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Module 06
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1.

```
SQL> SELECT job_id, min_salary, max_salary,
  2     (SELECT AVG(min_salary) FROM jobs) AS avg_min_salary,
  3     (SELECT AVG(max_salary) FROM jobs) AS avg_max_salary
  4  FROM jobs
  5  ORDER BY job_id;

JOB_ID     MIN_SALARY MAX_SALARY AVG_MIN_SALARY AVG_MAX_SALARY
---------- ---------- ---------- -------------- --------------
AC_ACCOUNT       4200       9000     6568.42105     13210.5263
AC_MGR           8200      16000     6568.42105     13210.5263
AD_ASST          3000       6000     6568.42105     13210.5263
AD_PRES         20000      40000     6568.42105     13210.5263
AD_VP           15000      30000     6568.42105     13210.5263
FI_ACCOUNT       4200       9000     6568.42105     13210.5263
FI_MGR           8200      16000     6568.42105     13210.5263
HR_REP           4000       9000     6568.42105     13210.5263
IT_PROG          4000      10000     6568.42105     13210.5263
MK_MAN           9000      15000     6568.42105     13210.5263
MK_REP           4000       9000     6568.42105     13210.5263

JOB_ID     MIN_SALARY MAX_SALARY AVG_MIN_SALARY AVG_MAX_SALARY
---------- ---------- ---------- -------------- --------------
PR_REP           4500      10500     6568.42105     13210.5263
PU_CLERK         2500       5500     6568.42105     13210.5263
PU_MAN           8000      15000     6568.42105     13210.5263
SA_MAN          10000      20000     6568.42105     13210.5263
SA_REP           6000      12000     6568.42105     13210.5263
SH_CLERK         2500       5500     6568.42105     13210.5263
ST_CLERK         2000       5000     6568.42105     13210.5263
ST_MAN           5500       8500     6568.42105     13210.5263

19 rows selected.
```

2.

```
SQL> SELECT e.last_name, e.job_id, j.min_sal, j.max_sal
  2  FROM employees e INNER JOIN
  3  (SELECT job_id, min_salary AS min_sal, max_salary AS max_sal FROM jobs) j
  4  ON e.job_id = j.job_id
  5  WHERE e.department_id = 20
  6  ORDER BY e.last_name;

LAST_NAME                 JOB_ID        MIN_SAL    MAX_SAL
------------------------- ---------- ---------- ----------
Fay                       MK_REP           4000       9000
Hartstein                 MK_MAN           9000      15000
```

3.

Part 1

```
SQL> SELECT job_id, min_salary, max_salary
  2  FROM jobs
  3  WHERE max_salary >
  4     (SELECT MAX(min_salary) FROM jobs)
  5  ORDER BY min_salary DESC;

JOB_ID     MIN_SALARY MAX_SALARY
---------- ---------- ----------
AD_PRES         20000      40000
AD_VP           15000      30000
```

Part 2

```
SQL> SELECT job_id, min_salary, max_salary
  2  FROM jobs
  3  WHERE max_salary IN
  4     (SELECT min_salary FROM jobs)
  5  ORDER BY min_salary DESC;

JOB_ID     MIN_SALARY MAX_SALARY
---------- ---------- ----------
SA_MAN          10000      20000
MK_MAN           9000      15000
PU_MAN           8000      15000
AC_ACCOUNT       4200       9000
FI_ACCOUNT       4200       9000
IT_PROG          4000      10000
MK_REP           4000       9000
HR_REP           4000       9000
AD_ASST          3000       6000
PU_CLERK         2500       5500
SH_CLERK         2500       5500

11 rows selected.
```

4.

```
SQL> SELECT job_id, AVG(salary)
  2  FROM employees
  3  GROUP BY job_id
  4  HAVING AVG(salary) >
  5     (SELECT AVG(min_salary) FROM jobs);

JOB_ID     AVG(SALARY)
---------- -----------
AC_ACCOUNT        8300
AC_MGR           12000
AD_PRES          24000
AD_VP            17000
FI_ACCOUNT        7920
FI_MGR           12000
MK_MAN           13000
PR_REP           10000
PU_MAN           11000
SA_MAN           12200
SA_REP            8350

JOB_ID     AVG(SALARY)
---------- -----------
ST_MAN            7280

12 rows selected.
```

5.

```
SQL> SELECT job_id,
  2  CASE
  3  WHEN max_salary < '10000' THEN 'Low max salary'
  4  WHEN max_salary < '20000' THEN 'Medium max salary'
  5  WHEN max_salary >= '20000' THEN 'High max salary' END AS max_sal_cat
  6  FROM jobs;

JOB_ID     MAX_SAL_CAT
---------- ----------------
AD_PRES    High max salary
AD_VP      High max salary
AD_ASST    Low max salary
FI_MGR     Medium max salary
FI_ACCOUNT Low max salary
AC_MGR     Medium max salary
AC_ACCOUNT Low max salary
SA_MAN     High max salary
SA_REP     Medium max salary
PU_MAN     Medium max salary
PU_CLERK   Low max salary

JOB_ID     MAX_SAL_CAT
---------- ----------------
ST_MAN     Low max salary
ST_CLERK   Low max salary
SH_CLERK   Low max salary
IT_PROG    Medium max salary
MK_MAN     Medium max salary
MK_REP     Low max salary
HR_REP     Low max salary
PR_REP     Medium max salary

19 rows selected.
```

```
SQL> SELECT i.max_sal_cat, COUNT(i.job_id)
  2  FROM
  3  (
  4     SELECT job_id, CASE
  5     WHEN max_salary < '10000' THEN 'Low max salary'
  6     WHEN max_salary < '20000' THEN 'Medium max salary'
  7     WHEN max_salary >= '20000' THEN 'High max salary' END AS max_sal_cat
  8     FROM jobs
  9  ) i
 10  GROUP BY i.max_sal_cat;

MAX_SAL_CAT       COUNT(I.JOB_ID)
----------------- ---------------
Medium max salary               7
Low max salary                  9
High max salary                 3
```

6.

```
SQL> SELECT job_id, AVG(min_salary) AS avg_min_sal, AVG(max_salary) AS avg_max_sal
  2  FROM jobs
  3  GROUP BY job_id;

JOB_ID     AVG_MIN_SAL AVG_MAX_SAL
---------- ----------- -----------
AC_MGR            8200       16000
AC_ACCOUNT        4200        9000
IT_PROG           4000       10000
ST_MAN            5500        8500
AD_ASST           3000        6000
PU_MAN            8000       15000
AD_VP            15000       30000
SH_CLERK          2500        5500
FI_ACCOUNT        4200        9000
FI_MGR            8200       16000
SA_MAN           10000       20000

JOB_ID     AVG_MIN_SAL AVG_MAX_SAL
---------- ----------- -----------
PU_CLERK          2500        5500
MK_MAN            9000       15000
PR_REP            4500       10500
AD_PRES          20000       40000
SA_REP            6000       12000
MK_REP            4000        9000
ST_CLERK          2000        5000
HR_REP            4000        9000

19 rows selected.
```

```
SQL> SELECT e.last_name, e.job_id, j.avg_min_sal, j.avg_max_sal
  2  FROM employees e INNER JOIN
  3  (
  4  SELECT job_id, AVG(min_salary) AS avg_min_sal, AVG(max_salary) AS avg_max_sal
  5  FROM jobs
  6  GROUP BY job_id
  7  ) j
  8  ON e.job_id = j.job_id
  9  WHERE e.department_id IN (20, 110)
 10  ORDER BY e.salary DESC;

LAST_NAME                 JOB_ID     AVG_MIN_SAL AVG_MAX_SAL
------------------------- ---------- ----------- -----------
Hartstein                 MK_MAN            9000       15000
Higgins                   AC_MGR            8200       16000
Gietz                     AC_ACCOUNT        4200        9000
Fay                       MK_REP            4000        9000
```