

Christian Castillo  
Hospital Database EXCEPT, INTERSECT, UNION OPERATORS  
ISM 4212

```
SELECT UPPER(CONCAT(firstName, ' ', lastName)) AS patient_name, phone
FROM Patient
```

```
SELECT LOWER(CONCAT(firstName, ' ', lastName)) AS patient_name, phone
FROM Patient
```

100 %

Results Messages

	patient_name	phone
1	LUCAS DELEON	+1101617992
2	HAMMETT WORKMAN	+1111724448
3	OCTAVIA COPELAND	+1124709289
4	REBECCA ALEXANDER	+1125120489
5	GLENNA LYNCH	+1134533781
6	JAMES DONALD	+1136854369
7	BRYAR WILEY	+1146018121
8	KALIA BISHOP	+1175076764
9	JAMESON FOSTER	+1182917887
10	MURPHY BURRIS	+1187889943
11	SALVADOR LEWIS	+1192585579
12	WHOOPI TAYLOR	+1207031288
13	MICHAEL JOHNSON	+1207577278
14	DUSTIN BURKS	+1211970509
15	FORREST COLE	+1213540449
16	CAMERON CAMPOS	+1221224873
17	BRENNA JUAREZ	+1225279482
18	COOPER DICKERSON	+1230226531
19	DALTON GRIFFIN	+1237946782
20	RISA ONEIL	+1238454140
21	JAEL FRANKS	+1251932408
22	DENTON VALENTINE	+1254641493
23	LUCIAN DORSEY	+1264109304
24	SAMANTHA SMITH	+1265646257
25	CARLOS TODD	+1265798757
26	VANCE WARREN	+1267082834
27	CHANDLER MATHEWS	+1271637896
28	BEVERLY PORTER	+1276017780
29	JESSICA GARCIA	+1276477324
30	ROBIN VAUGHAN	+1277325467
31	DARREL MEADOWS	+1290963101
32	BRUCE RICHARDS	+1295285615

100 %

Results Messages

	patient_name	phone
1	lucas deleon	+1101617992
2	hammett workman	+1111724448
3	octavia copeland	+1124709289
4	rebecca alexander	+1125120489
5	glenna lynch	+1134533781
6	james donald	+1136854369
7	bryar wiley	+1146018121
8	kalia bishop	+1175076764
9	jameson foster	+1182917887
10	murphy burris	+1187889943
11	salvador lewis	+1192585579
12	whoopi taylor	+1207031288
13	michael johnson	+1207577278
14	dustin burks	+1211970509
15	forrest cole	+1213540449
16	cameron campos	+1221224873
17	brenna juarez	+1225279482
18	cooper dickerson	+1230226531
19	dalton griffin	+1237946782
20	risa oneil	+1238454140
21	jael franks	+1251932408
22	denton valentine	+1254641493
23	lucian dorsey	+1264109304
24	samantha smith	+1265646257
25	carlos todd	+1265798757
26	vance warren	+1267082834
27	chandler mathews	+1271637896
28	beverly porter	+1276017780
29	jessica garcia	+1276477324
30	robin vaughan	+1277325467
31	darrel meadows	+1290963101
32	bruce richards	+1295285615

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```

/*Intersect Operator to show doctorIDs who have administered at
least 1 treatment*/
SELECT firstName AS doctor_first_name, lastName AS doctor_last_name
FROM Physician
WHERE doctorID in(
SELECT
    doctorID
FROM
    Physician
INTERSECT
SELECT
    doctorID
FROM
    TreatmentAdministration)
ORDER BY Physician.firstName

```

100 %

Results Messages

	doctor_first_name	doctor_last_name
1	Abel	Rollins
2	Aladdin	Blackwell
3	August	Koch
4	Aurora	Montgomery
5	Beverly	Smith
6	Branden	Butler
7	Cassius	Hawthorne
8	David	Miles
9	Davis	Ross
10	Desirae	Prince
11	Elijah	Harrington
12	Elvis	Mercer
13	Elvis	Francis
14	Gareth	Jones
15	Genevieve	Henson
16	Giacomo	Sanchez
17	Ginger	Anderson
18	Graham	Nelson
19	Harding	Delaney
20	Hasad	Hubbard
21	Hayden	Herrera
22	Hillary	Ferrell
23	Imelda	Compton
24	Irma	Stevenson
25	Isadora	Kramer
26	Isadora	Whitaker
27	Jescie	Clark
28	Karleigh	Morse
29	Karly	Carroll
30	Karly	Kinney
31	Karly	Morse
32	Keane	Bass
33	Lara	McIntosh
34	Lester	Vega
35	Louis	Chaney
36	Louis	Miles
37	Lysander	McKinney
38	Macaulay	Mason
39	Madeson	Jordan
40	Mannix	Galloway
41	Matthew	Hatfield
42	Mufutau	Jensen
43	Ophelia	Chambers
44	Peter	Zamora
45	Reagan	Snider
46	Rhiannon	Fry
47	Rhona	Kaufman
48	Risa	Cantrell
49	Seraphina	Delgado
50	Thaddeus	Hendricks
51	Vaughan	Sparks
52	Zander	Lancaster

Query... CHRISTIAN\SQLEXPRESS (15.0 ... CHRISTIAN\chris (54) Hospital 00:00:00 52 rows

```

/*Have to select Distinct because otherwise query
includes duplicate values
(ie.doctors who administered more than 1 treatment*/
SELECT DISTINCT
    P.firstName AS doctor_first_name,
    P.lastName AS doctor_last_name
FROM
    Physician P
JOIN
    TreatmentAdministration TA ON P.doctorID=TA.doctorID

```

100 %

Results Messages

	doctor_first_name	doctor_last_name
1	Abel	Rollins
2	Aladdin	Blackwell
3	August	Koch
4	Aurora	Montgomery
5	Beverly	Smith
6	Branden	Butler
7	Cassius	Hawthorne
8	David	Miles
9	Davis	Ross
10	Desirae	Prince
11	Elijah	Harrington
12	Elvis	Francis
13	Elvis	Mercer
14	Gareth	Jones
15	Genevieve	Henson
16	Giacomo	Sanchez
17	Ginger	Anderson
18	Graham	Nelson
19	Harding	Delaney
20	Hasad	Hubbard
21	Hayden	Herrera
22	Hillary	Ferrell
23	Imelda	Compton
24	Irma	Stevenson
25	Isadora	Kramer
26	Isadora	Whitaker
27	Jescie	Clark
28	Karleigh	Morse
29	Karly	Carroll
30	Karly	Kinney
31	Karly	Morse
32	Keane	Bass
33	Lara	McIntosh
34	Lester	Vega
35	Louis	Chaney
36	Louis	Miles
37	Lysander	McKinney
38	Macaulay	Mason
39	Madeson	Jordan
40	Mannix	Galloway
41	Matthew	Hatfield
42	Mufutau	Jensen
43	Ophelia	Chambers
44	Peter	Zamora
45	Reagan	Snider
46	Rhiannon	Fry
47	Rhona	Kaufman
48	Risa	Cantrell
49	Seraphina	Delgado
50	Thaddeus	Hendricks
51	Vaughan	Sparks
52	Zander	Lancaster

Query... CHRISTIAN\SQLEXPRESS (15.0 ... CHRISTIAN\chris (58) Hospital 00:00:00 52 rows

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--EXCEPT Operator to show which nurses have not been assigned

```
SELECT
    CONCAT(firstName, ' ',lastName) AS unassigned_nurses
FROM
    Nurse
WHERE
    nurseID in(
        SELECT nurseID
        FROM Nurse
        EXCEPT
        SELECT nurseID
        FROM NurseAssignment)
```

100 %

Results Messages

	unassigned_nurses
1	Grace Clark
2	Henry Adams
3	Sophie Baker
4	Jack Campbell
5	Chloe Cooper
6	Lily Fisher
7	Frances George
8	Jolie Glass
9	Yael Bonner
10	Ezra Bishop
11	Marny Cross
12	Chancellor Patton
13	Amal Perkins
14	Jemima Hall
15	Pandora Nixon
16	Chandler Spears
17	Natalie Chandler
18	Calvin Welch
19	Ryan Peters
20	Ivan O'Brien
21	Kameko Mcmillan
22	Nicole Rivas
23	Wanda Henson
24	Ginger Garner
25	Austin Young
26	Carter Chase
27	Quemby Vaughan
28	Otto Mendoza
29	Ferdinand Riley
30	Leila Booker
31	Arden Herman
32	Regan Hurley
33	Burke Patton
34	Matthew Robles
35	Xenos Meadows
36	Ivan Humphrey
37	Jocelyn Lawson
38	Kennan Andrews
39	Moana Justice
40	Zelenia Hunter
41	Jaden Frank
42	Warren Rivera
43	Kuame Meadows
44	Fallon Jefferson
45	Amela Ford
46	Kylan Robbins
47	Lillian Conley
48	Daquan Doyle
49	Silas Fry
50	Sigourney Faulkner
51	Keely Ford
52	Maxwell Maldonado
53	Ray Espinoza
54	Asher Hays
55	Lyle Nixon
56	Jemima Austin

Que... CHRISTIAN\SQLEXPRESS (15.0 ... CHRISTIAN\chris (54) Hospital 00:00:00 68 rows

--Verifying EXCEPT Operator with a LEFT JOIN

```
SELECT
    N.nurseID
FROM
    Nurse N
LEFT JOIN
    NurseAssignment NA ON NA.nurseID = N.nurseID
WHERE
    NA.nurseID IS NULL;
```

100 %

Results Messages

	nurseID
1	11
2	12
3	13
4	14
5	16
6	18
7	23
8	27
9	30
10	31
11	35
12	36
13	37
14	38
15	39
16	41
17	43
18	44
19	45
20	46
21	48
22	49
23	50
24	52
25	53
26	54
27	58
28	63
29	64
30	65
31	67
32	68
33	69
34	71
35	72
36	73
37	74
38	75
39	76
40	80
41	81
42	82
43	83
44	85
45	86
46	90
47	93
48	95
49	97
50	98
51	99
52	102
53	103
54	104
55	106
56	107
57	108
58	109
59	110

Q... CHRISTIAN\SQLEXPRESS (15.0 ... CHRISTIAN\chris (58) Hospital 00:00:00 68 rows

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```

/*UNION OPERATOR; THIS IS AN EXTENSION OF THE JOINS PATIENT BILL ASSIGNMENT ADDING ANOTHER QUERY USING THE UNION OPERATOR TO DISPLAY SUBTOTALS
First Query selects a patient's Item Charges, the item's name(s), quantities, and date incurred*/
SELECT
    'Item' AS charge_type,
    P.patientNo,
    CONCAT(P.firstName, ' ', P.lastName) AS patient_full_name,
    IC.date,
    I.name AS [name],
    IC.quantity AS [quantity],
    I.charge AS [charge]
FROM
    ItemCharge IC
JOIN
    Item I ON IC.itemNo = I.itemNo
JOIN
    Patient P ON IC.patientNo = P.patientNo
WHERE
    P.patientNo = 1
GROUP BY
    P.patientNo, CONCAT(P.firstName, ' ', P.lastName), IC.date, I.name, IC.quantity, I.charge

UNION -- Union on Second Query that selects a patient's Treatment Charges
SELECT
    'Treatment' AS charge_type,
    P.patientNo,
    CONCAT(P.firstName, ' ', P.lastName),
    TA.dateTime AS date,
    T.name AS [name],
    COUNT(*) AS [quantity], -- counts each treatment as 1
    T.charge AS [charge]
FROM
    TreatmentAdministration TA
JOIN
    Treatment T ON TA.treatmentNo = T.treatmentNo
JOIN
    Patient P ON TA.patientNo = P.patientNo
WHERE
    P.patientNo = 1
GROUP BY
    P.patientNo, CONCAT(P.firstName, ' ', P.lastName), TA.dateTime, T.name, T.charge

UNION -- Union on Third Query that Takes the sum of the charges, and the sum of the quantities
SELECT
    'Total' AS charge_type,
    P.patientNo,
    CONCAT(P.firstName, ' ', P.lastName),
    GETDATE() AS [date],
    'Amount Owed' AS [name],
    (SELECT SUM(IC.quantity) FROM ItemCharge IC WHERE IC.patientNo = P.patientNo) +
    (SELECT COUNT(*) FROM TreatmentAdministration TA WHERE TA.patientNo = P.patientNo) AS [quantity],
    --have to use COUNT for treatment administration because there's no quantity column in the TA table
    SUM(I.charge) + SUM(T.charge) AS charge
FROM
    Patient P
JOIN
    ItemCharge IC ON P.patientNo = IC.patientNo
JOIN
    Item I ON IC.itemNo = I.itemNo
JOIN
    TreatmentAdministration TA ON P.patientNo = TA.patientNo
JOIN
    Treatment T ON TA.treatmentNo = T.treatmentNo
WHERE
    P.patientNo = 1
GROUP BY
    CONCAT(P.firstName, ' ', P.lastName), P.patientNo
ORDER BY
    charge ASC
    
```

charge_type	patientNo	patient_full_name	date	name	quantity	charge
Item	1	James Donald	2024-02-01 00:00:00.000	Strong Bandage	2	5.50
Treatment	1	James Donald	2024-02-01 08:15:30.000	X-ray	1	200.00
Treatment	1	James Donald	2024-02-19 08:00:00.000	Splinting	1	250.00
Total	1	James Donald	2024-03-02 19:02:35.857	Amount Owed	4	461.00

```
--Passes Logic Check
SELECT *
FROM ItemCharge
WHERE patientNo=1

SELECT *
FROM TreatmentAdministration
WHERE patientNo=1
```

100 %

Results Messages

	chargeNo	date	quantity	patientNo	itemNo
1	4	2024-02-01	2	1	1

	patientNo	doctorID	treatmentNo	dateTime	results
1	1	3	5	2024-02-19 08:00:00.000	Stable
2	1	5	1	2024-02-01 08:15:30.000	Normal