13강 답지

```
13-1
WITH request(user_id, product_id, request_date) AS (
    VALUES
    ('U001', '1', date '2016-09-01'),
    ('U001', '2', date '2016-09-20'),
    ('U002', '3', date '2016-09-30'),
    ('U003', '4', date '2016-10-01'),
    ('U004', '5', date '2016-11-01'),
    ('U005', '6', date '2016-11-15'),
    ('U006', '7', date '2016-11-20'),
    ('U007', '8', date '2016-12-01'),
    ('U008', '9', date '2016-12-10'),
    ('U009', '10', date '2016-12-20')
),
estimates(user_id, product_id, estimate_date) AS (
    VALUES
  ('U001', '1', date '2016-09-02'),
    ('U001', '2', date '2016-09-21'),
    ('U002', '3', date '2016-10-01'),
    ('U003', '4', date '2016-10-01'),
    ('U004', '5', date '2016-11-08'),
    ('U005', '6', date '2016-11-17'),
    ('U006', '7', date '2016-11-22'),
    ('U007', '8', date '2016-12-08'),
    ('U008', '9', date '2016-12-14'),
    ('U009', '10', date '2016-12-22')
),
orders(user_id, product_id, order_date) AS (
    VALUES
  ('U001', '1', date '2016-09-03'),
    ('U001', '2', date '2016-09-23'),
    ('U002', '3', date '2016-10-01'),
    ('U003', '4', date '2016-10-02'),
    ('U004', '5', date '2016-11-20'),
    ('U005', '6', date '2016-11-18'),
    ('U006', '7', date '2016-11-20'),
    ('U007', '8', date '2016-12-09'),
    ('U008', '9', date '2016-12-15'),
    ('U009', '10', date '2016-12-24')
)

select
r.user_id, r.product_id
, e.estimate_date::date - r.request_date::date as estimate_lead_time
, o.order_date::date - e.estimate_date::date as order_lead_time
, o.order_date::date - r.request_date::date as total_lead_time

from request as r left outer join estimates as e
on r.user_id = e.user_id and r.product_id = e.product_id
left outer join orders as o
on r.user_id = o.user_id and r.product_id = o.product_id



13-2
WITH request(user_id, product_id, request_date) AS (
    VALUES
    ('U001', '1', date '2016-09-01'),
    ('U001', '2', date '2016-09-20'),
    ('U002', '3', date '2016-09-30'),
    ('U003', '4', date '2016-10-01'),
    ('U004', '5', date '2016-11-01'),
    ('U005', '6', date '2016-11-15'),
    ('U006', '7', date '2016-11-20'),
    ('U007', '8', date '2016-12-01'),
    ('U008', '9', date '2016-12-10'),
    ('U009', '10', date '2016-12-20')
  ),
  estimates(user_id, product_id, estimate_date) AS (
    VALUES
    ('U001', '1', date '2016-09-02'),
    ('U001', '2', date '2016-09-21'),
    ('U002', '3', date '2016-10-01'),
    ('U003', '4', date '2016-10-01'),
    ('U004', '5', date '2016-11-08'),
    ('U005', '6', date '2016-11-17'),
    ('U006', '7', date '2016-11-22'),
    ('U007', '8', date '2016-12-08'),
```

```
  ('U008', '9', date '2016-12-14'),
  ('U009', '10', date '2016-12-22')
),
orders(user_id, product_id, order_date) AS (
  VALUES
  ('U001', '1', date '2016-09-03'),
  ('U001', '2', date '2016-09-23'),
  ('U002', '3', date '2016-10-01'),
  ('U003', '4', date '2016-10-02'),
  ('U004', '5', date '2016-11-20'),
  ('U005', '6', date '2016-11-18'),
  ('U006', '7', date '2016-11-20'),
  ('U007', '8', date '2016-12-09'),
  ('U008', '9', date '2016-12-15'),
  ('U009', '10', date '2016-12-24')
),
lead_time AS (
  SELECT
    r.user_id, r.product_id,
    e.estimate_date::date - r.request_date::date as estimate_lead_time,
    o.order_date::date - e.estimate_date::date as order_lead_time,
    o.order_date::date - r.request_date::date as total_lead_time
  FROM request AS r
  LEFT OUTER JOIN estimates AS e ON r.user_id = e.user_id AND r.product_id = e.product_id
  LEFT OUTER JOIN orders AS o ON r.user_id = o.user_id AND r.product_id = o.product_id
),
user_counts AS (
  SELECT total_lead_time, COUNT(user_id) AS users
  FROM lead_time
  GROUP BY total_lead_time
),
composition_ratio AS (
  SELECT
    total_lead_time,
    users,
    100.0 * users / SUM(users) OVER () AS composition_ratio,
    100.0 * SUM(users) OVER (ORDER BY users DESC ROWS BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW) / SUM(users) OVER () AS cumulative
  FROM user_counts
)
SELECT *
FROM composition_ratio
ORDER BY users DESC;
```