**3.1 Joins and subqueries**

SQL> insert into staff\_master values(1,'sudha',2,1,('12-jan-2019'),('12-jan-1999'),'nil',5,90000,6,'wednesday');

1 row created.

SQL> insert into staff\_master values(1,'sudha',9,1,('12-jan-2019'),('12-jan-1999'),'nil',5,90000,6,'wednesday');

1 row created.

SQL> desc department\_master;

Name Null? Type

----------------------------------------- -------- ----------------------------

DEPT\_CODE NOT NULL NUMBER(2)

DEPT\_NAME VARCHAR2(50)

MANGERS\_NO NUMBER(38)

SQL> insert into department\_master values(1,'seb',7);

1 row created.

SQL> select staff\_name,s.dept\_code,dept\_name,staff\_sal from staff\_master s,department\_master d where s.dept\_code=d.dept\_code and staff\_sal>20000;

STAFF\_NAME DEPT\_CODE

**2ND SOLUTION**

SQL> alter table department\_master

2 add mgr\_code int;

Table altered.

SQL> alter table department\_master

2 add mgr\_name char;

Table altered.

SQL> desc staff\_master;

Name Null? Type

----------------------------------------- -------- ----------------------------

STAFF\_CODE NOT NULL NUMBER(8)

STAFF\_NAME NOT NULL VARCHAR2(50)

DESIGN\_CODE NUMBER

DEPT\_CODE NUMBER

HIREDATE DATE

STAFF\_DOB DATE

STAFF\_ADDRESS VARCHAR2(240)

MGR\_CODE NUMBER(8)

STAFF\_SAL NUMBER(10,2)

MONTHS\_WORKED NUMBER(38)

DAY CHAR(20)

SQL> insert into staff\_master values(1,'singh',9,1,('12-jan-2019'),('12-jan-1999'),'nil',5,90000,6,'wednesday');

1 row created.

SQL> desc department\_master;

Name Null? Type

----------------------------------------- -------- ----------------------------

DEPT\_CODE NOT NULL NUMBER(2)

DEPT\_NAME VARCHAR2(50)

MANGERS\_NO NUMBER(38)

MGR\_CODE NUMBER(38)

MGR\_NAME CHAR(1)

SQL> insert into department\_master values(1,'seb',7,5,'n');

1 row created.

SQL> select staff\_code as "staff#",staff\_name as "staff",dept\_name,s.mgr\_code as "mgr#",mgr\_name as "manager"

2 from staff\_master s,department\_master d

3 where s.mgr\_code=d.mgr\_code;

staff# staff

---------- --------------------------------------------------

DEPT\_NAME mgr# m

-------------------------------------------------- ---------- -

1 sudha

seb 5 n

1 sudha

seb 5 n

1 singh

-------------------------------------------------- ----------

DEPT\_NAME STAFF\_SAL

-------------------------------------------------- ----------

sudha 1

seb 90000

sudha 1

cse 90000

sudha 1

elec 90000

STAFF\_NAME DEPT\_CODE

-------------------------------------------------- ----------

DEPT\_NAME STAFF\_SAL

-------------------------------------------------- ----------

sudha 1

one 90000

sudha 1

seb 90000

sudha 1

cse 90000

STAFF\_NAME DEPT\_CODE

-------------------------------------------------- ----------

DEPT\_NAME STAFF\_SAL

-------------------------------------------------- ----------

sudha 1

elec 90000

sudha 1

one 90000

8 rows selected.

**3RD SOLUTION**

SQL> alter table book\_transactions

2 add book\_name char(20);

Table altered.

SQL> desc book\_transactions;

Name Null? Type

----------------------------------------- -------- ----------------------------

BOOK\_CODE NUMBER

STUDENT\_CODE NUMBER

STAFF\_CODE NUMBER

BOOK\_ISSUE\_DATE NOT NULL DATE

BOOK\_EXPECTED\_RETURN\_DATE NOT NULL DATE

BOOK\_ACTUAL\_RETURN\_DATE DATE

BOOK\_NAME CHAR(20)

SQL> insert into book\_transactions values(1,12,2,('12-jan-2019'),('12-feb\_2019'),('14-feb-2019'));

1 row created.

SQL> insert into book\_transactions values(1,12,2,('12-jan-2019'),('25-jan\_2020'),('14-feb-2020'));

1 row created.

SQL> insert into student\_master values(12,'samantha',2,('12-jan-1999'),'siddipet','windows');

1 row created.

SQL> insert into student\_master values(12,'smitha',2,('12-jan-1999'),'siddipet','windows');

1 row created.

SQL> insert into student\_master values(12,'samantha',2,('12-jan-1999'),'siddipet','windows');

1 row created.

SQL> select b.student\_code,student\_name,book\_code,book\_name from book\_transactions b,student\_master s

2 where b.student\_code=s.student\_code and book\_expected\_return\_date='25-jan-2020';

STUDENT\_CODE STUDENT\_NAME BOOK\_CODE

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BOOK\_NAME

--------------------

12 smitha 1

12 samantha 1

12 samantha 1

**4TH SOLUTION**

SQL> desc staff\_master;

Name Null? Type

----------------------------------------- -------- ----------------------------

STAFF\_CODE NOT NULL NUMBER(8)

STAFF\_NAME NOT NULL VARCHAR2(50)

DESIGN\_CODE NUMBER

DEPT\_CODE NUMBER

HIREDATE DATE

STAFF\_DOB DATE

STAFF\_ADDRESS VARCHAR2(240)

MGR\_CODE NUMBER(8)

STAFF\_SAL NUMBER(10,2)

MONTHS\_WORKED NUMBER(38)

DAY CHAR(20)

SQL> insert into staff\_master values(11,'krishna',22,2,('12-jan-2019'),('12-oct-1999'),'medak',2,200000,2,'thursday');

1 row created.

SQL> alter table book\_transactions

2 add dept\_name char(20);

Table altered.

SQL> alter table book\_transactions

2 add design\_name char(20);

Table altered.

SQL> desc book\_transactions;

Name Null? Type

----------------------------------------- -------- ----------------------------

BOOK\_CODE NUMBER

STUDENT\_CODE NUMBER

STAFF\_CODE NUMBER

BOOK\_ISSUE\_DATE NOT NULL DATE

BOOK\_EXPECTED\_RETURN\_DATE NOT NULL DATE

BOOK\_ACTUAL\_RETURN\_DATE DATE

BOOK\_NAME CHAR(20)

DEPT\_NAME CHAR(20)

DESIGN\_NAME CHAR(20)

SQL> insert into book\_transactions values(1,12,11,('1-jan-2020'),('29-jan-2020'),('30-jan-2020'),'villla','mech','leader');

1 row created.

SQL> insert into book\_transactions values(1,12,10,('1-jan-2020'),('29-jan-2020'),('30-jan-2020'),'villla','mech','leader');

1 row created.

SQL> select s.staff\_code,staff\_name,dept\_name,design\_name,book\_code,book\_name,book\_issue\_date from staff\_master s,book\_transactions b

2 where s.staff\_code=b.staff\_code and to\_char(sysdate-book\_issue\_date)<30;

STAFF\_CODE STAFF\_NAME

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DEPT\_NAME DESIGN\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_ISSU

---------

11 krishna

mech leader 1 villla

01-JAN-20

**5TH SOLUTION**

SQL> insert into staff\_master values(1,'ram',2,2,('22-jan-2019'),('22-jan-1999'),'palair',3,30000,33,'wednesday');

1 row created

SQL> alter table book\_transactions

2 add book\_pub\_author char(20);

SQL> insert into book\_transactions values(1,2,1,('12-jan-2020'),('22-jan-2020'),('23-jan-2020'),'redbull','physics','house','mithra');

SQL> select s.staff\_code,staff\_name,design\_name,dept\_name,book\_code,book\_name,book\_pub\_author,5\*(sysdate-book\_expected\_return\_date) as book\_fine from staff\_master s,book\_transactions b

2 where s.staff\_code=b.staff\_code;

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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2 mouni\_sha

1

3.39739583

2 mouni\_sha

1

1738.3974

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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2 mounisha

1

3.39739583

2 mounisha

1

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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1738.3974

2 mounika

1

3.39739583

2 mounika

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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1

1738.3974

1 mounik

house physics 1 redbull

mithra 18.3973958

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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1 mounik

house physics 1 redbull

18.3973958

1 run

house physics 1 redbull

mithra 18.3973958

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

-------------------- -------------------- ---------- --------------------

BOOK\_PUB\_AUTHOR BOOK\_FINE

-------------------- ----------

1 run

house physics 1 redbull

18.3973958

1 mohan

house physics 1 redbull

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

-------------------- -------------------- ---------- --------------------

BOOK\_PUB\_AUTHOR BOOK\_FINE

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mithra 18.3973958

1 mohan

house physics 1 redbull

18.3973958

1 mohanrao

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

-------------------- -------------------- ---------- --------------------

BOOK\_PUB\_AUTHOR BOOK\_FINE

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house physics 1 redbull

mithra 18.3973958

1 mohanrao

house physics 1 redbull

18.3973958

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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1 mohanrao

house physics 1 redbull

mithra 18.3973958

1 mohanrao

house physics 1 redbull

18.3973958

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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1 mohanlaxmi

house physics 1 redbull

mithra 18.3973958

1 mohanlaxmi

house physics 1 redbull

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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18.3973958

1 mn

house physics 1 redbull

mithra 18.3973958

1 mn

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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house physics 1 redbull

18.3973958

1 mn

house physics 1 redbull

mithra 18.3973958

STAFF\_CODE STAFF\_NAME

---------- --------------------------------------------------

DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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1 mn

house physics 1 redbull

18.3973958

1 mn

house physics 1 redbull

mithra 18.3973958

STAFF\_CODE STAFF\_NAME

---------- --------------------------------------------------

DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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1 mn

house physics 1 redbull

18.3973958

1 sudha

house physics 1 redbull

STAFF\_CODE STAFF\_NAME

---------- --------------------------------------------------

DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

-------------------- ----------

mithra 18.3973958

1 sudha

house physics 1 redbull

18.3973958

1 sudha

STAFF\_CODE STAFF\_NAME

---------- --------------------------------------------------

DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

-------------------- -------------------- ---------- --------------------

BOOK\_PUB\_AUTHOR BOOK\_FINE

-------------------- ----------

house physics 1 redbull

mithra 18.3973958

1 sudha

house physics 1 redbull

18.3973958

STAFF\_CODE STAFF\_NAME

---------- --------------------------------------------------

DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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1 singh

house physics 1 redbull

mithra 18.3973958

1 singh

house physics 1 redbull

18.3973958

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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11 krishna

leader mech 1 villla

-16.602604

1 ram

house physics 1 redbull

STAFF\_CODE STAFF\_NAME

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DESIGN\_NAME DEPT\_NAME BOOK\_CODE BOOK\_NAME

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BOOK\_PUB\_AUTHOR BOOK\_FINE

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mithra 18.3973958

1 ram

house physics 1 redbull

18.3973958

33 rows selected.

**6TH SOLUTION**

SQL> select staff\_code,staff\_name ,staff\_sal from staff\_master where staff\_sal<any(select avg(staff\_sal) from staff\_master group by dept\_code);

STAFF\_CODE STAFF\_NAME STAFF\_SAL

---------- -------------------------------------------------- ----------

2 mouni\_sha 20000

1 mn 20000

1 mohanlaxmi 20000

1 mohanrao 20000

1 mohanrao 20000

1 mohan 20000

1 mounik 20000

2 mounika 20000

2 mounisha 20000

1000 Mounisha 25000

1 mn 28000

STAFF\_CODE STAFF\_NAME STAFF\_SAL

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1 mn 28000

1 ram 30000

1 run 40000

1 sudha 90000

1 singh 90000

1 sudha 90000

17 rows selected.

**7th solution**