

```
CREATE TABLE Client (  
    id_c double PRIMARY KEY,  
    nume VARCHAR (100) NOT NULL,  
    adresa VARCHAR (255) NOT NULL  
);
```

```
CREATE TABLE Factura (  
    id_f double PRIMARY KEY,  
    data datetime NOT NULL,  
    nr_slideuri double NOT NULL,  
    cost_slide double NOT NULL,  
    nr_zile double NOT NULL,  
    total double NOT NULL,  
    id_c double NOT NULL,  
    CONSTRAINT fkey_factura_client FOREIGN KEY (id_c) REFERENCES Client(id_c)  
);
```

```
CREATE TABLE Localitate (  
    id_l double PRIMARY KEY,  
    denumire VARCHAR (100) NOT NULL  
);
```

```
CREATE TABLE Difuzare (  
    id_f double NOT NULL,  
    id_l double NOT NULL,  
    datai datetime NOT NULL,  
    datas datetime NOT NULL,  
    CONSTRAINT pkey_difuzare PRIMARY KEY (id_f, id_l),  
    CONSTRAINT fkey_difuzare_factura FOREIGN KEY (id_f) REFERENCES Factura(id_f),  
    CONSTRAINT fkey_difuzare_localitate FOREIGN KEY (id_l) REFERENCES Localitate(id_l)  
);
```

```
ALTER TABLE Factura
```

```
ADD tva double;
```

```
ALTER TABLE Difuzare
```

```
ADD CONSTRAINT chk_datas_valid CHECK (datas >= datai);
```

```
ALTER TABLE Client
```

```
ADD CONSTRAINT chk_adresa
```

```
CHECK (
```

```
    (nume LIKE '%S.R.L.%' AND adresa LIKE '%sediu social%') OR
```

```
    (nume LIKE '%S.A.%' AND adresa LIKE '%sediu social%') OR
```

```
    (nume NOT LIKE '%S.R.L.%' AND nume NOT LIKE '%S.A.%')
```

```
);
```

```
INSERT INTO Client (id_c, nume, adresa)
```

```
VALUES (1, 'Georgescu Mircea', 'Strada Primaverii, Numar 101');
```

```
INSERT INTO Client (id_c, nume, adresa)
```

```
VALUES (2, 'Popescu Ana S.R.L', 'Bulevardul Independentei, Numar 45, sediu social');
```

```
INSERT INTO Client (id_c, nume, adresa)
```

```
VALUES (3, 'Ionescu Mihai', 'Strada Libertatii, Numar 88');
```

```
INSERT INTO Client (id_c, nume, adresa)
```

```
VALUES (4, 'Dumitrescu Maria', 'Aleea Rozelor, Numar 19');
```

```
INSERT INTO Client (id_c, nume, adresa)
```

```
VALUES (5, 'Vasilescu Andrei S.A.', 'Calea Victoriei, Numar 120, sediu social');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (6, 'Popa Gabriela', 'Strada Mihai Eminescu, Numar 34');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (7, 'Iliescu Radu P.F.A.', 'Bulevardul Unirii, Numar 78');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (8, 'Constantinescu Elena', 'Strada Lalelelor, Numar 56');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (9, 'Barbu Ioan', 'Strada Salcamilor, Numar 98');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (10, 'Marinescu Andreea S.R.L', 'Calea Bucuresti, Numar 112, sediu social');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (11, 'Rusu Adrian', 'Strada Universitatii, Numar 73');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (12, 'Petrescu Ioana', 'Strada Viitorului, Numar 41');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (13, 'Gheorghe Mihai S.A.', 'Bulevardul Libertatii, Numar 200, sediu social');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (14, 'Stefanescu Claudia', 'Aleea Nufarului, Numar 14');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (15, 'Enache Daniel', 'Strada Castanilor, Numar 5');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (16, 'Voicu Bogdan S.R.L', 'Calea Rahovei, Numar 83, sediu social');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (17, 'Popescu Andreea', 'Strada Campului, Numar 7');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (18, 'Tudor Florin P.F.A.', 'Bulevardul Carol, Numar 101');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (19, 'Neagu Maria', 'Strada Foisorului, Numar 61');
```

```
INSERT INTO Client (id_c, nume, adresa)
VALUES (20, 'Vasile Alin', 'Strada Parcului, Numar 25');
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (1, DATE '2024-03-25', 3, 5, 7, 3 * 5 * 7, 2);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (2, DATE '2024-04-05', 4, 10, 8, 4 * 10 * 8, 3);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (3, DATE '2024-07-01', 6, 9, 12, 6 * 9 * 12, 4);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (4, DATE '2024-06-15', 5, 11, 10, 5 * 11 * 10, 1);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (5, DATE '2024-08-05', 8, 7, 9, 8 * 7 * 9, 5);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (6, DATE '2024-04-20', 6, 15, 6, 6 * 15 * 6, 6);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (7, DATE '2024-05-12', 9, 8, 8, 9 * 8 * 8, 7);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (8, DATE '2024-06-18', 12, 7, 5, 12 * 7 * 5, 8);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (9, DATE '2024-04-28', 10, 12, 4, 10 * 12 * 4, 9);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (10, DATE '2024-09-15', 5, 14, 6, 5 * 14 * 6, 10);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (11, DATE '2024-04-10', 7, 13, 9, 7 * 13 * 9, 11);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (12, DATE '2024-05-15', 11, 9, 10, 11 * 9 * 10, 12);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (13, DATE '2024-03-10', 8, 11, 5, 8 * 11 * 5, 13);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (14, DATE '2024-04-25', 12, 6, 8, 12 * 6 * 8, 14);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (15, DATE '2024-05-10', 7, 7, 9, 7 * 7 * 9, 15);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (16, DATE '2024-02-22', 3, 8, 10, 3 * 8 * 10, 16);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (17, DATE '2024-06-22', 5, 14, 8, 5 * 14 * 8, 17);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (18, DATE '2024-07-12', 6, 8, 12, 6 * 8 * 12, 18);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (19, DATE '2024-06-08', 8, 10, 5, 8 * 10 * 5, 19);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (20, DATE '2024-05-05', 6, 11, 9, 6 * 11 * 9, 20);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (21, DATE '2024-06-25', 10, 12, 4, 10 * 12 * 4, 1);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (22, DATE '2024-05-30', 9, 6, 7, 9 * 6 * 7, 2);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (23, DATE '2024-03-05', 8, 9, 5, 8 * 9 * 5, 3);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (24, DATE '2024-04-12', 7, 14, 10, 7 * 14 * 10, 4);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (25, DATE '2024-06-01', 6, 13, 8, 6 * 13 * 8, 5);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (26, DATE '2024-05-20', 8, 8, 9, 8 * 8 * 9, 6);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (27, DATE '2024-04-08', 4, 7, 12, 4 * 7 * 12, 7);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (28, DATE '2024-02-15', 10, 15, 6, 10 * 15 * 6, 8);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (29, DATE '2024-06-22', 12, 11, 5, 12 * 11 * 5, 9);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (30, DATE '2024-04-02', 5, 8, 10, 5 * 8 * 10, 10);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (31, DATE '2024-05-28', 9, 7, 6, 9 * 7 * 6, 11);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (32, DATE '2024-06-15', 8, 9, 5, 8 * 9 * 5, 12);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (33, DATE '2024-07-04', 6, 10, 12, 6 * 10 * 12, 13);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (34, DATE '2024-03-22', 7, 11, 9, 7 * 11 * 9, 14);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (35, DATE '2024-05-10', 12, 12, 8, 12 * 12 * 8, 15);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (36, DATE '2024-06-05', 9, 10, 5, 9 * 10 * 5, 16);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (37, DATE '2024-04-30', 5, 14, 10, 5 * 14 * 10, 17);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (38, DATE '2024-06-20', 7, 13, 8, 7 * 13 * 8, 18);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (39, DATE '2024-02-10', 8, 8, 7, 8 * 8 * 7, 19);
```

```
INSERT INTO Factura (id_f, data, nr_slideuri, cost_slide, nr_zile, total, id_c)
VALUES (40, DATE '2024-07-01', 6, 9, 10, 6 * 9 * 10, 20);
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (1, 'Bucuresti');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (2, 'Cluj-Napoca');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (3, 'Timisoara');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (4, 'Iasi');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (5, 'Constanta');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (6, 'Brasov');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (7, 'Sibiu');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (8, 'Oradea');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (9, 'Craiova');
```



```
INSERT INTO Localitate (id_l, denumire)
VALUES (10, 'Galati');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (11, 'Baia Mare');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (12, 'Ploiesti');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (13, 'Pitesti');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (14, 'Arad');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (15, 'Suceava');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (16, 'Bacau');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (17, 'Targu Mures');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (18, 'Buzau');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (19, 'Tulcea');
```

```
INSERT INTO Localitate (id_l, denumire)
VALUES (20, 'Focsani');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (1, 1, DATE '2024-04-01', DATE '2024-04-10');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (2, 2, DATE '2024-04-05', DATE '2024-04-15');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (3, 3, DATE '2024-04-10', DATE '2024-04-20');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (4, 4, DATE '2024-04-15', DATE '2024-04-25');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (5, 5, DATE '2024-04-20', DATE '2024-04-30');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (6, 6, DATE '2024-08-01', DATE '2024-08-10');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (7, 7, DATE '2024-08-05', DATE '2024-08-15');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (8, 8, DATE '2024-08-10', DATE '2024-08-20');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (9, 9, DATE '2024-08-15', DATE '2024-08-25');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (10, 10, DATE '2024-08-20', DATE '2024-08-30');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (11, 11, DATE '2024-09-01', DATE '2024-09-10');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (12, 12, DATE '2024-09-05', DATE '2024-09-15');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (13, 13, DATE '2024-09-10', DATE '2024-09-20');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (14, 14, DATE '2024-09-15', DATE '2024-09-25');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (15, 15, DATE '2024-09-20', DATE '2024-09-30');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (16, 16, DATE '2024-10-01', DATE '2024-10-10');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (17, 17, DATE '2024-10-05', DATE '2024-10-15');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (18, 18, DATE '2024-10-10', DATE '2024-10-20');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (19, 19, DATE '2024-10-15', DATE '2024-10-25');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (20, 20, DATE '2024-10-20', DATE '2024-10-30');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (21, 1, DATE '2024-04-01', DATE '2024-04-10');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (22, 2, DATE '2024-10-20', DATE '2024-10-30');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (23, 3, DATE '2024-09-05', DATE '2024-09-15');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (24, 4, DATE '2024-08-20', DATE '2024-08-30');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (25, 5, DATE '2024-04-20', DATE '2024-04-30');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (26, 6, DATE '2024-08-05', DATE '2024-08-25');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (27, 7, DATE '2024-09-12', DATE '2024-09-22');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (28, 8, DATE '2024-04-02', DATE '2024-04-12');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (29, 9, DATE '2024-10-18', DATE '2024-10-28');
```

```
INSERT INTO Difuzare (id_f, id_l, datai, datas)
VALUES (30, 10, DATE '2024-08-15', DATE '2024-08-25');
```

Home

```
SELECT
    c.id_c,
    c.nume,
    c.adresa,
    f.id_f,
    f.data,
    f.nr_slideuri,
    f.cost_slide,
    f.nr_zile,
    f.total,
    l.id_l,
    l.denumire,
    d.datai,
    d.datas
FROM
    Client c
LEFT JOIN
    Factura f ON c.id_c = f.id_c
LEFT JOIN
    Difuzare d ON f.id_f = d.id_f
LEFT JOIN
    Localitate l ON d.id_l = l.id_l
WHERE
    c.id_c =
```

Query 1

```
SELECT * FROM Factura
WHERE total BETWEEN 500 AND 1000
ORDER BY total DESC, data ASC;
DELIMITER //
CREATE PROCEDURE GetFacturiInInterval()
BEGIN
    SELECT *
    FROM Factura
    WHERE total BETWEEN 500 AND 1000
    ORDER BY total DESC, data ASC;
END//
DELIMITER ;
```

Query 2

```
SELECT denumire FROM Localitate
WHERE LOWER(denumire) NOT LIKE '%a%'
ORDER BY denumire ASC;
```

Query 3

```
SELECT c.num AS nume_client,
l.denumire AS localitate
FROM Client c
JOIN Factura f ON c.id_c = f.id_c
JOIN Difuzare d ON f.id_f = d.id_f
JOIN Localitate l ON d.id_l = l.id_l
WHERE d.datai <= '2024-09-30'
AND d.datas >= '2024-09-01';
```

Query 4

```
SELECT DISTINCT d1.id_1 AS id_11,  
d2.id_1 AS id_12  
FROM Difuzare d1  
JOIN Difuzare d2 ON d1.datai = d2.datai  
AND d1.datas = d2.datas  
AND d1.id_1 < d2.id_1;
```

Query 5

```
SELECT c.num  
FROM Client c  
WHERE EXISTS (  
SELECT 1 FROM Factura f  
WHERE c.id_c = f.id_c  
AND f.total = (  
SELECT MIN(total)  
FROM Factura  
WHERE data BETWEEN '2024-04-01' AND '2024-06-30'));
```

Query 6

```
SELECT l.denumire  
FROM Localitate l  
WHERE EXISTS (  
SELECT 1 FROM Difuzare d  
WHERE l.id_1 = d.id_1  
AND d.datai <= '2024-08-31'  
AND d.datas >= '2024-08-01');
```

Query 7

```
SELECT d.id_l, d.datai,  
SUM(f.nr_slideuri) AS total_slideuri  
FROM Difuzare d  
JOIN Factura f ON d.id_f = f.id_f  
WHERE d.datai BETWEEN '2024-10-01' AND '2024-10-31'  
GROUP BY d.id_l, d.datai  
ORDER BY d.id_l, d.datai;
```

Query 8

```
SELECT MIN(f.total) AS valoare_minima,  
AVG(f.total) AS valoare_medie,  
MAX(f.total) AS valoare_maxima  
FROM Factura f  
WHERE f.data BETWEEN '2024-01-01' AND '2024-12-31';
```