

Fiddle

<http://sqlfiddle.com/#!9/860b9b/1>

Example Schema

```
CREATE TABLE Student(  
  id INT PRIMARY KEY AUTO_INCREMENT,  
  facultate VARCHAR(64),  
  grupa INT,  
  medie DOUBLE  
);
```

Example Data

```
INSERT INTO Student(facultate, grupa, medie) VALUES  
( 'UT-CN - Calculatoare', 34001, 7.30),  
( 'UT-CN - Calculatoare', 34001, 8.70),  
( 'UT-CN - Calculatoare', 34001, 5.00),  
( 'UT-CN - Calculatoare', 34001, 9.25),  
  
( 'UT-CN - Calculatoare', 34002, 7.30),  
( 'UT-CN - Calculatoare', 34002, 5.00),  
( 'UT-CN - Calculatoare', 34002, 7.95),  
( 'UT-CN - Calculatoare', 34002, 9.99),  
  
( 'UT-CN - Automatica', 34001, 7.30),  
( 'UT-CN - Automatica', 34001, 8.25),  
( 'UT-CN - Automatica', 34001, 7.95),  
( 'UT-CN - Automatica', 34001, 9.95);
```

Queries

```
-- Maxim global  
SELECT A.id as student, A.facultate, A.grupa, A.medie  
FROM Student AS A  
LEFT JOIN Student AS B ON  
  A.medie < B.medie  
WHERE B.id IS NULL;  
  
-- Minim global (all)  
SELECT A.id as student, A.facultate, A.grupa, A.medie  
FROM Student AS A  
LEFT JOIN Student AS B ON  
  A.medie > B.medie  
WHERE B.id IS NULL;  
  
-- Minim global (single)  
SELECT A.id as student, A.facultate, A.grupa, A.medie  
FROM Student AS A  
LEFT JOIN Student AS B ON  
  A.medie > B.medie OR  
  (A.medie = B.medie AND A.id > B.id)  
WHERE B.id IS NULL;
```

```

-- Maxim (per facultate)
SELECT A.id as student, A.facultate, A.grupa, A.medie
FROM Student AS A
LEFT JOIN Student AS B ON
    A.medie < B.medie AND
    A.facultate = B.facultate
WHERE B.id IS NULL;

-- Maxim (per grupa + facultate)
SELECT A.id as student, A.facultate, A.grupa, A.medie
FROM Student AS A
LEFT JOIN Student AS B ON
    A.medie < B.medie AND
    A.facultate = B.facultate AND
    A.grupa = B.grupa
WHERE B.id IS NULL;

```

Explanation

Let us talk about a simpler example: assuming that we only have data for the first four students and we want to get the global max – first query (do not care about the faculty or group).

Initial Data

id	media
1	7.30
2	8.70
3	5.00
4	9.25

Join

Join “process”:

A.id	A.media	B.id	B.media
1	7.30	1	7.30
1	7.30	2	8.70
1	7.30	3	5.00
1	7.30	4	9.25
2	8.70	1	7.30
2	8.70	2	8.70
2	8.70	3	5.00
2	8.70	4	9.25
3	5.00	1	7.30
3	5.00	2	8.70
3	5.00	3	5.00
3	5.00	4	9.25
4	9.25	1	7.30
4	9.25	2	8.70
4	9.25	3	5.00
4	9.25	4	9.25

Join result

A.id	A.media	B.id	B.media
1	7.30	2	8.70
1	7.30	4	9.25
2	8.70	4	9.25
3	5.00	1	7.30
3	5.00	2	8.70
3	5.00	4	9.25
4	9.25	NULL	NULL

Where

A.id	A.media	B.id	B.media
4	9.25	NULL	NULL

Projection

id	media
4	9.25