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Activity 1

ER Diagram & Table Design)

- E-R Diagram and table reduction
- Table descriptions

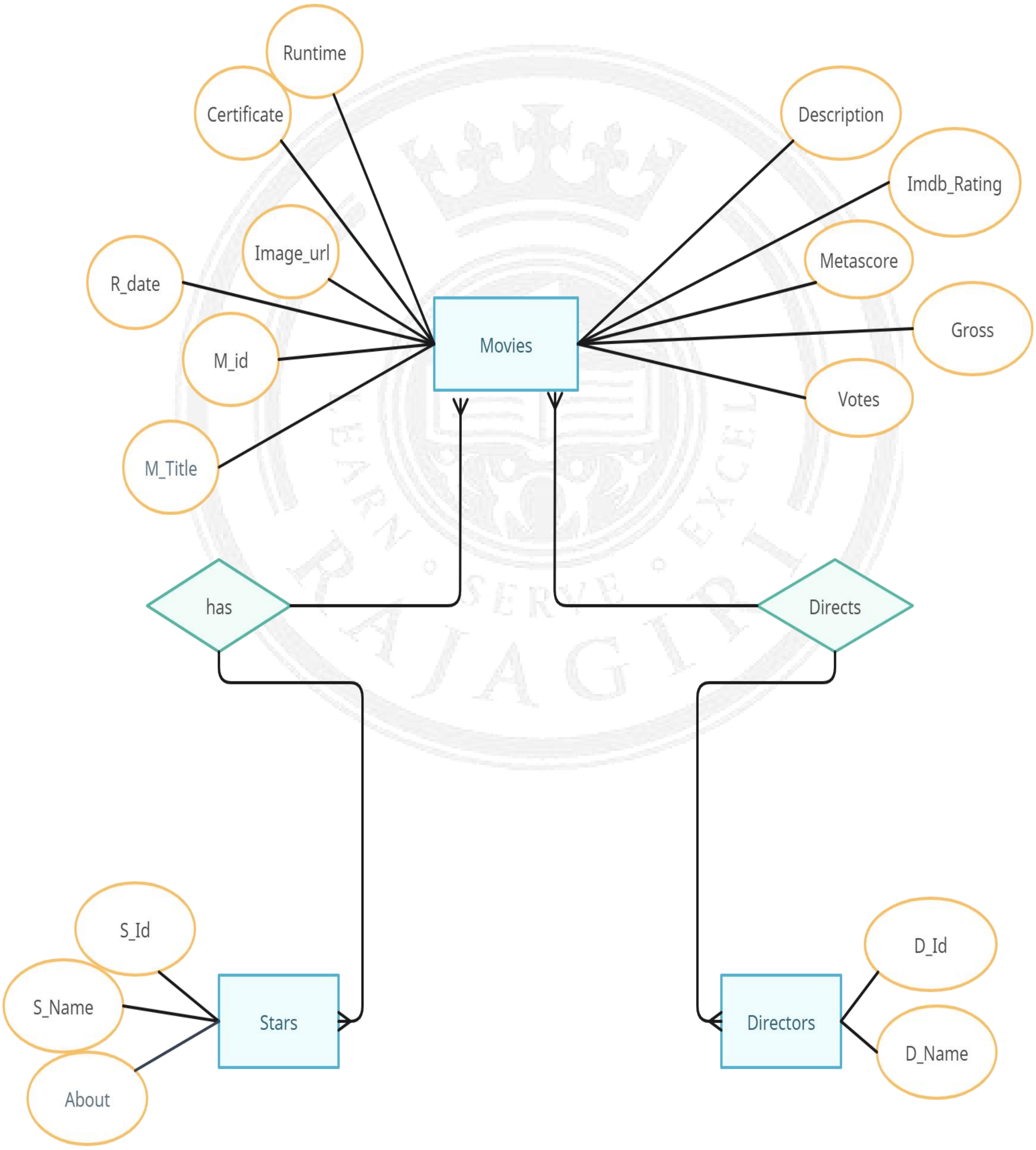

Table:Directors

Id	Name

Table: Stars

Id	Name	About

Table: Movies

Id	Title	R_date	Image_url	Certificate	Runtime	ImdbRating	Description	Metascore	Votes	Gross

Table: MoviesDirectors

MoviesId	DirectorsId

Table: MoviesStars

MoviesId	StarsId

Table Descriptions:

1. **Directors:**
   - Stores information about directors.
   - Attributes:
     - Id (Primary Key, Not Null)
     - Name (Varchar2(40), Not Null)
2. **Stars:**
   - Stores information about stars.
   - Attributes:
     - Id (Primary Key, Not Null)
     - Name (Varchar2(40), Unique)
     - About (Varchar2(100))
3. **Movies:**
   - Stores information about movies.
   - Attributes:
     - Id (Primary Key, Not Null)
     - Title (Varchar2(40), Not Null)
     - R_date (Date)
     - Image_url (Varchar2(100))
     - Certificate (Varchar2(20))
     - Runtime (Number(3,2))
     - ImdbRating (Number(3,1), Default 0)
     - Description (Text(100), Default Null)
     - Metascore (Number(3,1), Default 0)
     - Votes (Int, Default 0)
     - Gross (Number(10,2), Minimum value: 10000)
4. **MoviesDirectors:**
   - Stores associations between movies and directors.
   - Attributes:
     - MoviesId (Foreign Key referencing Id of Movies table)
     - DirectorsId (Foreign Key referencing Id of Directors table)
     - Primary Key: (MoviesId, DirectorsId)
5. **MoviesStars:**
   - Stores associations between movies and stars.
   - Attributes:
     - MoviesId (Foreign Key referencing Id of Movies table)
     - StarsId (Foreign Key referencing Id of Stars table)
     - Primary Key: (MoviesId, StarsId)

- **Activity 2**

.Practice SQL Data Definition Language(DDL) commands

Activity 2.1

Description : Table creation and alteration

Date :

Query

Create the tables based on the above description.

Movie database:

Table name: Directors
Description: Used to store Directors Information

Attribute	Data Type	Constraints
Id	Int	Primary Key/ Not Null
Name	Varchar2(40)	Not Null

```
create table directors(id int primary key, name varchar2(40)not null);

Table created.

    Name                                    Null?        Type
 ----------------------------------------- ------- ----------------------------
 D_ID                                      NOT NULL     NUMBER(38)
 D_NAME                                    NOT NULL     VARCHAR2(40)
```

Table name: Stars

Description: Used to store Stars Information

Attribute	Data Type	Constraints
Id	Int	Primary Key/ Not Null
Name	Varchar2(40)	Unique
About	Varchar2(100)	

```
create table stars(id int primary key, name varchar2(40) unique , about
varchar2(100));
```

```
Table created.


SQL> desc stars;

 Name             Null?          Type

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

 ID            NOT NULL      NUMBER(38)

 NAME                        VARCHAR2(40)

 ABOUT                        VARCHAR2(100)

 DOB                                   DATE
```

Table name: Movies
Description: Used to store Movies Information

Attribute	Data Type	Constraints
Id	Int	Primary Key/ Not Null
Title	Varchar2(40)	Not Null
R_date	Date	
Image_url	Varchar2(100)	
Certificate	Varchar2(20)	
Runtime	Number(3,2)	
ImdbRating	Number (3,1)	By default 0
Description	Text(100)	By default Null
Metascore	Number (3,1)	By default 0
Votes	Int	By default 0
Gross	Number(10,2)	Gross amount should be greater than 10000

```
  _SQL> create table movies(id int primary key ,title varchar2(40) not null,r_date
date ,image_url varchar2(100),certificate varchar2(20),runtime number(3,2),imdbrating
number(3,1) default 0,description varchar2(100) default null,metascore number(3,1)
default 0, votes int default 0,gross number(10,2) check(gross>1000));


Table created.
```

```
SQL> desc movies;

 Name                 Null?            Type
 -------------------  --------     ----------------------------
 ID                  NOT NULL      NUMBER(38)
 TITLE               NOT NULL      VARCHAR2(40)
 R_DATE                             DATE
 IMAGE_URL                          VARCHAR2(100)
 CERTIFICATE                        VARCHAR2(20)
 RUNTIME                             NUMBER(3,2)
 IMDBRATING                          NUMBER(3,1)
 DESCRIPTION                         VARCHAR2(100)
 METASCORE                           NUMBER(3,1)
 VOTES                               NUMBER(38)
 GROSS                               NUMBER(10,2)
```

Table name: MoviesDirectors
Description: Used to store Movie Directors Information

Attribute	Data Type	Constraints	
MoviesId	Int	Foreign Key references Id of **Movies** table	Primary Key
DirectorsId	Int	Foreign Key references Id of **Directors** table	

```
create table moviesdirectors(moviesid int  references movies(id),directors int
references directors(id));
```

```
SQL> desc moviesdirectors;

 Name                              Null?    Type
 -----------------------------     --------    ----------------------------
 MOVIESID                                    NUMBER(38)
 DIRECTORS                                    NUMBER(38)
```

Table name: MoviesStars
Description: Used to store Movie Stars Information

Attribute	Data Type	Constraints	
MoviesId	Int	Foreign Key references Id of **Movies** table	Primary Key
StarsId	Int	Foreign Key references Id of **Stars** table	

```
SQL> create table moviesstars(moviesid int  references movies(id),startsid int
references stars(id));


Table created.


SQL> desc moviesstars;
 Name                            Null?    Type
 ------------------------------- -------- ----------------------------
 MOVIESID                                 NUMBER(38)
 STARTSID                                 NUMBER(38)
```

- **Add a column ‘DOB’ to Stars table.**

```
SQL> alter table stars add dob date;
    Table altered.
```

- **Drop the column ‘Gross’ in Movies table.**

```
SQL> alter table movies drop column gross;

    Table altered.
```

- **Add column ‘Language’ in Movies table.**

```
alter table movies add language varchar2(10);
Table altered.
```

- **Add column Gross Number(10,2) in Movies table.**

```
SQL> alter table movies add gross number(10,2);

Table altered
```

- **Change the name of the column ‘R_date’ in Movies table to Releasedate. Releasedate.**

```
SQL> alter table movies rename column r_date to realeasedate;

Table altered.
```

- **Add a column ‘Age’ in Directors table as Number. Age must be 7 years or above.**

```
SQL> alter table directors add age number check(age>=7);

Table altered.
```

- **Add a new column ‘Hit’ in Movies table with datatype Number(1) and by default 0.**

```
SQL> alter table movies add hit number(1) default 0;

Table altered.
```

- **Add a new column ‘Entry_date’ in Movies table to record the date on which the movie details are entered in the data base.**

```
SQL> alter table movies add entry_date date;

Table altered.
```

- Destroy the table **MoviesStars** and recreate it.

```
SQL>drop table moviesstars;
```

Table dropped.

SQL>create table moviesstars(moviesid int references movies(id), starsid int references stars(id) primary key);

Table created.

- **Change the size of the Director's name to 30.**

  SQL>alter table directors modify name varchar2(30);

  Table altered.

- **Add the following check constraints:**
  - **Releasedate should be less than the Entry_date in the Movies table.**
  - **Language of movies should be Malayalam, English, Tamil or Hindi.**

  SQL> alter table movies add constraint ch_date check(release_date<entry_date);

  Table altered..

  SQL> alter table movies add constraint chk_language check(language in ('malayalam','english','tamil','hindi'));

  Table altered.

Activity 3
<u>Practice SQL Data Manipulation Language (DML) commands</u>

Activity 3.1

Description : <u>. Row insertion, deletion and updating</u>

Date :

<u>Query</u>

- **Insert the appropriate data (10 rows) for the tables with respect to defined datatypes, size and constraints.**

Table: directors

```
SQL> insert into directors values('01','padmarajan',46);

1 row created.

SQL> insert into directors values('02','jeethu joseph',41);

1 row created.

SQL> insert into directors values('03','lijo jose',40);

1 row created.

SQL> insert into directors values('04','vineeth sreenivasan',37);

1 row created.

SQL> insert into directors values('05','alphonse puthren',35);

1 row created.

SQL> insert into directors values('06','kamal ',70);

1 row created.

SQL> insert into directors values('07','basil joseph ',29);

1 row created.

SQL> insert into directors values('08','sibi malayil ',59);
```

```
1 row created.

SQL> insert into directors values('09','sathyan anthikad ',69);

1 row created.

SQL> insert into directors values('10','james cameron ',65);

1 row created.

SQL> select * from directors;


      D_ID      D_NAME                            AGE
----------     ------------------------------      ----------
         1       padmarajan                        46
         2       jeethu joseph                     41
         3       lijo jose                         40
         4       vineeth  sreenivasan              37
         5       alphonse puthren                  35
         6       kamal                             70
         7       basil joseph                      29
         8       sibi malayil                      59
         9       sathyan anthikad                  69
        10      james cameron                      65

10 rows selected.
```

Table: stars

```
SQL> insert into stars values('11','mohanlal','malayalam actor','26/jun/1970');
```

```
1 row created.

SQL> insert into stars values('12','mammootty','malayalam actor','25/jan/1973');

1 row created.

SQL> insert into stars values('13','prithviraj','malayalam actor','2/oct/1990');

1 row created.

SQL> insert into stars values('14','manju warrier','malayalam actress','4/sep/1987');

1 row created.

SQL> insert into stars values('15','bhavana','malayalam actress','4/sep/1995');

1 row created.

SQL> insert into stars values('16','vijay','tamil actor','18/feb/1980');

1 row created.

SQL> insert into stars values('17','shah rukh khan','hindi actor','1/apr/1970');

1 row created.

SQL> insert into stars values('18','kate winslet','english actress','3/apr/1975');

1 row created.

SQL> insert into stars values('19','surya','tamil actor','10/may/1968');
```

```
1 row created.

SQL> insert into stars values('20','tom holland','english actor','17/may/1996');

1 row created.

SQL> select * from stars;


    S_ID           S_NAME                              ABOUT                          DOB
----------   ---------------------------------------   -----------------------------   -----------
     11          mohanlal                    malayalam actor                    26-JUN-70
     12          mammootty                   malayalam actor                    25-JAN-73
     13          prithviraj                  malayalam ac                       02-OCT-90
     14          manju warrier               malayalam actress                  04-SEP-87
     15           bhavana                    malayalam actress                  04-SEP-95
     16           vijay                      tamil actor                        18-FEB-80
     17          shah rukh khan              hindi actor                         01-APR-70
     18          kate winslet                english actres                      03-APR-75
     19          surya                       tamil actor                        10-MAY-68
     20          tom holland                 english actor                       17-MAY-96

    10 rows selected.
```

Table: Movies

```
SQL> insert into Movies values('1000','Premam','29-MAY-
2015','https://www.primevideo.com/premam.jpg','U',3,4.2,'Describes about Georges
life',49,96,'malayalam',0,'28-APR-2023',19383748);

1 row created.
```

```
SQL> insert into Movies values('1001','Vettam','29-MAY-
2004','https://www.movies.com/vettam.jpg','U/A',2,4.4,'A man steals a chain and hides it in a bag
of an unassuming woman',45,98,'malayalam',0,'28-MAR-2023',19383743);


1 row created.


SQL> insert into Movies values('1002','Anjaan','25-FEB-
2014','https://www.movies.com/anjaan.jpg','U/A',3,4.1,'Krishna, who comes to Mumbai in search
of his missing brother,',49,92,'tamil',0,19383746,’28-JAN-2023');


1 row created.


SQL> insert into Movies values('1003','Master','29-OCT-
2020','https://www.movies.com/master.jpg','U/A',3,4.5,'An alcoholic professor is enrolled to teach
at a juvenile facility',49,90,'tamil',0,'28-APR-2023',19383799);


1 row created.


SQL> insert into Movies values('1004','Rorschach','07-OCT-
2022','https://www.movies.com/rorschach.jpg','U/A',5,4.1,'Luke Anthony is out on a mission to
seek revenge ',35,90,'malayalam',0,'28-NOV-2022',19383748);


1 row created.


SQL> insert into Movies values('1005','Raone','25-JAN-
2012','https://www.movies.com/raone.jpg','U/A',3,4.2,'Shekhar, a gaming programmer,develops a
game called ra one',50,90,'hindi',0,'05-MAY-2015',19383748);


1 row created.


SQL> insert into Movies values('1006','jailer','06-aug-
2023','https://www.movies.com/jailer.jpg','U/A',3,7.7,'Muthavel pandian a jailer set out to stop a
gang when they try to flee their leader from prison',38,91,'tamil',1,'18-nov-2023',18345374);
```

```
1 row created.

SQL> insert into Movies values('1007','minnal murali','18-dec-
2021','https://www.movies.com/minnal murali.jpg','U/A',2.5,7.8,'jaison a young tailor gains
superpowers after being struck by lightning ',40,95,'malayalam',0,'23-march-2022',23494374);

1 row created.

SQL> insert into Movies values('1008','njan prakashan','21-dec-
2018','https://www.movies.com/njan prakashan.jpg','U/A',2.15,7.7,'prakashan dreams of living a
lavish and easy life',45,83,'malayalam',0,'17-apr-2019',17989437);

1 row created.

SQL> insert into Movies values('1009','titanic','16-dec-
1997','https://www.movies.com/titanic.jpg','U/A',3.15,7.9,'incorporating both historical and
fictionalized aspects',49,95,'english',0,'27-feb-1998',21743937);

1 row created.

SQL> select * from movies;

   M_ID           M_TITLE           RELEASEDA              IMAGE_URL
 ----------   ---------------------------   ---------    ------------------------------------------------
   1000        Premam               29-MAY-15   https://www.primevideo.com/premam.jp
   1001        Vettam               29-MAY-04   https://www.movies.com/vettam.j
   1002        Anjaan               25-FEB-14   https://www.movies.com/anjaan.jpg
   1003        Master               29-OCT-20   https://www.movies.com/master.jp
   1004        Rorschach            07-OCT-22   https://www.movies.com/rorschach.jp
   1005        Raone                25-JAN-12   https://www.movies.com/raone.jpg
   1006        jailer               06-AUG-23   https://www.movies.com/jailer.jpg
   1007       minnal murali         18-DEC-21   https://www.movies.com/minnal murali.jpg
   1008       njan prakashan        21-DEC-18   https://www.movies.com/njan prakashan.jpg
```

```
    1009          titanic                 16-DEC-97       https://www.movies.com/titanic.jpg


 CERTIFICATE  RUNTIM    IMDB_RATING                         DESCRIPTION
   ----------      ------------       ---------           -----------------------------------------------------------------
     U              3              4.2            Describes about Georges life
    U/A             2             4.4             A man steals a chain and hides it in a bag of an
.                                                  unassuming   woman
    U/A             3             4.1             Krishna, who comes to Mumbai in search of his
                                                          missing brother,
    U/A             3              4.5            An alcoholic professor is enrolled to teach at a
                                                       juvenile facility
    U/A             5              4.1            Luke Anthony is out on a mission to seek revenge
    U               3              4.2            Shekhar, a gaming programmer,develops a game
                                                   called ra one
   U/A              3              7.7             Muthavel pandian a jailer set out to stop a gang when  .
                                                  they try  to free their leader from prison
   U/A              2.5            7.8             jaison a young tailor gains superpowers afterbeing
                                                        struck by  lightning
   U/A              2.15           7.7            prakashan dreams of living a lavish and easy life
   U/A              3.15           7.9            incorporating both historical and fictionalized aspects


 METASCORE       VOTES          LANGUAGE              HIT         ENTRY_DAT              GROSS
 -----------        -----------       ----------------------        ---------------     ---------------           -------------
    49              96            malayalam             0           28-APR-23             19383748
    45              98            malayalam             0           28-MAR-23             19383743
    49              92            tamil                 0           28-JAN-23             19383746
    49              90            tamil                 0           28-APR-23             19383799
    35              90            malayalam             0           28-NOV-22             19383748
    50              90            hindi                 0           05-MAY-15             19383748
    38              91            tamil                 1           18-NOV-23             18345374
   40          95          malayalam          0       23-MAR-22       23494374
  45          83          malayalam          0       17-APR-19       17989437
   49          95          english            0       27-FEB-98       21743937

10 rows selected.
```

TABLE:movies_director;

```
SQL> insert into movies_directors values(1000,5)

1 row created.

SQL> insert into movies_directors values(1001,1);

1 row created.

SQL> insert into movies_directors values(1002,2);

1 row created.

SQL> insert into movies_directors values(1003,3);

1 row created.

SQL> insert into movies_directors values(1004,4);

1 row created.

SQL> insert into movies_directors values(1005,6);

1 row created.
```

```
SQL> insert into movies_directors values(1006,8);

1 row created.

SQL> insert into movies_directors values(1007,7);

1 row created.

SQL> insert into movies_directors values(1008,9);

1 row created.

SQL> insert into movies_directors values(1009,10);

1 row created.

SQL> select * from movies_directors;

 MOVIES_ID     DIRECTORS_ID
----------     ------------
     1000              5
     1001              1
     1002              2
     1003              3
     1004              4
     1005              6
     1006              8
     1007              7
     1008              9
     1009             10
```

```
10 rows selected.
```

TABLE:MOVIES_STARS

```
SQL>  insert into movies_stars values(1000,13);


1 row created.


SQL>  insert into movies_stars values(1001,15);


1 row created.


SQL>  insert into movies_stars values(1002,19);


1 row created.


SQL>  insert into movies_stars values(1003,16);


1 row created.


SQL>  insert into movies_stars values(1004,12);


1 row created.


SQL>  insert into movies_stars values(1005,17);


1 row created.


SQL>  insert into movies_stars values(1006,11);


1 row created.
```

```
SQL>  insert into movies_stars values(1007,18);

1 row created.

SQL>  insert into movies_stars values(1008,14);

1 row created.

SQL>  insert into movies_stars values(1009,20);

1 row created.

SQL> select * from movies_stars;

 MOVIES_ID      STARS_ID
----------      ----------
      1000           13
      1001           15
      1002           19
      1003           16
      1004           12
      1005           17
      1006           11
      1007           18
      1008           14
      1009           20

10 rows selected.
```

- **Change value of Hit to 1 where ‘Votes’ greater than or equal to 90.**

```
SQL> update movies set hit=1 where (votes>=90);

9 rows updated.
```

- **Create table IndustryHit with the following columns:**

  Id
  Title
  Releasedate
  Language
  Votes
  Gross

  The data types and null characteristics for these columns should be the same as the corresponding columns in the Movies table described at the beginning of the lab exercise.

```
SQL> create table industry_hit(i_id int primary key,i_title varchar2(30),releasedate
date,language varchar2(10),votes int default 0,gross number(10,2));

Table created.
```

- **New movies hit the box office; their data is as follows:**

  Id: 1014, 1021, 1032
  Title: 2018: Everyone is a Hero, Oppenheimer, Maamannan
  Releasedate: 5 May 2023, 21 July 2023, 29 June 2023
  Language: Malayalam, English, Tamil
  Votes: 97, 96, 95
  Gross: 750000000, 500000000, 505000000

  Add the new employees to the IndustryHit table.
- **Insert data into the new IndustryHit table.**

```
SQL> insert into industry_hit values(1014,'2018:everyone is a hero','5-may-
2023','Malayalam','97','75000000');


1 row created.


SQL> insert into industry_hit values(1021,'oppenheimer','21-jul-2023','English','96','50000000');
```

```
1 row created.


SQL> insert into industry_hit values(1032,'maamannan','29-jun-2023','Tamil','95','50500000');

1 row created.
```

- **Insert data into the IndustryHit table by copying the appropriate columns in the Movies table for those Movies that have Votes greater than or equal to 95.**

```
SQL> insert into industry_hit(i_id,i_title,releasedate,language,votes,gross) select
  m_id,m_title,releasedate,language,votes,gross from movies where votes>=95;


  4 rows created.
```

- **Movie Oppenheimer got a Metascore of 80. Make the appropriate data change.**

```
SQL>  insert into Movies values('1010','oppenheimer','18-jul-
   2023','https://www.movies.com/oppenheimer.jpg','U/A',2.5,7.8,'story of creating atom
   bomb',40,95,'English',0,'23-jul-2023',23723937);


   1 row created.


SQL> update movies set metascore =80  where  m_title='oppenheimer';


1 row updated.
```

- **Movie 'Voice Of Sathyanathan' was released.**
  For 'Voice Of Sathyanathan' enter the following data:
  Id: 1015
  Title: Voice Of Sathyanathan
  Releasedate: 28 July 2023
  Image_url: https://m.media-amazon.com/imak2M_.jpg
  Certificate: U
  Runtime: 2.10
  ImdbRating: 7.4
  Description: A man's life becomes increasingly complicated after his neighbor is injured in a dispute over a fence.

Metascore: 60
Votes: 90
Gross: 109500000

```
   SQL>  insert into Movies values('1015','voice of sathyanathan','18-jul-
2023','https://m.media-amazon.com/imak2M_.jpg','U',2.10,7.4,'A man life becomes
increasing   complicated after his neighbor is injured in a dispute over a
fense',60,90,'Malayalam',0,'23-jul-  2023',10950000);

1 row created.
```

- **Delete all rows from IndustryHit and drop the IndustryHit table.**

```
SQL> delete  from industry_hit;


 7 rows deleted.


 SQL> drop table industry_hit;


 Table dropped.
```

Activity 3.2

Description : Retrieval of data (Simple select query and select with 'where' options (include all relational and logical operators)

- **List details of all movies**

  Select * from movies;

```
  M_ID           M_TITLE            RELEASEDA                  IMAGE_URL
----------   --------------------------   ---------         ------------------------------------------------
  1000         Premam               29-MAY-15       https://www.primevideo.com/premam.jp
  1001         Vettam               29-MAY-04      https://www.movies.com/vettam.j
  1002         Anjaan                25-FEB-14       https://www.movies.com/anjaan.jpg
  1003         Master                29-OCT-20       https://www.movies.com/master.jp
  1004         Rorschach             07-OCT-22        https://www.movies.com/rorschach.jp
  1005         Raone                25-JAN-12       https://www.movies.com/raone.jpg
  1006         jailer               06-AUG-23       https://www.movies.com/jailer.jpg
```

```
1007       minnal murali        18-DEC-21     https://www.movies.com/minnal murali.jpg
1008       njan prakashan       21-DEC-18     https://www.movies.com/njan prakashan.jpg
1009        titanic             16-DEC-97     https://www.movies.com/titanic.jpg


CERTIFICATE  RUNTIM   IMDB_RATING                    DESCRIPTION
 ----------  ------------  ---------      -----------------------------------------------------------------
   U           3           4.2         Describes about Georges life
   U/A         2          4.4          A man steals a chain and hides it in a bag of an
.                                       unassuming   woman
   U/A         3          4.1          Krishna, who comes to Mumbai in search of his
                                              missing brother,
   U/A         3           4.5         An alcoholic professor is enrolled to teach at a
                                          juvenile facility
   U/A         5           4.1         Luke Anthony is out on a mission to seek revenge
   U            3          4.2         Shekhar, a gaming programmer,develops a game
                                        called ra one
  U/A          3           7.7          Muthavel pandian a jailer set out to stop a gang when  .
                                       they try  to free their leader from prison
  U/A          2.5        7.8          jaison a young tailor gains superpowers afterbeing
                                              struck by  lightning
 U/A          2.15        7.7         prakashan dreams of living a lavish and easy life
 U/A          3.15        7.9         incorporating both historical and fictionalized aspects


METASCORE      VOTES        LANGUAGE          HIT       ENTRY_DAT          GROSS
 -----------     -----------    ----------------------    ---------------    ---------------       -------------
   49           96           malayalam          0        28-APR-23          19383748
   45           98           malayalam          0        28-MAR-23         19383743
   49           92           tamil              0        28-JAN-23         19383746
   49           90           tamil              0        28-APR-23         19383799
   35           90           malayalam          0        28-NOV-22         19383748
```

```
      50              90              hindi                0         05-MAY-15           19383748

      38              91              tamil               1         18-NOV-23           18345374

      40              95              malayalam           0          23-MAR-22          23494374

     45               83             malayalam           0          17-APR-19           17989437

      49              95              english              0          27-FEB-98           21743937
```

10 rows selected.

- **List Title, Votes, Releasedate, Gross where Gross collection greater than 5000,000,00. Sequence the results in descending order by Gross.**

```
 SQL>  select m_title , votes ,releasedate, gross from movies where gross > 5000000 order
by gross desc;

M_TITLE                                  VOTES           RELEASEDA      GROSS
---------------------------------------       ---------          ----------          ----------
oppenheimer                                 95              18-JUL-23       23723937
minnal murali                                95              18-DEC-21      23494374
titanic                                          95              16-DEC-97      21743937
Master                                          90              29-OCT-20      19383799
Rorschach                                     90              07-OCT-22       19383748
Raone                                           90              25-JAN-12      19383748
Anjaan                                          92              25-FEB-14       19383746
jailer                                            91              06-AUG-23     18345374
njan prakashan                              83              21-DEC-18       17989437
voice of sathyanathan                   90              28-JUL-23       10950000
```

- **Retrieve the titles and years of Tamil movies released in 2022.**

```
  SQL> select m_title ,releasedate  from movies where releasedate between '1-jan-2022' and
'30- dec-2022' and language='Tamil';

no rows selected
```

- **Get the titles, years, and meta scores of movies sorted in descending order of meta scores.**

```
SQL> select m_title ,releasedate ,metascore from movies order by metascore desc;
```

```
M_TITLE                                  RELEASEDE      METASCORE
---------------------------------       ---------------    ----------
  njan prakashan                          21-DEC-18          90
  jailer                                  06-AUG-23          88
  Master                                  29-OCT-20          83
  Anjaan                                  25-FEB-14          80
  oppenheimer                             18-JUL-23          80
  Rorschach                               07-OCT-22          75
  titanic                                 16-DEC-97          71
  minnal murali                           18-DEC-21          66
  voice of sathyanathan                   28-JUL-23          60
  Raone                                   25-JAN-12          50

10 rows selected..
```

- **List titles, years, languages, dates and votes of all Malayalam and English movies released before 2022 and ImdbRating less than 7. The list should be ordered by Title.**

```
SQL>  select m_title ,extract (year from
releasedate)year ,language ,releasedate,votes from movies where language in
('Malayalam','English') and extract (year from releasedate)<'2022' and imdb_rating < 7
order by m_title;
```

```
M_TITLE                                YEAR        LANGUAGE     RELEASEDA      VOTES
--------------------------------------  ----------   -----------   ---------      ----------
 minnal murali                          2021        Malayalam     18-DEC-21        95
```

- **List all the movies whose title starts with ‘Oppen’. Order the result by descending order of their id.**

```
SQL>  select m_title from movies where m_title like 'oppen%' order by m_id;
```

```
        M_TITLE

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

 oppenheimer
```

- **List Hit movies released in 2022 and 2023. Order the result by ascending order of their Titles.**

```
SQL>  select m_title  from movies where hit = '1' and extract (year  from releasedate) between
                                   '2022' and '2023' order by m_title asc;


                                             M_TITLE

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

                                            Rorschach

                                              jailer
```

- **Retrieve movies with a runtime between 1.5 and 2.5 hours**

```
SQL>  select m_title,runtime from movies where runtime between  '1.5' and '2.5';


                     M_TITLE                    RUNTIME

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

                   minnal murali                   2.5

                  njan prakashan                  2.15

                   oppenheimer                     2.5

                  voice of sathyanathan           2.1.
```

- **Retrieve movies with Metascore ratings below 50 and IMDb ratings above 6.0.**

```
SQL> select m_title from movies where metascore <50 and imdb_rating > 6.0;


     no rows selected
```

- **Retrieve movies with no description provided.**

```
SQL>  select m_title from movies where description is null;


 no rows selected
```

Activity 3.3

Description: Functions: Numeric Data, Character Conversion and Group functions

- **Illustrate the different numeric functions using dual table (power, round, ceil, floor, abs, exp, greatest, least, mod, trunc, round, sign, sqrt etc.)**

```
SQL> SELECT POWER(2, 3) AS power_result FROM dual;
 POWER_RESULT
     ------------
          8

SQL> SELECT ROUND(5.678) AS rounded_number FROM dual;

ROUNDED_NUMBER
--------------
           6

SQL> SELECT CEIL(3.14159) AS ceiling_number FROM dual;

CEILING_NUMBER
--------------
           4

SQL> SELECT FLOOR(9.999) AS floor_number FROM dual;

FLOOR_NUMBER
------------
         9

SQL> SELECT ABS(-10) AS absolute_value FROM dual;

ABSOLUTE_VALUE
--------------
          10


SQL> SELECT EXP(2) AS exponential_value FROM dual;

EXPONENTIAL_VALUE
```

```
-----------------
       7.3890561

SQL> SELECT GREATEST(7, 12, 5, 9) AS greatest_value FROM dual;

GREATEST_VALUE
--------------
          12

SQL> SELECT least(7, 12, 5, 9) AS greatest_value FROM dual;

GREATEST_VALUE
--------------
           7

SQL> SELECT MOD(15, 4) AS modulus_result FROM dual;

MODULUS_RESULT
--------------
           3

SQL> SELECT TRUNC(8.76543, 2) AS truncated_number FROM dual;

TRUNCATED_NUMBER
----------------
          8.76

SQL> SELECT SIGN(-5) AS sign_negative, SIGN(0) AS sign_zero, SIGN(8) AS sign_positive FROM dual;

SIGN_NEGATIVE  SIGN_ZERO SIGN_POSITIVE
------------- ---------- -------------
          -1          0             1

SQL> SELECT SQRT(25) AS square_root_result FROM dual;

SQUARE_ROOT_RESULT
------------------
   5
```

- **Illustrate the character functions (upper, lower, initcap, length, concat, ascii, substr, ltrim, rtrim, trim, translate, instr, chr,Lpad,Rpadetc) using the table Movies.**

```
SQL> select upper(m_title) title from movies;
```

```
TITLE
----------------------------------------
ANJAAN
MASTER
RORSCHACH
RAONE
JAILER
MINNAL MURALI
NJAN PRAKASHAN
TITANIC
OPPENHEIMER
VOICE OF SATHYANATHAN

10 rows selected.

SQL> select lower(m_title)title from movies;

TITLE
----------------------------------------
anjaan
master
rorschach
raone
jailer
minnal murali
njan prakashan
titanic
oppenheimer
voice of sathyanathan
```

```
10 rows selected.

SQL> select initcap(m_title)title from movies;

TITLE
----------------------------------------
Anjaan
Master
Rorschach
Raone
Jailer
Minnal Murali
Njan Prakashan
Titanic
Oppenheimer
Voice Of Sathyanathan

10 rows selected.

SQL> select length(m_title)title from movies;

TITLE
----------
6
6
9
5
6
13
14
7
```

```
11

21


10 rows selected.


SQL> select concat('Movie Title: ', m_title) from movies;


CONCAT('MOVIETITLE:',M_TITLE)

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

Movie Title: Anjaan

Movie Title: Master

Movie Title: Rorschach

Movie Title: Raone

Movie Title: jailer

Movie Title: minnal murali

Movie Title: njan prakashan

Movie Title: titanic

Movie Title: oppenheimer

Movie Title: voice of sathyanathan


10 rows selected.


SQL> select  ascii(m_title) title from movies;


TITLE

----------

65

77

82

82

106
```

```
109

110

116

111

118


10 rows selected.


SQL> select  ascii(m_title) title from movies;


TITLE

----------

65

77

82

82

106

109

110

116

111

118


10 rows selected.


SQL> select substr(m_title ,1,4)title from movies;


TITL

----

Anja

Mast
```

```
Rors

Raon

jail

minn

njan

tita

oppe

voic


10 rows selected.


SQL> select ltrim(m_title,'An') title from movies;


TITLE

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

jaan

Master

Rorschach

Raone

jailer

minnal murali

jan prakashan

titanic

oppenheimer

voice of sathyanathan


10 rows selected.


SQL> select rtrim(m_title,'an') title from movies;


TITLE
```

```
----------------------------------------
Anj
Master
Rorschach
Raone
jailer
minnal murali
njan prakash
titanic
oppenheimer
voice of sathyanath

10 rows selected.

SQL> select m_title,trim( 'n'from m_title )from movies;

M_TITLE                                  TRIM('N'FROMM_TITLE)
---------------------------------------- ----------------------------------------
Anjaan                                   Anjaa
Master                                   Master
Rorschach                                Rorschach
Raone                                    Raone
jailer                                   jailer
minnal murali                            minnal murali
njan prakashan                           jan prakasha
titanic                                  titanic
oppenheimer                              oppenheimer
voice of sathyanathan                    voice of sathyanatha

10 rows select
```

```
SQL> select m_title, translate(m_title,'a','A') from movies;

M_TITLE                                  TRANSLATE(M_TITLE,'A','A')
---------------------------------------- ----------------------------------------
Anjaan                                   AnjAAn
Master                                   MAster
Rorschach                                RorschAch
Raone                                    RAone
jailer                                   jAiler
minnal murali                            minnAl murAli
njan prakashan                           njAn prAkAshAn
titanic                                  titAnic
oppenheimer                              oppenheimer
voice of sathyanathan                    voice of sAthyAnAthAn

10 rows selected.

SQL> select m_title,instr(m_title,'a',1,2) from movies;

M_TITLE                                  INSTR(M_TITLE,'A',1,2)
---------------------------------------- ----------------------
Anjaan                                   5
Master                                   0
Rorschach                                0
Raone                                    0
jailer                                   0
minnal murali                            11
njan prakashan                           8
titanic                                  0
oppenheimer                              0
```

```
voice of sathyanathan                    15

10 rows selected.

SQL> select chr('65') from movies;

C
-
A
A
A
A
A
A
A
A
A
A

10 rows selected.

SQL> select m_title, lpad(m_title,22,'*') from movies;

M_TITLE                                  LPAD(M_TITLE,22,'*')
----------------------------------------  ----------------------
Anjaan                                   ****************Anjaan
Master                                   ****************Master
Rorschach                                *************Rorschach
Raone                                    *****************Raone
jailer                                   ****************jailer
minnal murali                            *********minnal murali
```

```
  njan prakashan                    ********njan prakashan
  titanic                           ***************titanic
 oppenheimer                       ***********oppenheimer
   voice of sathyanathan             *voice of sathyanathan

                    10 rows selected.
```

```
SQL> select m_title, rpad(m_title,22,'*') from movies;
```

```
  M_TITLE                                  RPAD(M_TITLE,22,'*')
   --------------------------------------     ----------------------
 Anjaan                                    Anjaan****************
 Master                                    Master****************
 Rorschach                                 Rorschach*************
 Raone                                     Raone*****************
  jailer                                    jailer****************
  minnal murali                             minnal murali*********
  njan prakashan                            njan prakashan********
  titanic                                   titanic***************
 oppenheimer                               oppenheimer***********
   voice of sathyanathan                     voice of sathyanathan*

                    10 rows selected.
```

- **Illustration of conversion functions- to_number, to_char(numberconversion), to_char(dateconversion)**

```
SQL>  select to_number('2') from movies where m_id=1006;
```

```
TO_NUMBER('2')
--------------
2

SQL>  select to_char(1300000,'9999999.99') from movies where m_id=1006;

TO_CHAR(130
-----------
 1300000.00

SQL>  select to_char(releasedate,'day month year') from movies where m_id=1006;

TO_CHAR(RELEASEDATE,'DAYMONTHYEAR')
--------------------------------------------------------------
sunday    august    twenty twenty-three

SQL>  select to_char(releasedate,'day month yyyy') from movies where m_id=1006;

TO_CHAR(RELEASEDATE,'DAY
------------------------
sunday    august    2023
```

- **Count the total no. of Movies**

```
SQL> select count('*') from movies;

COUNT('*')
----------
    10
```

- **Calculate the average votes of movies.**

```
  SQL> select avg(votes) avgvotes from movies;


  AVGVOTES
----------
     91.1
```

- **Determine the maximum and minimum collection of movies. Rename the output as Max_Coll and Min_Coll respectively.**

```
SQL> select max(gross)max_Coll,min(gross)min_Coll from movies;


  MAX_COLL     MIN_COLL
   ----------      ----------
  23723937     10950000
```

- **Count the number of movies crossed the collection 50,00,00,000.**

```
SQL> select count(m_title) from movies where gross>=500000000;


COUNT(M_TITLE)
--------------
         0
```

- **Count the hit movies of 2021.**

```
SQL> select count(m_title) from movies where hit='1';


COUNT(M_TITLE)
    --------------
         7
```

Activity 3.4

Description : Data manipulations using date functions

- **Provide a list of all movies which were released on June 16, 2020.
Display the year and month of the released date and the Id. Sort the result by Id. Name the derived columns YEAR and MONTH.**

```
SQL> select m_title,extract (year from releasedate)year,extract(month from releasedate )month from movies where releasedate ='16-jun-2020';


no rows selected
```

- **List the number of months between release date and entry date of each movie.**

```
SQL> select m_title,months_between (entry_date ,releasedate) months from movies;


M_TITLE                                      MONTHS
---------------------------------------      ----------
Anjaan                                      107.096774
Master                                      29.9677419
Rorschach                                   1.67741935
Raone                                       39.3548387
jailer                                      3.38709677
minnal murali                               3.16129032
njan prakashan                              3.87096774
titanic                                     2.35483871
oppenheimer                                 .161290323
voice of sathyanathan                       .64516129

10 rows selected.
```

- **List the Entry_date in the format 'DD-Month-YY'.**

```
SQL> select m_title,entry_date from movies;


M_TITLE                                    ENTRY_DAT
---------------------------------------    ---------
Anjaan                                     28-JAN-23
Master                                     28-APR-23
Rorschach                                  28-NOV-22
Raone                                      05-MAY-15
jailer                                     18-NOV-23
minnal murali                              23-MAR-22
njan prakashan                             17-APR-19
titanic                                    27-FEB-98
oppenheimer                                23-JUL-23
voice of sathyanathan                      17-AUG-23


10 rows selected.
```

- **List the date, 8 days after today's date.**

```
SQL> select sysdate, sysdate+8 as eightdaysaftertoday  from dual;

SYSDATE     EIGHTDAYS
---------   ---------
25-AUG-23   02-SEP-23
```

- **List all the movies which were released in the month of February.**

```
SQL> select m_title,releasedate from movies where extract (month from releasedate)=2;


M_TITLE                                    RELEASEDAY
---------------------------------------    ---------
  Anjaan                                   25-FEB-14
```

- **Illustrate the different date functions using dual table (to_date, Add_months, last_day, months_between, next_day, round etc.)**

```
SQL> select to_date('29-08-2023','dd-mm-yyyy')as differentdate from dual;

DIFFERENT
---------
29-AUG-23

SQL> select add_months(sysdate ,2)as date_2_months_after from dual;

DATE_2_MO
---------
29-OCT-23

SQL> select last_day(sysdate)as last_date_ofcurrent_month from dual;

LAST_DATE
---------
31-AUG-23

SQL> select months_between('30-mar-2024','04-nov-2022') as months from dual;

   MONTHS
----------
16.8387097

SQL> select next_day(sysdate,'monday') as nextmonday from dual;

NEXTMONDA
---------
04-SEP-23
```

```
SQL> select sysdate,round(sysdate,'mm') as roundtohour from dual;


SYSDATE   ROUNDTOHO
--------- ---------
29-AUG-23 01-SEP-23
```

Activity 3.5

Description : Set Operations

- **Create a new table IndustryHit (Id, title, genre, Certificate, Gross, Releasedate). Insert some movies from Movies table and some new movies in the new table IndustryHit.**

```
SQL> create table industryhit ( id int primary key , title varchar2(40),genre varchar2(40),certificate varchar2(20),gross number(10,2),release_date date);

Table created.

SQL> insert into industryhit( id,title, certificate,gross, release_date ) select id,title,certificate,gross,release_date from movies where title='Master';

1 row created.

SQL> insert into industryhit( id,title, certificate,gross, release_date ) select id,title,certificate,gross,release_date from movies where title='Rorschach';

1 row created.

SQL> insert into industryhit( id,title, certificate,gross, release_date ) select id,title,certificate,gross,release_date from movies where title='jailer';

1 row created.

SQL> insert into industryhit( id,title, certificate,gross, release_date ) select id,title,certificate,gross,release_date from movies where title='minnal murali';

1 row created.

SQL> insert into industryhit( id,title, certificate,gross, release_date ) select
```

```
id,title,certificate,gross,release_date from movies where title='oppenheimer';

        1 row created.

        SQL> update  industryhit set genre ='horror' where id='1003';

        1 row updated.

        SQL> update  industryhit set genre ='action thriller' where id='1003';

        1 row updated.

        SQL> update  industryhit set genre ='horror' where id='1004';

        1 row updated.

        SQL> update  industryhit set genre ='action' where id='1006';

        1 row updated.

        SQL> update  industryhit set genre ='super hero' where id='1007';

        1 row updated.

        SQL> update  industryhit set genre ='biographical' where id='1010';

        1 row updated.

         SQL> insert into industryhit values(1020,'king of
   kotha','gangster','U/A','10234567','24-aug-23');

        1 row created.

        SQL> insert into industryhit values(1021,'RDX','action','U/A','12234467','25-aug-23');
```

- **Retrieve the titles of all movies and industry hits which are in the action thriller genre.**

```
        SQL> select title from industryhit where genre in 'action thriller';

        TITLE
```

```
--------------------------------------
Master
Ramachandran boss
```

- **Retrieve the titles of all movies including industry hits.**

```
SQL> select title from industryhit union select title from movies;

TITLE
--------------------------------------
Anjaan
Master
RDX
Ramachandran boss
Raone
Rorschach
jailer
king of kotha
minnal murali
njan prakashan
oppenheimer
voice of sathyanathan
```

- **Retrieve the titles of all movies which are not industry hits.**

```
SQL> select title from industryhit where title not in (select title from movies);

TITLE

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

RDX

Ramachandran boss

king of kotha
```

<u>**Activity 3.6**</u>

<u>**Description : Illustration of Group By having clause**</u>

- **For all genres, display genre type and the sum of all Gross for each genre. Name the derived column SUM_COLL.**

```
SQL> select genre ,sum(gross) sum_coll from industryhit group by genre;

GENRE                                SUM_COLL
-------------------------------------- ----------
super hero                          23494374
biographical                         23494374
gangster                           10234567
action                            30579841
action thriller                      14222976
horror                            19383748
```

- **For all genres, display the genre type and the number of titles. Name the derived column TITLE_COUNT.**

```
SQL> select genre ,count(title) title_count from industryhit group by genre;

GENRE                                TITLE_COUNT
--------------------------------------- -----------
super hero                                 1
biographical                                1
gangster                                  1
action                                   2
action thriller                             2
horror                                   1

6 rows selected.
```

- **Display the genres which have more than 3 titles.**

```
SQL> select genre ,count(title) title_count from industryhit group by genre having
count(title) > 3;

 no rows selected
```

- **Retrieve the total number of movies released in each year, only for years with at least 5 movies.**

```
SQL> select extract(year from releasedate)year,count(m_title)from movies group by
     extract(year from releasedate) having count(m_title)>5;


 no rows selected
```

- **List the certificates along with the number of movies for each certificate, but**

only show certificates with more than 3 movies

```
SQL> select certificate,count(m_title) from movies group by certificate having count(m_title)>3;
```

```
CERTIFICATE              COUNT(M_TITLE)
-------------------          --------------
U/A                                9
```

- **Show the total gross earnings for each certificate, but only for certificates with total gross greater than $1 million.**

```
SQL> select certificate,sum(gross) from movies group by certificate having sum(gross)>1000000;
```

```
CERTIFICATE            SUM(GROSS)
--------------------        ----------
U/A                    182832100
U                       10950000
```

- **List the release years with the highest number of movies and the corresponding movie count, limited to the top 3 years.**

```
SQL> select to_char(releasedate,'yyyy'),count(m_title) from movies group by to_char(releasedate,'yyyy') order by count(m_title) desc;
```

```
TO_C            COUNT(M_TITLE)
----               --------------
2023                3
2014                1
2018                1
2021                1
```

```
2020                    1

2012                    1

1997                    1

2022                    1
```

8 rows selected.

Activity 3.7

Description : Sub queries

- **Retrieve the titles and runtime of movies with the highest Metascore.**

SQL> select m_title,runtime from movies where metascore=(select max(metascore)from movies);

```
M_TITLE                                    RUNTIME
----------------------------------------   ----------
njan prakashan                               2.15
```

- **List the titles of movies with a Gross amount greater than the average Gross amount of all movies.**

SQL> select m_title from movies where gross>(select avg(gross) from movies);

```
M_TITLE
----------------------------------------
Anjaan
Master
Rorschach
Raone
minnal murali
titanic
```

```
oppenheimer


7 rows selected.
```

- **Retrieve the titles and descriptions of movies with a Metascore lower than the average Metascore.**

```
SQL> select m_title,description from movies where metascore <(select avg(metascore)from movies);


M_TITLE                                           DESCRIPTION
------------------------------    ------------------------------------------------------------------------------------------------
Raone                              Shekhar, a gaming programmer,develops a game called ra one
minnal murali                        jaison a young tailor gains superpowers after being struck
                                            by lightning
titanic                            incorporating both historical and fictionalized aspects
voice of sathyanathan         A mans life becomes increasingly complicated after his neighbour is
                                     injured in a dispute over a fence
```

- **List the movie titles and their IMDb ratings for movies released in the year with the highest average IMDb rating.**

```
SQL> select m_title,imdb_rating from movies where extract(year from releasedate)=(select extract(year from releasedate) from  movies where imdb_rating=(select max(imdb_rating) from movies));


M_TITLE                                    IMDB_RATING
---------------------------------------    -----------
titanic                                       7.9
```

- **Retrieve the movie titles and their IMDb ratings for movies that have a Metascore greater than twice their IMDb rating.**

```
SQL> select m_title,imdb_rating from movies where metascore>2 * imdb_rating;
```

```
M_TITLE                                         IMDB_RATING
----------------------------------------        -----------
Anjaan                                               4.1
Master                                              4.5
Rorschach                                            4.1
Raone                                                4.2
jailer                                              7.7
minnal murali                                        6
njan prakashan                                       7.7
titanic                                              7.9
oppenheimer                                          7.8
voice of sathyanathan                                7.4

10 rows selected.
```

- **Find the title and gross amount of the top 3 highest-grossing movies.**

```
SQL> select m_title,gross from(select m_title,gross,rank() over (order by gross desc)as ranking from movies) where ranking =3;
```

```
M_TITLE                                          GROSS
----------------------------------------        ----------
titanic                                          21743937
```

- **Calculate the total number of votes received by movies released in the year 2022.**

```
SQL> select m_title, sum(votes) from movies m1 where to_char(releasedate,'yyyy')=(select to_char(releasedate,'yyyy')from movies m2 where to_char(releasedate,'yyyy')=2022 and m1.m_title=m2.m_title)group by m_title;
```

```
M_TITLE                                     SUM(VOTES)
----------------------------------------       ----------
Rorschach                                        90
```

- **List the titles and certificate ratings of movies that have an IMDb rating below the average IMDb rating.**

```
SQL>  select m_title,certificate from movies where imdb_rating<(select avg(imdb_rating) from movies);
```

```
M_TITLE                                    CERTIFICATE
----------------------------------------   --------------------
Anjaan                                         U/A
Master                                         U/A
Rorschach                                      U/A
Raone                                          U/A
minnal murali                                  U/A
```