

| EID | OID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|-----|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |

```

select
  sum(salary),
  round(avg(salary)),
  min(salary),
  max(salary),
  count(*),
  count(bonus)
from employee;
    
```

| * | SUM(SALARY) | ROUND(AVG(SALARY)) | MIN(SALARY) | MAX(SALARY) | COUNT(*) | COUNT(BONUS) |
|---|-------------|--------------------|-------------|-------------|----------|--------------|
| 1 | 1212000 | 67333 | 31000 | 180000 | 18 | 5 |

| EID | OID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|-----|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |

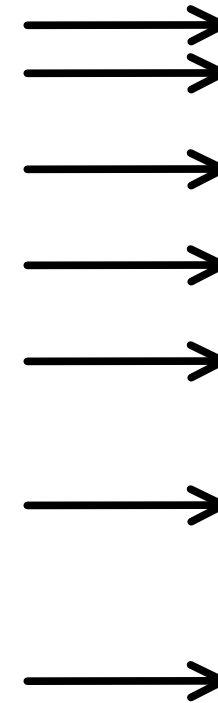
```

select oid,
  sum(salary),
  round(avg(salary)),
  min(salary),
  max(salary),
  count(*),
  count(bonus)
from employee
group by oid
order by oid;

```

| * | OID | SUM(SALARY) | ROUND(AVG(SALARY)) | MIN(SALARY) | MAX(SALARY) | COUNT(*) | COUNT(BONUS) |
|---|-----|-------------|--------------------|-------------|-------------|----------|--------------|
| 1 | 11 | 180000 | 180000 | 180000 | 180000 | 1 | 0 |
| 2 | 12 | 120000 | 120000 | 120000 | 120000 | 1 | 0 |
| 3 | 13 | 173000 | 57667 | 38000 | 93000 | 3 | 1 |
| 4 | 14 | 169000 | 56333 | 39000 | 89000 | 3 | 1 |
| 5 | 15 | 142000 | 142000 | 142000 | 142000 | 1 | 0 |
| 6 | 16 | 266000 | 66500 | 42000 | 91000 | 4 | 1 |
| 7 | 17 | 162000 | 32400 | 31000 | 34000 | 5 | 2 |

| EID | OUID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|------|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |



| | |
|-----|-----|
| sum | avg |
| sum | avg |
| sum | avg |
| sum | avg |
| sum | avg |
| sum | avg |
| sum | avg |
| sum | avg |
| sum | avg |
| sum | avg |

grouping
criterion

1. partitioning of detail data into different groups according to grouping criterion
2. application of aggregation function on each individual group
3. one record per group in the output

select oid,
sum(salary)
from employee
group by oid
order by oid;

all output columns on same aggregation level

| | |
|--------|--|
| oid | part of group by |
| salary | aggregation function applied on column |

| * | OID | SUM(SALARY) |
|---|-----|-------------|
| 1 | 11 | 180000 |
| 2 | 12 | 120000 |
| 3 | 13 | 173000 |
| 4 | 14 | 169000 |
| 5 | 15 | 142000 |
| 6 | 16 | 266000 |
| 7 | 17 | 162000 |

select oid, lastname,
sum(salary)
from employee
group by oid
order by oid;

output columns on different aggregation levels

| | |
|----------|--------------------------------|
| oid | aggregated |
| lastname | on detail level (not possible) |
| salary | aggregated |

error message:
not a GROUP BY expression

| EID | OUID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|------|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |

```

select ou.name,
        sum(salary),
        count(*)
from employee e
        join orgunit ou on ou.ouid=e.ouid
group by ou.name
order by ou.name;
    
```

| OUID | HEAD | SUPERUNIT | NAME |
|------|------|-----------|----------------|
| 11 | 101 | (null) | Company |
| 12 | 102 | 11 | Administration |
| 13 | 103 | 12 | HR |
| 14 | 106 | 12 | Accounting |
| 15 | 109 | 11 | Production |
| 16 | 110 | 15 | Plant |
| 17 | 109 | 15 | Warehouse |

| * | NAME | SUM(SALARY) | COUNT(*) |
|---|----------------|-------------|----------|
| 1 | Accounting | 169000 | 3 |
| 2 | Administration | 120000 | 1 |
| 3 | Company | 180000 | 1 |
| 4 | HR | 173000 | 3 |
| 5 | Plant | 266000 | 4 |
| 6 | Production | 142000 | 1 |
| 7 | Warehouse | 162000 | 5 |

| EID | OID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|-----|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |

select

extract(year from hiredate) as hireyear,
sum(salary),
count(*)

from employee

group by extract(year from hiredate)

order by extract(year from hiredate);

| * | HIREYEAR | SUM(SALARY) | COUNT(*) |
|----|----------|-------------|----------|
| 1 | 2000 | 180000 | 1 |
| 2 | 2001 | 91000 | 1 |
| 3 | 2002 | 182000 | 2 |
| 4 | 2005 | 210000 | 2 |
| 5 | 2006 | 225000 | 3 |
| 6 | 2009 | 34000 | 1 |
| 7 | 2010 | 42000 | 1 |
| 8 | 2011 | 31000 | 1 |
| 9 | 2012 | 43000 | 1 |
| 10 | 2013 | 64000 | 2 |
| 11 | 2014 | 72000 | 2 |
| 12 | 2018 | 38000 | 1 |

| EID | OID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|-----|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |

```

select
  case
    when hiredate >= to_date('2010/01/01', 'YYYY/MM/DD')
      then 'From2010'
    when hiredate >= to_date('2000/01/01', 'YYYY/MM/DD')
      then 'Until2009'
    end as entry_year_range,
  sum(salary),
  count(*)
from employee
group by
  case
    when hiredate >= to_date('2010/01/01', 'YYYY/MM/DD')
      then 'From2010'
    when hiredate >= to_date('2000/01/01', 'YYYY/MM/DD')
      then 'Until2009'
    end;

```

| * | ENTRY_YEAR_RANGE | SUM(SALARY) | COUNT(*) |
|---|------------------|-------------|----------|
| 1 | From2010 | 290000 | 8 |
| 2 | Until2009 | 922000 | 10 |

| EID | OID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|-----|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |

```

select oid,
case
  when hiredate >= to_date('2010/01/01', 'YYYY/MM/DD')
  then 'From2010'
  when hiredate >= to_date('2000/01/01', 'YYYY/MM/DD')
  then 'Until2009'
end as entry_year_range,
sum(salary),
count(*)
from employee
group by
oid,
case
  when hiredate >= to_date('2010/01/01', 'YYYY/MM/DD')
  then 'From2010'
  when hiredate >= to_date('2000/01/01', 'YYYY/MM/DD')
  then 'Until2009'
end
order by oid;

```

| * | OID | ENTRY_YEAR_RANGE | SUM(SALARY) | COUNT(*) |
|----|-----|------------------|-------------|----------|
| 1 | 11 | Until2009 | 180000 | 1 |
| 2 | 12 | Until2009 | 120000 | 1 |
| 3 | 13 | From2010 | 38000 | 1 |
| 4 | 13 | Until2009 | 135000 | 2 |
| 5 | 14 | From2010 | 39000 | 1 |
| 6 | 14 | Until2009 | 130000 | 2 |
| 7 | 15 | Until2009 | 142000 | 1 |
| 8 | 16 | From2010 | 85000 | 2 |
| 9 | 16 | Until2009 | 181000 | 2 |
| 10 | 17 | From2010 | 128000 | 4 |
| 11 | 17 | Until2009 | 34000 | 1 |

```

select
  case
    when hiredate >= to_date('2010/01/01', 'YYYY/MM/DD')
      then 'From2010'
    when hiredate >= to_date('2000/01/01', 'YYYY/MM/DD')
      then 'Until2009'
  end as entry_year_range,
  sum(salary),
  count(*)
from employee
group by
  case
    when hiredate >= to_date('2010/01/01', 'YYYY/MM/DD')
      then 'From2010'
    when hiredate >= to_date('2000/01/01', 'YYYY/MM/DD')
      then 'Until2009'
  end;
    
```

| * | ENTRY_YEAR_RANGE | SUM(SALARY) | COUNT(*) |
|---|------------------|-------------|----------|
| 1 | From2010 | 290000 | 8 |
| 2 | Until2009 | 922000 | 10 |



```

select oid,
  case
    when hiredate >= to_date('2010/01/01', 'YYYY/MM/DD')
      then 'From2010'
    when hiredate >= to_date('2000/01/01', 'YYYY/MM/DD')
      then 'Until2009'
  end as entry_year_range,
  sum(salary),
  count(*)
from employee
group by
  oid,
  case
    when hiredate >= to_date('2010/01/01', 'YYYY/MM/DD')
      then 'From2010'
    when hiredate >= to_date('2000/01/01', 'YYYY/MM/DD')
      then 'Until2009'
  end
order by oid;
    
```

| * | OID | ENTRY_YEAR_RANGE | SUM(SALARY) | COUNT(*) |
|----|-----|------------------|-------------|----------|
| 1 | 11 | Until2009 | 180000 | 1 |
| 2 | 12 | Until2009 | 120000 | 1 |
| 3 | 13 | From2010 | 38000 | 1 |
| 4 | 13 | Until2009 | 135000 | 2 |
| 5 | 14 | From2010 | 39000 | 1 |
| 6 | 14 | Until2009 | 130000 | 2 |
| 7 | 15 | Until2009 | 142000 | 1 |
| 8 | 16 | From2010 | 85000 | 2 |
| 9 | 16 | Until2009 | 181000 | 2 |
| 10 | 17 | From2010 | 128000 | 4 |
| 11 | 17 | Until2009 | 34000 | 1 |

adding a column in **group by** leads to new groups, due to value combinations

Grouping with dependent Columns

Dienstag, 1. Juni 2021 14:58

| EID | OUID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|------|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |

| OUID | HEAD | SUPERUNIT | NAME |
|------|------|-----------|-------------------|
| 11 | 101 | (null) | Company |
| 12 | 102 | | 11 Administration |
| 13 | 103 | | 12 HR |
| 14 | 106 | | 12 Accounting |
| 15 | 109 | | 11 Production |
| 16 | 110 | | 15 Plant |
| 17 | 109 | | 15 Warehouse |

not possible, name is on detail level

error message: no GROUP BY expression

```
select ou.oid, ou.name, sum(salary)
from employee e
      join orgunit ou on ou.oid=e.oid
group by ou.oid
order by ou.oid;
```

add **ou.name** to **group by**
doesn't lead to new combinations because ou.name is dependent on ou.oid

```
select ou.oid, ou.name, sum(salary)
from employee e
      join orgunit ou on ou.oid=e.oid
group by ou.oid, ou.name
order by ou.oid;
```

| * | OUID | NAME | SUM(SALARY) |
|---|------|----------------|-------------|
| 1 | 11 | Company | 180000 |
| 2 | 12 | Administration | 120000 |
| 3 | 13 | HR | 173000 |
| 4 | 14 | Accounting | 169000 |
| 5 | 15 | Production | 142000 |
| 6 | 16 | Plant | 266000 |
| 7 | 17 | Warehouse | 162000 |

```
select oid,  
       sum(salary),  
       count(*)  
from employee  
group by oid  
order by oid;
```

| * | OID | SUM(SALARY) | COUNT(*) |
|---|-----|-------------|----------|
| 1 | 11 | 180000 | 1 |
| 2 | 12 | 120000 | 1 |
| 3 | 13 | 173000 | 3 |
| 4 | 14 | 169000 | 3 |
| 5 | 15 | 142000 | 1 |
| 6 | 16 | 266000 | 4 |
| 7 | 17 | 162000 | 5 |



```
select oid,  
       sum(salary),  
       count(*)  
from employee  
group by oid  
having count(*) > 1  
order by oid;
```

| * | OID | SUM(SALARY) | COUNT(*) |
|---|-----|-------------|----------|
| 1 | 13 | 173000 | 3 |
| 2 | 14 | 169000 | 3 |
| 3 | 16 | 266000 | 4 |
| 4 | 17 | 162000 | 5 |

| EID | OID | LASTNAME | HIREDATE | SALARY | BONUS |
|-----|-----|----------|---------------------|--------|--------|
| 101 | 11 | Patil | 2000-05-01 00:00:00 | 180000 | (null) |
| 102 | 12 | Durmaz | 2005-07-01 00:00:00 | 120000 | (null) |
| 103 | 13 | Blaschke | 2002-11-01 00:00:00 | 93000 | (null) |
| 104 | 13 | Stone | 2006-06-01 00:00:00 | 42000 | (null) |
| 105 | 13 | Dalal | 2018-02-02 00:00:00 | 38000 | 1000 |
| 106 | 14 | Li | 2002-12-01 00:00:00 | 89000 | (null) |
| 107 | 14 | Nguyen | 2006-07-01 00:00:00 | 41000 | (null) |
| 108 | 14 | Sanchez | 2014-04-01 00:00:00 | 39000 | 1500 |
| 109 | 15 | Umarani | 2006-07-01 00:00:00 | 142000 | (null) |
| 110 | 16 | Ortega | 2005-09-02 00:00:00 | 90000 | (null) |
| 111 | 16 | Doshi | 2010-01-02 00:00:00 | 42000 | (null) |
| 112 | 16 | Singh | 2012-03-01 00:00:00 | 43000 | 2100 |
| 113 | 16 | Jadhav | 2001-08-01 00:00:00 | 91000 | (null) |
| 114 | 17 | Popov | 2009-03-02 00:00:00 | 34000 | (null) |
| 115 | 17 | Kumar | 2013-05-01 00:00:00 | 32000 | (null) |
| 116 | 17 | Krause | 2011-08-01 00:00:00 | 31000 | (null) |
| 117 | 17 | Oezdem | 2014-08-01 00:00:00 | 33000 | 1900 |
| 118 | 17 | Okeke | 2013-11-01 00:00:00 | 32000 | 1900 |

```

select oid,
  sum(salary),
  count(*)
from employee
group by oid
having count(*) > 1
order by oid;
    
```

| * | OID | SUM(SALARY) | COUNT(*) |
|---|-----|-------------|----------|
| 1 | 13 | 173000 | 3 |
| 2 | 14 | 169000 | 3 |
| 3 | 16 | 266000 | 4 |
| 4 | 17 | 162000 | 5 |

```

select oid,
  sum(salary),
  count(*)
from employee
where bonus is null
group by oid
having count(*) > 1
order by oid;
    
```

| * | OID | SUM(SALARY) | COUNT(*) |
|---|-----|-------------|----------|
| 1 | 13 | 135000 | 2 |
| 2 | 14 | 130000 | 2 |
| 3 | 16 | 223000 | 3 |
| 4 | 17 | 97000 | 3 |

Structure of a Query with Grouping

Dienstag, 3. Dezember 2019 09:55

```
select  
from  
where  
group by  
having  
order by
```