis	NULL	2
2	Susarla	Mohammad	1989-03-01 00:00:00.000	2
3	McInerney	Denise	1990-04-01 00:00:00.000	2
4	Shapira	Curtis	1997-12-15 00:00:00.000	2
5	Liu	Linda	1965-12-23 00:00:00.000	2
6	Booker	Adam	1990-10-12 00:00:00.000	2
7	Redhat	Carmen	1970-09-13 00:00:00.000	2

```
1 SELECT e.Surname, e.EmployeeName, e.Birthdate, e.DepID
2 FROM Employees e
3 WHERE NOT EXISTS
4 (
5     SELECT d.DepID
6     FROM Departments d
7     WHERE d.DepID = e.DepID
8     AND d.DepID IN (1, 2)
9 );
10
11 /* finds the employees that don't work in departments 1, 2 */
```

	Surname	EmployeeName	Birthdate	DepID
1	Othus	David	1966-04-19 00:00:00.000	3
2	Jackson	Hunter	1960-09-04 00:00:00.000	3
3	Davis	Bradley	1971-08-14 00:00:00.000	3
4	Wadhwa	Sanjay	1960-07-17 00:00:00.000	3
5	Snezana	Sahter	1967-06-28 00:00:00.000	3
6	Umit	Yalcinalp	1968-05-25 00:00:00.000	3
7	Johnson	Alexa	1969-04-21 00:00:00.000	4
8	Whitehat	Robby	1972-03-26 00:00:00.000	4
9	Whitehat	Nathan	1999-02-28 00:00:00.000	4
10	Greyhat	Sue	1998-01-04 00:00:00.000	4
11	Whitehat	Mohammad	1997-04-04 00:00:00.000	4
12	Blackhat	Justice	1995-01-31 00:00:00.000	4

```
1 SELECT e.Surname, e.EmployeeName, e.Birthdate, e.DepID
2 FROM Employees e
3 WHERE SUBSTRING(e.Surname, 1, 1) IN
4 (
5     SELECT SUBSTRING(d.DepName, 1, 1)
6     FROM Departments d
7     WHERE DepID IN
8     (
9         SELECT e.DepID
10        FROM Employees e, Salaries s
11       WHERE e.EmployeeID = s.PersonID
12      AND s.Gross >=85000
13    )
14 );
```

	Surname	EmployeeName	Birthdate	DeptID
1	Chaney	Jason	NULL	1
2	Anderson	Nia	1980-10-21 00:00:00.000	1
3	Christilaw	Dennis	NULL	2
4	Davis	Bradley	1971-08-14 00:00:00.000	3

```
1 SELECT EmployeeName, Surname, Birthdate,
2 CASE
3 WHEN Birthdate >= '1980-01-01' THEN 'Young'
4 WHEN Birthdate >= '1970-01-01' AND Birthdate < '1980-01-01' THEN 'Middle Aged'
5 WHEN Birthdate < '1970-01-01' THEN 'Mature'
6 ELSE 'UNKNOWN'
7 END AS info
8 FROM Employees;
9
10
```

	EmployeeName	Surname	Birthdate
1	Ariez	Hart	1991-02-20 00:00:00.000
2	Jason	Chaney	NULL
3	Nia	Anderson	1980-10-21 00:00:00.000
4	Holly	Wright	2001-01-02 00:00:00.000
5	Abram	Goldberg	1983-10-31 00:00:00.000
6	Dennis	Christilaw	NULL
7	Mohammad	Susarla	1989-03-01 00:00:00.000
8	Denise	McInerney	1990-04-01 00:00:00.000
9	Curtis	Shapira	1997-12-15 00:00:00.000
10	Linda	Liu	1965-12-23 00:00:00.000
11	Adam	Booker	1990-10-12 00:00:00.000
12	Carmen	Redhat	1970-09-13 00:00:00.000
13	David	Othus	1966-04-19 00:00:00.000
14	Hunter	Jackson	1960-09-04 00:00:00.000
15	Bradley	Davis	1971-08-14 00:00:00.000
16	Sanjay	Wadhwa	1960-07-17 00:00:00.000
17	Sahter	Snezana	1967-06-28 00:00:00.000
18	Yalcinalp	Umit	1968-05-25 00:00:00.000
19	Alexa	Johnson	1969-04-21 00:00:00.000
20	Robby	Whitehat	1972-03-26 00:00:00.000
21	Nathan	Whitehat	1999-02-28 00:00:00.000
22	Sue	Greyhat	1998-01-04 00:00:00.000
23	Mohammad	Whitehat	1997-04-04 00:00:00.000
24	Justice	Blackhat	1995-01-31 00:00:00.000

info

Young
UNKNOWN
Young
Young
Young
UNKNOWN
Young
Young
Young
Mature
Young
Middle Aged
Mature
Mature
Middle Aged
Mature
Mature
Mature
Middle Aged
Young
Young
Young
Young

```
1 SELECT e.EmployeeName, e.Surname, e.Birthdate
2 FROM Employees e
3 WHERE CASE
4 WHEN Birthdate >= '1980-01-01' THEN 'Young'
5 WHEN Birthdate >= '1970-01-01' AND Birthdate < '1980-01-01' THEN 'Middle Aged'
6 WHEN Birthdate < '1970-01-01' THEN 'Mature'
7 ELSE 'Unknown'
8 END IN ('Mature', 'Unknown');
```

	EmployeeName	Surname	Birthdate
1	Jason	Chaney	NULL
2	Dennis	Christilaw	NULL
3	Linda	Liu	1965-12-23 00:00:00.000
4	David	Othus	1966-04-19 00:00:00.000
5	Hunter	Jackson	1960-09-04 00:00:00.000
6	Sanjay	Wadhwa	1960-07-17 00:00:00.000
7	Sahter	Snezana	1967-06-28 00:00:00.000
8	Yalcinalp	Umit	1968-05-25 00:00:00.000
9	Alexa	Johnson	1969-04-21 00:00:00.000

```
1 SELECT d.DepName, AVG(s.Gross) AS avgGross, ROUND(AVG(s.Gross), 2) AS
  roundedAvgGross
2 FROM Departments d, Employees e, Salaries s
3 WHERE e.EmployeeID = s.PersonID
4 AND e.DepID = d.DepID
5 GROUP BY d.DepName;
```

	DepName	avgGross	roundedAvgGross
1	Analytics	83000.00	83000.00
2	Cyber Security	134333.3333	134333.33
3	Database Administration	108333.3333	108333.33
4	Database Architecture	128142.8571	128142.86

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```
1 SELECT d.DepName, AVG(s.Gross) AS AverageGross, ROUND(AVG(s.Gross), 0) AS  
     RoundedAverageGross, FLOOR(AVG(s.Gross)) AS floorAverageGross, CEILING(AVG  
     (s.Gross)) AS CeilingAverageGross  
2 FROM Departments d, Employees e, Salaries s  
3 WHERE e.EmployeeID = s.PersonID  
4 AND e.DepID = d.DepID  
5 GROUP BY d.DepName;  
6  
7 /*floor always rounds down, ceiling always rounds up, round follows standard  
   rounding rules */
```

	DepName	AverageGross	RoundedAverageGross
1	Analytics	83000.00	83000.00
2	Cyber Security	134333.3333	134333.00
3	Database Administration	108333.3333	108333.00
4	Database Architecture	128142.8571	128143.00

floorAverageGross

CeilingAverageGross

83000.00	83000.00
134333.00	134334.00
108333.00	108334.00
128142.00	128143.00

```
1 SELECT EmployeeName + ' ' + Surname AS FullName, Birthdate,
2 YEAR(Birthdate) AS BirthYear,
3 MONTH(Birthdate) AS BirthMonth,
4 DAY(Birthdate) AS DayOfBirthWithinMonth
5 FROM Employees;
```

	FullName	Birthdate	BirthYear	BirthMonth	DayOfBirthWithinMonth
1	Ariez Hart	1991-02-20 00:00:00.000	1991	2	20
2	Jason Chaney	NULL	NULL	NULL	NULL
3	Nia Anderson	1980-10-21 00:00:00.000	1980	10	21
4	Holly Wright	2001-01-02 00:00:00.000	2001	1	2
5	Abram Goldberg	1983-10-31 00:00:00.000	1983	10	31
6	Dennis Christilaw	NULL	NULL	NULL	NULL
7	Mohammad Susarla	1989-03-01 00:00:00.000	1989	3	1
8	Denise McInerney	1990-04-01 00:00:00.000	1990	4	1
9	Curtis Shapira	1997-12-15 00:00:00.000	1997	12	15
10	Linda Liu	1965-12-23 00:00:00.000	1965	12	23
11	Adam Booker	1990-10-12 00:00:00.000	1990	10	12
12	Carmen Redhat	1970-09-13 00:00:00.000	1970	9	13
13	David Othus	1966-04-19 00:00:00.000	1966	4	19
14	Hunter Jackson	1960-09-04 00:00:00.000	1960	9	4
15	Bradley Davis	1971-08-14 00:00:00.000	1971	8	14
16	Sanjay Wadhwa	1960-07-17 00:00:00.000	1960	7	17
17	Sahter Snezana	1967-06-28 00:00:00.000	1967	6	28
18	Yalcinalp Umit	1968-05-25 00:00:00.000	1968	5	25
19	Alexa Johnson	1969-04-21 00:00:00.000	1969	4	21
20	Robby Whitehat	1972-03-26 00:00:00.000	1972	3	26
21	Nathan Whitehat	1999-02-28 00:00:00.000	1999	2	28
22	Sue Greyhat	1998-01-04 00:00:00.000	1998	1	4

23	Mohammad Whitehat	1997-04-04 00:00:00.000	1997	4	4
24	Justice Blackhat	1995-01-31 00:00:00.000	1995	1	31

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1 ↗

```
1 SELECT EmployeeName, Surname, SUBSTRING(Surname, 1, 1) AS FirstLetter, SUBSTRING
  (Surname, 2, 1) AS SecondLetter, SUBSTRING(Surname, 1, 2) AS FirstTwoLetters
2 FROM Employees;
3
4 /* example of how SUBSTRING works */
```

	EmployeeName	Surname	FirstLetter	SecondLetter	FirstTwoLetters
1	Ariez	Hart	H	a	Ha
2	Jason	Chaney	C	h	Ch
3	Nia	Anderson	A	n	An
4	Holly	Wright	W	r	Wr
5	Abram	Goldberg	G	o	Go
6	Dennis	Christilaw	C	h	Ch
7	Mohammad	Susarla	S	u	Su
8	Denise	McInerney	M	c	Mc
9	Curtis	Shapira	S	h	Sh
10	Linda	Liu	L	i	Li
11	Adam	Booker	B	o	Bo
12	Carmen	Redhat	R	e	Re
13	David	Othus	O	t	Ot
14	Hunter	Jackson	J	a	Ja
15	Bradley	Davis	D	a	Da
16	Sanjay	Wadhwa	W	a	Wa
17	Sahter	Snezana	S	n	Sn
18	Yalcinalp	Umit	U	m	Um
19	Alexa	Johnson	J	o	Jo
20	Robby	Whitehat	W	h	Wh
21	Nathan	Whitehat	W	h	Wh
22	Sue	Greyhat	G	r	Gr

23	Mohammad	Whitehat	W	h	Wh
24	Justice	Blackhat	B	I	Bl

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1

```
1 SELECT EmployeeName, Surname, LEFT(Surname, 1) AS FirstLetter, LEFT(Surname, 3) AS FirstThreeLetter, LEFT(Surname, 4) AS FirstFourLetter
2 FROM Employees;
3
4
```

	EmployeeName	Surname	FirstLetter	FirstThreeLetter	FirstFourLetter
1	Ariez	Hart	H	Har	Hart
2	Jason	Chaney	C	Cha	Chan
3	Nia	Anderson	A	And	Ande
4	Holly	Wright	W	Wri	Wrig
5	Abram	Goldberg	G	Gol	Gold
6	Dennis	Christilaw	C	Chr	Chri
7	Mohammad	Susarla	S	Sus	Susa
8	Denise	McInerney	M	McI	McIn
9	Curtis	Shapira	S	Sha	Shap
10	Linda	Liu	L	Liu	Liu
11	Adam	Booker	B	Boo	Book
12	Carmen	Redhat	R	Red	Redh
13	David	Othus	O	Oth	Othu
14	Hunter	Jackson	J	Jac	Jack
15	Bradley	Davis	D	Dav	Davi
16	Sanjay	Wadhwa	W	Wad	Wadh
17	Sahter	Snezana	S	Sne	Snez
18	Yalcinalp	Umit	U	Umi	Umit
19	Alexa	Johnson	J	Joh	John
20	Robby	Whitehat	W	Whi	Whit
21	Nathan	Whitehat	W	Whi	Whit
22	Sue	Greyhat	G	Gre	Grey

23	Mohammad	Whitehat	W	Whi	Whit
24	Justice	Blackhat	B	Bla	Blac

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1

```
1 SELECT EmployeeName, Surname, RIGHT(Surname, 1) AS LastLetter, RIGHT(Surname, 2) AS ↵
    LastTwoLetter, RIGHT(Surname, 4) AS LastFourLetter
2 FROM Employees;
3
```

	EmployeeName	Surname	LastLetter	LastTwoLetter	LastFourLetter
1	Ariez	Hart	t	rt	Hart
2	Jason	Chaney	y	ey	aney
3	Nia	Anderson	n	on	rson
4	Holly	Wright	t	ht	ight
5	Abram	Goldberg	g	rg	berg
6	Dennis	Christilaw	w	aw	ilaw
7	Mohammad	Susarla	a	la	rla
8	Denise	McInerney	y	ey	rney
9	Curtis	Shapira	a	ra	pira
10	Linda	Liu	u	iu	Liu
11	Adam	Booker	r	er	oker
12	Carmen	Redhat	t	at	dhat
13	David	Othus	s	us	thus
14	Hunter	Jackson	n	on	kson
15	Bradley	Davis	s	is	avis
16	Sanjay	Wadhwa	a	wa	dhwa
17	Sahter	Snezana	a	na	zana
18	Yalcinalp	Umit	t	it	Umit
19	Alexa	Johnson	n	on	nson
20	Robby	Whitehat	t	at	ehat
21	Nathan	Whitehat	t	at	ehat
22	Sue	Greyhat	t	at	yhat

23	Mohammad	Whitehat	t	at	ehat
24	Justice	Blackhat	t	at	khat

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```
1 /* using left and right we can find the n letter of a specified string, backwards moving forwards or vice versa */
2
3 SELECT EmployeeName, Surname, RIGHT(LEFT(Surname, 3), 1) AS ThirdLetterFromStartOfString, SUBSTRING(Surname, 3, 1) AS ↵
    AltFormThirdLetterFromStartOfString, LEFT(RIGHT(Surname, 3), 1) AS ThirdLetterFromEndOfString
4 FROM Employees;
```

1

	EmployeeName	Surname	ThirdLetterFromStartOfString	AltFormThirdLetterFromStartOfString	ThirdLetterFromEndOfString
1	Ariez	Hart	r	r	a
2	Jason	Chaney	a	a	n
3	Nia	Anderson	d	d	s
4	Holly	Wright	i	i	g
5	Abram	Goldberg	l	l	e
6	Dennis	Christilaw	r	r	l
7	Mohammad	Susarla	s	s	r
8	Denise	McInerney	l	l	n
9	Curtis	Shapira	a	a	i
10	Linda	Liu	u	u	L
11	Adam	Booker	o	o	k
12	Carmen	Redhat	d	d	h
13	David	Othus	h	h	h
14	Hunter	Jackson	c	c	s
15	Bradley	Davis	v	v	v
16	Sanjay	Wadhwa	d	d	h
17	Sahter	Snezana	e	e	a
18	Yalcinalp	Umit	i	i	m
19	Alexa	Johnson	h	h	s
20	Robby	Whitehat	i	i	h
21	Nathan	Whitehat	i	i	h
22	Sue	Greyhat	e	e	h

23	Mohammad	Whitehat	i	i	h
24	Justice	Blackhat	a	a	h

```
1 SELECT Surname
2 FROM Employees e
3 WHERE CHARINDEX('a', surname) > 0 /* 0 is n */;
4
5 /* Character index shows strings where the character is =, !=, >, < etc n into the ↵
   specified string */
```

Surname

1	Hart
2	Chaney
3	Anderson
4	Christilaw
5	Susarla
6	Shapira
7	Redhat
8	Jackson
9	Davis
10	Wadhwa
11	Snezana
12	Whitehat
13	Whitehat
14	Greyhat
15	Whitehat
16	Blackhat

```
1 SELECT EmployeeName + ' ' + Surname + ' ' + CAST(Birthdate AS VARCHAR) AS info
2 FROM Employees;
3
4 /* CAST and CONVERT convert datatypes */
```

info

1	Ariez Hart Feb 20 1991 12:00AM
2	NULL
3	Nia Anderson Oct 21 1980 12:00AM
4	Holly Wright Jan 2 2001 12:00AM
5	Abram Goldberg Oct 31 1983 12:00AM
6	NULL
7	Mohammad Susarla Mar 1 1989 12:00AM
8	Denise McInerney Apr 1 1990 12:00AM
9	Curtis Shapira Dec 15 1997 12:00AM
10	Linda Liu Dec 23 1965 12:00AM
11	Adam Booker Oct 12 1990 12:00AM
12	Carmen Redhat Sep 13 1970 12:00AM
13	David Othus Apr 19 1966 12:00AM
14	Hunter Jackson Sep 4 1960 12:00AM
15	Bradley Davis Aug 14 1971 12:00AM
16	Sanjay Wadhwa Jul 17 1960 12:00AM
17	Sahter Snezana Jun 28 1967 12:00AM
18	Yalcinalp Umit May 25 1968 12:00AM
19	Alexa Johnson Apr 21 1969 12:00AM
20	Robby Whitehat Mar 26 1972 12:00AM
21	Nathan Whitehat Feb 28 1999 12:00AM
22	Sue Greyhat Jan 4 1998 12:00AM
23	Mohammad Whitehat Apr 4 1997 12:00AM
24	Justice Blackhat Jan 31 1995 12:00AM

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```
1 SELECT EmployeeName + ' ' + Surname + ' ' + CONVERT(VARCHAR, Birthdate, 1 /* Date  */  
      Style 1 mm/dd/yy */) AS info  
2 FROM Employees;  
3  
4
```

info

1	Ariez Hart 02/20/91
2	NULL
3	Nia Anderson 10/21/80
4	Holly Wright 01/02/01
5	Abram Goldberg 10/31/83
6	NULL
7	Mohammad Susarla 03/01/89
8	Denise McInerney 04/01/90
9	Curtis Shapira 12/15/97
10	Linda Liu 12/23/65
11	Adam Booker 10/12/90
12	Carmen Redhat 09/13/70
13	David Othus 04/19/66
14	Hunter Jackson 09/04/60
15	Bradley Davis 08/14/71
16	Sanjay Wadhwa 07/17/60
17	Sahter Snezana 06/28/67
18	Yalcinalp Umit 05/25/68
19	Alexa Johnson 04/21/69
20	Robby Whitehat 03/26/72
21	Nathan Whitehat 02/28/99
22	Sue Greyhat 01/04/98
23	Mohammad Whitehat 04/04/97
24	Justice Blackhat 01/31/95

```
1 SELECT Surname, UPPER(Surname) CAPITAL, LOWER(Surname) lowercase
2 FROM Employees;
```

	Surname	CAPITAL	lowercase
1	Hart	HART	hart
2	Chaney	CHANAY	chaney
3	Anderson	ANDERSON	anderson
4	Wright	WRIGHT	wright
5	Goldberg	GOLDBERG	goldberg
6	Christilaw	CHRISTILAW	christilaw
7	Susarla	SUSARLA	susarla
8	McInerney	MCINERNEY	mcinerney
9	Shapira	SHAPIRA	shapira
10	Liu	LIU	liu
11	Booker	BOOKER	booker
12	Redhat	REDHAT	redhat
13	Othus	OTHUS	othus
14	Jackson	JACKSON	jackson
15	Davis	DAVIS	davis
16	Wadhwa	WADHWA	wadhwa
17	Snezana	SNEZANA	snezana
18	Umit	UMIT	umit
19	Johnson	JOHNSON	johson
20	Whitehat	WHITEHAT	whitehat
21	Whitehat	WHITEHAT	whitehat
22	Greyhat	GREYHAT	greyhat
23	Whitehat	WHITEHAT	whitehat
24	Blackhat	BLACKHAT	blackhat

```
1 SELECT Surname, EmployeeName,
2 GETDATE() AS currentlyLikeNow, Birthdate,
3 Birthdate + 365 AS PlusBirthdate,
4 Birthdate - 365 AS MinusBirthdate,
5 DATEDIFF(day, birthdate, GETDATE()) AS DayNum
6 FROM Employees;
```

	Surname	EmployeeName	currentlyLikeNow	Birthdate	PlusBirthdate
1	Hart	Ariez	2020-01-04 18:47:40.287	1991-02-20 00:00:00.000	1992-02-20 00:00:00.000
2	Chaney	Jason	2020-01-04 18:47:40.287	NULL	NULL
3	Anderson	Nia	2020-01-04 18:47:40.287	1980-10-21 00:00:00.000	1981-10-21 00:00:00.000
4	Wright	Holly	2020-01-04 18:47:40.287	2001-01-02 00:00:00.000	2002-01-02 00:00:00.000
5	Goldberg	Abram	2020-01-04 18:47:40.287	1983-10-31 00:00:00.000	1984-10-30 00:00:00.000
6	Christilaw	Dennis	2020-01-04 18:47:40.287	NULL	NULL
7	Susarla	Mohammad	2020-01-04 18:47:40.287	1989-03-01 00:00:00.000	1990-03-01 00:00:00.000
8	McInerney	Denise	2020-01-04 18:47:40.287	1990-04-01 00:00:00.000	1991-04-01 00:00:00.000
9	Shapira	Curtis	2020-01-04 18:47:40.287	1997-12-15 00:00:00.000	1998-12-15 00:00:00.000
10	Liu	Linda	2020-01-04 18:47:40.287	1965-12-23 00:00:00.000	1966-12-23 00:00:00.000
11	Booker	Adam	2020-01-04 18:47:40.287	1990-10-12 00:00:00.000	1991-10-12 00:00:00.000
12	Redhat	Carmen	2020-01-04 18:47:40.287	1970-09-13 00:00:00.000	1971-09-13 00:00:00.000
13	Othus	David	2020-01-04 18:47:40.287	1966-04-19 00:00:00.000	1967-04-19 00:00:00.000
14	Jackson	Hunter	2020-01-04 18:47:40.287	1960-09-04 00:00:00.000	1961-09-04 00:00:00.000
15	Davis	Bradley	2020-01-04 18:47:40.287	1971-08-14 00:00:00.000	1972-08-13 00:00:00.000
16	Wadhwa	Sanjay	2020-01-04 18:47:40.287	1960-07-17 00:00:00.000	1961-07-17 00:00:00.000
17	Snezana	Sahter	2020-01-04 18:47:40.287	1967-06-28 00:00:00.000	1968-06-27 00:00:00.000
18	Umit	Yalcinalp	2020-01-04 18:47:40.287	1968-05-25 00:00:00.000	1969-05-25 00:00:00.000
19	Johnson	Alexa	2020-01-04 18:47:40.287	1969-04-21 00:00:00.000	1970-04-21 00:00:00.000
20	Whitehat	Robby	2020-01-04 18:47:40.287	1972-03-26 00:00:00.000	1973-03-26 00:00:00.000
21	Whitehat	Nathan	2020-01-04 18:47:40.287	1999-02-28 00:00:00.000	2000-02-28 00:00:00.000
22	Greyhat	Sue	2020-01-04 18:47:40.287	1998-01-04 00:00:00.000	1999-01-04 00:00:00.000

MinusBirthdate	DayNum
1990-02-20 00:00:00.000	10545
NULL	NULL
1979-10-22 00:00:00.000	14319
2000-01-03 00:00:00.000	6941
1982-10-31 00:00:00.000	13214
NULL	NULL
1988-03-01 00:00:00.000	11266
1989-04-01 00:00:00.000	10870
1996-12-15 00:00:00.000	8055
1964-12-23 00:00:00.000	19735
1989-10-12 00:00:00.000	10676
1969-09-13 00:00:00.000	18010
1965-04-19 00:00:00.000	19618
1959-09-05 00:00:00.000	21671
1970-08-14 00:00:00.000	17675
1959-07-18 00:00:00.000	21720
1966-06-28 00:00:00.000	19183
1967-05-26 00:00:00.000	18851
1968-04-21 00:00:00.000	18520
1971-03-27 00:00:00.000	17450
1998-02-28 00:00:00.000	7615
1997-01-04 00:00:00.000	8035

23	Whitehat	Mohammad	2020-01-04 18:47:40.287	1997-04-04 00:00:00.000	1998-04-04 00:00:00.000
24	Blackhat	Justice	2020-01-04 18:47:40.287	1995-01-31 00:00:00.000	1996-01-31 00:00:00.000

1996-04-04 00:00:00.000	8310
1994-01-31 00:00:00.000	9104

```
1 SELECT COUNT(EmployeeName) AS NumberOfEmployees, COUNT(DISTINCT EmployeeName) AS UniqueNamesAtCompany
2 FROM Employees;
```

NumberOfEmployees	UniqueNamesAtCompany
1	24

```
1 CREATE TABLE TempEmployees
2 (
3     id INT PRIMARY KEY,
4     EmployeeName VARCHAR(3),
5     Surname VARCHAR (50)
6 );
7
8 /* How to fix EmployeeName VARCHAR(3) an set it to EmployeeName VARCHAR(30)*/
9
10 ALTER TABLE TempEmployees
11 ALTER COLUMN EmployeeName VARCHAR(30);
12
13 SELECT * FROM TempEmployees;
14
15 /* currently empty, good */
16
17 INSERT INTO TempEmployees
18 SELECT EmployeeID, EmployeeName, Surname
19 FROM Employees
20 WHERE Surname LIKE 'O%';
21
22 INSERT INTO TempEmployees
23 SELECT EmployeeID, EmployeeName, Surname
24 FROM Employees
25 WHERE Surname LIKE 'H%';
26
27 INSERT INTO TempEmployees
28 SELECT EmployeeID, EmployeeName, Surname
29 FROM Employees
30 WHERE Surname LIKE '%I%';
31
32 SELECT * FROM TempEmployees;
33
34 SELECT * FROM Employees;
```

	id	EmployeeName	Surname
1	1	Ariez	Hart
2	4	Holly	Wright
3	6	Dennis	Christilaw
4	8	Denise	McInerney
5	9	Curtis	Shapira
6	10	Linda	Liu
7	13	David	Othus
8	15	Bradley	Davis
9	18	Yalcinalp	Umit
10	20	Robby	Whitehat
11	21	Nathan	Whitehat
12	23	Mohammad	Whitehat

	EmployeeID	DepID	Surname	EmployeeName
1	1	1	Hart	Ariez
2	2	1	Chaney	Jason
3	3	1	Anderson	Nia
4	4	1	Wright	Holly
5	5	1	Goldberg	Abram
6	6	2	Christilaw	Dennis
7	7	2	Susarla	Mohammad
8	8	2	McInerney	Denise
9	9	2	Shapira	Curtis
10	10	2	Liu	Linda
11	11	2	Booker	Adam
12	12	2	Redhat	Carmen
13	13	3	Othus	David
14	14	3	Jackson	Hunter
15	15	3	Davis	Bradley
16	16	3	Wadhwa	Sanjay
17	17	3	Snezana	Sahter
18	18	3	Umit	Yalcinalp
19	19	4	Johnson	Alexa
20	20	4	Whitehat	Robby
21	21	4	Whitehat	Nathan
22	22	4	Greyhat	Sue
23	23	4	Whitehat	Mohammad
24	24	4	Blackhat	Justice

Birthdate	Height	BossID
1991-02-20 00:00:00.000	1.63	1
NULL	NULL	1
1980-10-21 00:00:00.000	1.27	2
2001-01-02 00:00:00.000	1.37	2
1983-10-31 00:00:00.000	1.86	2
NULL	NULL	2
1989-03-01 00:00:00.000	1.58	2
1990-04-01 00:00:00.000	1.05	2
1997-12-15 00:00:00.000	1.3	3
1965-12-23 00:00:00.000	1.7	2
1990-10-12 00:00:00.000	1.89	3
1970-09-13 00:00:00.000	1.79	3
1966-04-19 00:00:00.000	1.86	4
1960-09-04 00:00:00.000	1.47	4
1971-08-14 00:00:00.000	1.43	4
1960-07-17 00:00:00.000	1.9	5
1967-06-28 00:00:00.000	1.37	5
1968-05-25 00:00:00.000	1.09	5
1969-04-21 00:00:00.000	1.7	6
1972-03-26 00:00:00.000	1.43	6
1999-02-28 00:00:00.000	1.82	6
1998-01-04 00:00:00.000	1.65	7
1997-04-04 00:00:00.000	1.73	7
1995-01-31 00:00:00.000	1.75	7

	id	EmployeeName	Surname	Birthdate
1	1	Ariez	Hart	1991-02-20 00:00:00.000
2	4	Holly	Wright	2001-01-02 00:00:00.000
3	6	Dennis	Christilaw	NULL
4	8	Denise	McInerney	1990-04-01 00:00:00.000
5	9	Curtis	Shapira	1997-12-15 00:00:00.000
6	10	Linda	Liu	1965-12-23 00:00:00.000
7	13	David	Othus	1966-04-19 00:00:00.000
8	15	Bradley	Davis	1971-08-14 00:00:00.000
9	18	Yalcinalp	Umit	1968-05-25 00:00:00.000
10	20	Robby	Whitehat	1972-03-26 00:00:00.000
11	21	Nathan	Whitehat	1999-02-28 00:00:00.000
12	23	Mohammad	Whitehat	1997-04-04 00:00:00.000

MiddleName

Elle
Maria
James
James
James
Maria
Stewart
James

	id	EmployeeName	Surname	Birthdate	MiddleName
1	1	Ariez	Hart	NULL	NULL
2	4	Holly	Wright	NULL	NULL
3	6	Dennis	Christilaw	NULL	NULL
4	8	Denise	McInerney	NULL	NULL
5	9	Curtis	Shapira	NULL	NULL
6	10	Linda	Liu	NULL	NULL
7	13	David	Othus	NULL	NULL
8	15	Bradley	Davis	NULL	NULL
9	18	Yalcinalp	Umit	NULL	NULL
10	20	Robby	Whitehat	NULL	NULL
11	21	Nathan	Whitehat	NULL	NULL
12	23	Mohammad	Whitehat	NULL	NULL

	id	EmployeeName	Surname	Birthdate	MiddleName
1	1	Ariez	Hart	NULL	James
2	4	Holly	Wright	NULL	James
3	6	Dennis	Christilaw	NULL	James
4	8	Denise	McInerney	NULL	James
5	9	Curtis	Shapira	NULL	James
6	10	Linda	Liu	NULL	James
7	13	David	Othus	NULL	James
8	15	Bradley	Davis	NULL	James
9	18	Yalcinalp	Umit	NULL	James
10	20	Robby	Whitehat	NULL	James
11	21	Nathan	Whitehat	NULL	James
12	23	Mohammad	Whitehat	NULL	James

	id	EmployeeName	Surname	Birthdate	MiddleName
1	1	Ariez	Hart	1991-02-20 00:00:00.000	Elle
2	4	Holly	Wright	2001-01-02 00:00:00.000	Maria
3	6	Dennis	Christilaw	NULL	James
4	8	Denise	McInerney	1990-04-01 00:00:00.000	James
5	9	Curtis	Shapira	1997-12-15 00:00:00.000	James
6	10	Linda	Liu	1965-12-23 00:00:00.000	Maria
7	13	David	Othus	1966-04-19 00:00:00.000	Stewart
8	15	Bradley	Davis	1971-08-14 00:00:00.000	James
9	18	Yalcinalp	Umit	1968-05-25 00:00:00.000	James
10	20	Robby	Whitehat	1972-03-26 00:00:00.000	James
11	21	Nathan	Whitehat	1999-02-28 00:00:00.000	James
12	23	Mohammad	Whitehat	1997-04-04 00:00:00.000	James

```
1 ALTER TABLE TempEmployees
2 DROP COLUMN MiddleName;
3
4 /* gone forever, we don't need middle names */
5
6 SELECT *
7 FROM TempEmployees;
```

	id	EmployeeName	Surname	Birthdate
1	1	Ariez	Hart	1991-02-20 00:00:00.000
2	4	Holly	Wright	2001-01-02 00:00:00.000
3	6	Dennis	Christilaw	NULL
4	8	Denise	McInerney	1990-04-01 00:00:00.000
5	9	Curtis	Shapira	1997-12-15 00:00:00.000
6	10	Linda	Liu	1965-12-23 00:00:00.000
7	13	David	Othus	1966-04-19 00:00:00.000
8	15	Bradley	Davis	1971-08-14 00:00:00.000
9	18	Yalcinalp	Umit	1968-05-25 00:00:00.000
10	20	Robby	Whitehat	1972-03-26 00:00:00.000
11	21	Nathan	Whitehat	1999-02-28 00:00:00.000
12	23	Mohammad	Whitehat	1997-04-04 00:00:00.000

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1

```
1 DELETE FROM TempEmployees
2 WHERE Birthdate > '1982-01-01';
3
4 SELECT *
5 FROM TempEmployees;
```

	id	EmployeeName	Surname	Birthdate
1	6	Dennis	Christilaw	NULL
2	10	Linda	Liu	1965-12-23 00:00:00.000
3	13	David	Othus	1966-04-19 00:00:00.000
4	15	Bradley	Davis	1971-08-14 00:00:00.000
5	18	Yalcinalp	Umit	1968-05-25 00:00:00.000
6	20	Robby	Whitehat	1972-03-26 00:00:00.000

```
1 DELETE FROM TempEmployees
2 WHERE EmployeeName IN
3 (
4     SELECT EmployeeName
5     FROM Employees
6     WHERE EmployeeName LIKE '%Y%'
7 );
8
9 SELECT *
10 FROM TempEmployees;
11
12 SELECT *
13 FROM Employees;
14
15 DELETE FROM TempEmployees;
16
17 /* deletes all records but table and table structure remains */
18
19 SELECT * FROM TempEmployees;
20
```

	id	EmployeeName	Surname	Birthdate
1	6	Dennis	Christilaw	NULL
2	10	Linda	Liu	1965-12-23 00:00:00.000
3	13	David	Othus	1966-04-19 00:00:00.000

	EmployeeID	DepID	Surname	EmployeeName
1	1	1	Hart	Ariez
2	2	1	Chaney	Jason
3	3	1	Anderson	Nia
4	4	1	Wright	Holly
5	5	1	Goldberg	Abram
6	6	2	Christilaw	Dennis
7	7	2	Susarla	Mohammad
8	8	2	McInerney	Denise
9	9	2	Shapira	Curtis
10	10	2	Liu	Linda
11	11	2	Booker	Adam
12	12	2	Redhat	Carmen
13	13	3	Othus	David
14	14	3	Jackson	Hunter
15	15	3	Davis	Bradley
16	16	3	Wadhwa	Sanjay
17	17	3	Snezana	Sahter
18	18	3	Umit	Yalcinalp
19	19	4	Johnson	Alexa
20	20	4	Whitehat	Robby
21	21	4	Whitehat	Nathan
22	22	4	Greyhat	Sue
23	23	4	Whitehat	Mohammad
24	24	4	Blackhat	Justice

Birthdate	Height	BossID
1991-02-20 00:00:00.000	1.63	1
NULL	NULL	1
1980-10-21 00:00:00.000	1.27	2
2001-01-02 00:00:00.000	1.37	2
1983-10-31 00:00:00.000	1.86	2
NULL	NULL	2
1989-03-01 00:00:00.000	1.58	2
1990-04-01 00:00:00.000	1.05	2
1997-12-15 00:00:00.000	1.3	3
1965-12-23 00:00:00.000	1.7	2
1990-10-12 00:00:00.000	1.89	3
1970-09-13 00:00:00.000	1.79	3
1966-04-19 00:00:00.000	1.86	4
1960-09-04 00:00:00.000	1.47	4
1971-08-14 00:00:00.000	1.43	4
1960-07-17 00:00:00.000	1.9	5
1967-06-28 00:00:00.000	1.37	5
1968-05-25 00:00:00.000	1.09	5
1969-04-21 00:00:00.000	1.7	6
1972-03-26 00:00:00.000	1.43	6
1999-02-28 00:00:00.000	1.82	6
1998-01-04 00:00:00.000	1.65	7
1997-04-04 00:00:00.000	1.73	7
1995-01-31 00:00:00.000	1.75	7

id	EmployeeName	Surname	Birthdate
-----------	---------------------	----------------	------------------

```
1 INSERT INTO TempEmployees (ID, EmployeeName, Surname, Birthdate)
2 SELECT EmployeeID, EmployeeName, Surname, Birthdate
3 FROM Employees
4 WHERE Surname LIKE '%W%';
5
6 SELECT * FROM TempEmployees;
7
8 TRUNCATE TABLE TempEmployees;
9
10 /* Truncate removes all rows from a table. */
11 -- it's similar to using DELETE however
12 -- it has a faster run time and uses less
13 -- of the system resources when you're
14 -- trying to clear everything in a table
15
16 SELECT * FROM TempEmployees;
17
18 /* table is empty again */
19
20 DROP TABLE TempEmployees;
```

	id	EmployeeName	Surname	Birthdate
1	4	Holly	Wright	2001-01-02 00:00:00.000
2	6	Dennis	Christilaw	NULL
3	16	Sanjay	Wadhwa	1960-07-17 00:00:00.000
4	20	Robby	Whitehat	1972-03-26 00:00:00.000
5	21	Nathan	Whitehat	1999-02-28 00:00:00.000
6	23	Mohammad	Whitehat	1997-04-04 00:00:00.000

id	EmployeeName	Surname	Birthdate
-----------	---------------------	----------------	------------------

C:\Users\ariez\AppData\Local\Temp\~vs3005.sql 1

```
1 SELECT e.EmployeeID, e.EmployeeName, e.Surname, e.Birthdate, d.DepName AS Department
2 FROM Employees e, Departments d
3 WHERE e.DepID = d.DepID;
4
5 CREATE VIEW vEmployeesDep
6 AS
7 SELECT e.EmployeeID, e.EmployeeName, e.Surname, e.Birthdate, d.DepName AS Department
8 FROM Employees e, Departments d
9 WHERE e.DepID = d.DepID
10
11 SELECT * FROM vEmployeesDep;
12 DROP VIEW vEmployeesDep;
13
14 CREATE VIEW vEmployees (EmpID, EmpDepID, EmpSurname, EmpName, EmpBirthdate)
15 AS
16 SELECT EmployeeID, DepID, Surname, EmployeeName, Birthdate
17 FROM Employees;
18
19 INSERT INTO vEmployees (EmpID, EmpSurname, EmpName, EmpBirthdate)
20 VALUES (25, 'Lu', 'Haojie', '2018-06-02');
21
22 INSERT INTO vEmployees (EmpID, EmpSurname, EmpName, EmpBirthdate)
23 VALUES (26, 'Lu', 'Haojie', '2018-06-02');
24
25 DELETE FROM vEmployees WHERE EmpID = 26;
26
27 /* views are not only read-only but can also be updated */
28
29 SELECT * FROM vEmployees;
30 SELECT * FROM Employees;
31
32 UPDATE vEmployees
33 SET EmpDepID = 2
34 WHERE EmpSurname = 'Lu';
35
36 /* You CAN update through a view but this is considered bad practice */
37 /* If you update/delete records in the view it will update the related table */
38
39 ALTER VIEW vEmployees
40 (
41     EmpSurname, EmpName, EmpBirthdate
42 ) AS
43     SELECT e.EmployeeName, e.Surname, e.Birthdate
44     FROM Employees e;
45 /* We can alter the SELECT statement for the view */
46
47 SELECT * FROM vEmployees;
```

	EmployeeID	EmployeeName	Surname
1	1	Ariez	Hart
2	2	Jason	Chaney
3	3	Nia	Anderson
4	4	Holly	Wright
5	5	Abram	Goldberg
6	6	Dennis	Christilaw
7	7	Mohammad	Susarla
8	8	Denise	McInerney
9	9	Curtis	Shapira
10	10	Linda	Liu
11	11	Adam	Booker
12	12	Carmen	Redhat
13	13	David	Othus
14	14	Hunter	Jackson
15	15	Bradley	Davis
16	16	Sanjay	Wadhwa
17	17	Sahter	Snezana
18	18	Yalcinalp	Umit
19	19	Alexa	Johnson
20	20	Robby	Whitehat
21	21	Nathan	Whitehat
22	22	Sue	Greyhat
23	23	Mohammad	Whitehat
24	24	Justice	Blackhat
25	25	Haojie	Lu

Birthdate	Department
1991-02-20 00:00:00.000	Analytics
NULL	Analytics
1980-10-21 00:00:00.000	Analytics
2001-01-02 00:00:00.000	Analytics
1983-10-31 00:00:00.000	Analytics
NULL	Database Architecture
1989-03-01 00:00:00.000	Database Architecture
1990-04-01 00:00:00.000	Database Architecture
1997-12-15 00:00:00.000	Database Architecture
1965-12-23 00:00:00.000	Database Architecture
1990-10-12 00:00:00.000	Database Architecture
1970-09-13 00:00:00.000	Database Architecture
1966-04-19 00:00:00.000	Database Administration
1960-09-04 00:00:00.000	Database Administration
1971-08-14 00:00:00.000	Database Administration
1960-07-17 00:00:00.000	Database Administration
1967-06-28 00:00:00.000	Database Administration
1968-05-25 00:00:00.000	Database Administration
1969-04-21 00:00:00.000	Cyber Security
1972-03-26 00:00:00.000	Cyber Security
1999-02-28 00:00:00.000	Cyber Security
1998-01-04 00:00:00.000	Cyber Security
1997-04-04 00:00:00.000	Cyber Security
1995-01-31 00:00:00.000	Cyber Security
2018-06-02 00:00:00.000	Database Architecture

	EmployeeID	EmployeeName	Surname
1	1	Ariez	Hart
2	2	Jason	Chaney
3	3	Nia	Anderson
4	4	Holly	Wright
5	5	Abram	Goldberg
6	6	Dennis	Christilaw
7	7	Mohammad	Susarla
8	8	Denise	McInerney
9	9	Curtis	Shapira
10	10	Linda	Liu
11	11	Adam	Booker
12	12	Carmen	Redhat
13	13	David	Othus
14	14	Hunter	Jackson
15	15	Bradley	Davis
16	16	Sanjay	Wadhwa
17	17	Sahter	Snezana
18	18	Yalcinalp	Umit
19	19	Alexa	Johnson
20	20	Robby	Whitehat
21	21	Nathan	Whitehat
22	22	Sue	Greyhat
23	23	Mohammad	Whitehat
24	24	Justice	Blackhat
25	25	Haojie	Lu

Birthdate	Department
1991-02-20 00:00:00.000	Analytics
NULL	Analytics
1980-10-21 00:00:00.000	Analytics
2001-01-02 00:00:00.000	Analytics
1983-10-31 00:00:00.000	Analytics
NULL	Database Architecture
1989-03-01 00:00:00.000	Database Architecture
1990-04-01 00:00:00.000	Database Architecture
1997-12-15 00:00:00.000	Database Architecture
1965-12-23 00:00:00.000	Database Architecture
1990-10-12 00:00:00.000	Database Architecture
1970-09-13 00:00:00.000	Database Architecture
1966-04-19 00:00:00.000	Database Administration
1960-09-04 00:00:00.000	Database Administration
1971-08-14 00:00:00.000	Database Administration
1960-07-17 00:00:00.000	Database Administration
1967-06-28 00:00:00.000	Database Administration
1968-05-25 00:00:00.000	Database Administration
1969-04-21 00:00:00.000	Cyber Security
1972-03-26 00:00:00.000	Cyber Security
1999-02-28 00:00:00.000	Cyber Security
1998-01-04 00:00:00.000	Cyber Security
1997-04-04 00:00:00.000	Cyber Security
1995-01-31 00:00:00.000	Cyber Security
2018-06-02 00:00:00.000	Database Architecture

	EmpID	EmpDepID	EmpSurname	EmpName
1	1	1	Hart	Ariez
2	2	1	Chaney	Jason
3	3	1	Anderson	Nia
4	4	1	Wright	Holly
5	5	1	Goldberg	Abram
6	6	2	Christilaw	Dennis
7	7	2	Susarla	Mohammad
8	8	2	McInerney	Denise
9	9	2	Shapira	Curtis
10	10	2	Liu	Linda
11	11	2	Booker	Adam
12	12	2	Redhat	Carmen
13	13	3	Othus	David
14	14	3	Jackson	Hunter
15	15	3	Davis	Bradley
16	16	3	Wadhwa	Sanjay
17	17	3	Snezana	Sahter
18	18	3	Umit	Yalcinalp
19	19	4	Johnson	Alexa
20	20	4	Whitehat	Robby
21	21	4	Whitehat	Nathan
22	22	4	Greyhat	Sue
23	23	4	Whitehat	Mohammad
24	24	4	Blackhat	Justice
25	25	NULL	Lu	Haojie
26	26	NULL	Lu	Haojie

EmpBirthdate

1991-02-20 00:00:00.000
NULL
1980-10-21 00:00:00.000
2001-01-02 00:00:00.000
1983-10-31 00:00:00.000
NULL
1989-03-01 00:00:00.000
1990-04-01 00:00:00.000
1997-12-15 00:00:00.000
1965-12-23 00:00:00.000
1990-10-12 00:00:00.000
1970-09-13 00:00:00.000
1966-04-19 00:00:00.000
1960-09-04 00:00:00.000
1971-08-14 00:00:00.000
1960-07-17 00:00:00.000
1967-06-28 00:00:00.000
1968-05-25 00:00:00.000
1969-04-21 00:00:00.000
1972-03-26 00:00:00.000
1999-02-28 00:00:00.000
1998-01-04 00:00:00.000
1997-04-04 00:00:00.000
1995-01-31 00:00:00.000
2018-06-02 00:00:00.000
2018-06-02 00:00:00.000

	EmpID	EmpDepID	EmpSurname	EmpName
1	1	1	Hart	Ariez
2	2	1	Chaney	Jason
3	3	1	Anderson	Nia
4	4	1	Wright	Holly
5	5	1	Goldberg	Abram
6	6	2	Christilaw	Dennis
7	7	2	Susarla	Mohammad
8	8	2	McInerney	Denise
9	9	2	Shapira	Curtis
10	10	2	Liu	Linda
11	11	2	Booker	Adam
12	12	2	Redhat	Carmen
13	13	3	Othus	David
14	14	3	Jackson	Hunter
15	15	3	Davis	Bradley
16	16	3	Wadhwa	Sanjay
17	17	3	Snezana	Sahter
18	18	3	Umit	Yalcinalp
19	19	4	Johnson	Alexa
20	20	4	Whitehat	Robby
21	21	4	Whitehat	Nathan
22	22	4	Greyhat	Sue
23	23	4	Whitehat	Mohammad
24	24	4	Blackhat	Justice
25	25	NULL	Lu	Haojie

EmpBirthdate

1991-02-20 00:00:00.000
NULL
1980-10-21 00:00:00.000
2001-01-02 00:00:00.000
1983-10-31 00:00:00.000
NULL
1989-03-01 00:00:00.000
1990-04-01 00:00:00.000
1997-12-15 00:00:00.000
1965-12-23 00:00:00.000
1990-10-12 00:00:00.000
1970-09-13 00:00:00.000
1966-04-19 00:00:00.000
1960-09-04 00:00:00.000
1971-08-14 00:00:00.000
1960-07-17 00:00:00.000
1967-06-28 00:00:00.000
1968-05-25 00:00:00.000
1969-04-21 00:00:00.000
1972-03-26 00:00:00.000
1999-02-28 00:00:00.000
1998-01-04 00:00:00.000
1997-04-04 00:00:00.000
1995-01-31 00:00:00.000
2018-06-02 00:00:00.000

	EmployeeID	DepID	Surname	EmployeeName
1	1	1	Hart	Ariez
2	2	1	Chaney	Jason
3	3	1	Anderson	Nia
4	4	1	Wright	Holly
5	5	1	Goldberg	Abram
6	6	2	Christilaw	Dennis
7	7	2	Susarla	Mohammad
8	8	2	McInerney	Denise
9	9	2	Shapira	Curtis
10	10	2	Liu	Linda
11	11	2	Booker	Adam
12	12	2	Redhat	Carmen
13	13	3	Othus	David
14	14	3	Jackson	Hunter
15	15	3	Davis	Bradley
16	16	3	Wadhwa	Sanjay
17	17	3	Snezana	Sahter
18	18	3	Umit	Yalcinalp
19	19	4	Johnson	Alexa
20	20	4	Whitehat	Robby
21	21	4	Whitehat	Nathan
22	22	4	Greyhat	Sue
23	23	4	Whitehat	Mohammad
24	24	4	Blackhat	Justice
25	25	NULL	Lu	Haojie

Birthdate	Height	BossID
1991-02-20 00:00:00.000	1.63	1
NULL	NULL	1
1980-10-21 00:00:00.000	1.27	2
2001-01-02 00:00:00.000	1.37	2
1983-10-31 00:00:00.000	1.86	2
NULL	NULL	2
1989-03-01 00:00:00.000	1.58	2
1990-04-01 00:00:00.000	1.05	2
1997-12-15 00:00:00.000	1.3	3
1965-12-23 00:00:00.000	1.7	2
1990-10-12 00:00:00.000	1.89	3
1970-09-13 00:00:00.000	1.79	3
1966-04-19 00:00:00.000	1.86	4
1960-09-04 00:00:00.000	1.47	4
1971-08-14 00:00:00.000	1.43	4
1960-07-17 00:00:00.000	1.9	5
1967-06-28 00:00:00.000	1.37	5
1968-05-25 00:00:00.000	1.09	5
1969-04-21 00:00:00.000	1.7	6
1972-03-26 00:00:00.000	1.43	6
1999-02-28 00:00:00.000	1.82	6
1998-01-04 00:00:00.000	1.65	7
1997-04-04 00:00:00.000	1.73	7
1995-01-31 00:00:00.000	1.75	7
2018-06-02 00:00:00.000	NULL	NULL

	EmpSurname	EmpName	EmpBirthdate
1	Ariez	Hart	1991-02-20 00:00:00.000
2	Jason	Chaney	NULL
3	Nia	Anderson	1980-10-21 00:00:00.000
4	Holly	Wright	2001-01-02 00:00:00.000
5	Abram	Goldberg	1983-10-31 00:00:00.000
6	Dennis	Christilaw	NULL
7	Mohammad	Susarla	1989-03-01 00:00:00.000
8	Denise	McInerney	1990-04-01 00:00:00.000
9	Curtis	Shapira	1997-12-15 00:00:00.000
10	Linda	Liu	1965-12-23 00:00:00.000
11	Adam	Booker	1990-10-12 00:00:00.000
12	Carmen	Redhat	1970-09-13 00:00:00.000
13	David	Othus	1966-04-19 00:00:00.000
14	Hunter	Jackson	1960-09-04 00:00:00.000
15	Bradley	Davis	1971-08-14 00:00:00.000
16	Sanjay	Wadhwa	1960-07-17 00:00:00.000
17	Sahter	Snezana	1967-06-28 00:00:00.000
18	Yalcinalp	Umit	1968-05-25 00:00:00.000
19	Alexa	Johnson	1969-04-21 00:00:00.000
20	Robby	Whitehat	1972-03-26 00:00:00.000
21	Nathan	Whitehat	1999-02-28 00:00:00.000
22	Sue	Greyhat	1998-01-04 00:00:00.000
23	Mohammad	Whitehat	1997-04-04 00:00:00.000
24	Justice	Blackhat	1995-01-31 00:00:00.000
25	Haojie	Lu	2018-06-02 00:00:00.000

```
1  DROP VIEW vEmployees;
2
3  ****
4  /* Learn with video tutorials. www.YouTube.com      */
5  /* Modules 16 - 18                                     */
6  /* C182: Introduction to IT                          */
7  /* Instructor: Ken Pinaire, D.Sc.                    */
8  /* Course Mentor, Information Technology            */
9  /* ken.pinaire@wgu.edu                                */
10 /* 1-877-435-7948 ext. 6220                         */
11 ****
12 /* Ariez Othus/Hart                                 */
13 /* 000951812                                       */
14 /* Bachelor of Science - Data Management/Analytics */
15 /* Program Mentor: Angela Anderson                 */
16 /* (425) 275-8017 PST                               */
17 /* aothus2@wgu.edu                                  */
18 ****
```