



*A project report on*

# **DATABASE OF MOVIES**

*Submitted towards jth component of the course*

## **Database Management Systems – ITE1003**

*handled by*

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*submitted by*

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## **PROBLEM DESCRIPTION**

Movies are the 21<sup>st</sup> century's prime form of entertainment. Everyday more and more movies are made, and the ever-growing collection of movies grows even more. At this point, we need a database to store all the data pertaining to the movie, the actors, all the personnel working on the movie. This is why we created this database containing all the movies of MCU.

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## Chapter 1 ANALYSIS 1.1 ENTITIES & ATTRIBUTES

### Movie:

movie\_id name  
release\_date  
runtime  
MPAA\_rating  
Imdb\_rating  
Imdb\_no\_votes

### Actor:

actor\_id  
name  
DOB  
Place\_of\_Birth

### Director:

Director\_id  
name  
DOB  
Place\_of\_Birth

### Writer:

writer\_id name

### Production Company:

production\_id  
name  
Headquarters

### Box Office:

movie\_id  
Budget  
Opening\_Weekend  
Domestic  
Worldwide

## 1.2 RELATIONS

Actor acts in Movie: movie\_id, actor\_id, character

Director directs Movie: movie\_id, director\_id

Writer writes Movie: movie\_id, writer\_id

Production Company produces Movie: movie\_id, production\_id

### 1.3 CARDINALITY

Actor: Movie- m:n

Director: Movie- m:n

Writer: Movie- m:n

Production Company: Movie- m:n

Box Office-Movie: 1:1

### 1.4 PARTICIPATION

Actor: Movie- Partial

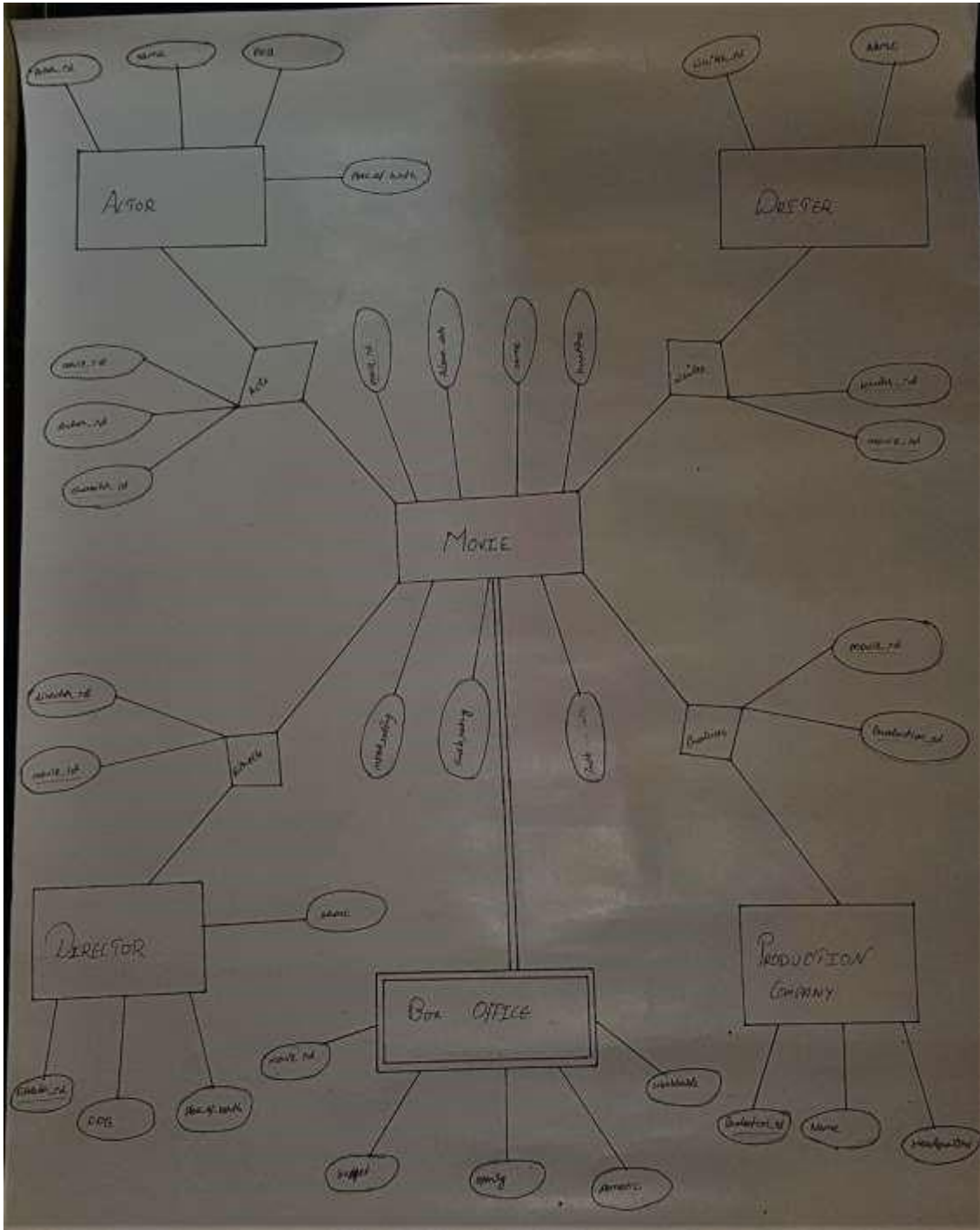
Director: Movie- Partial

Writer: Movie- Partial

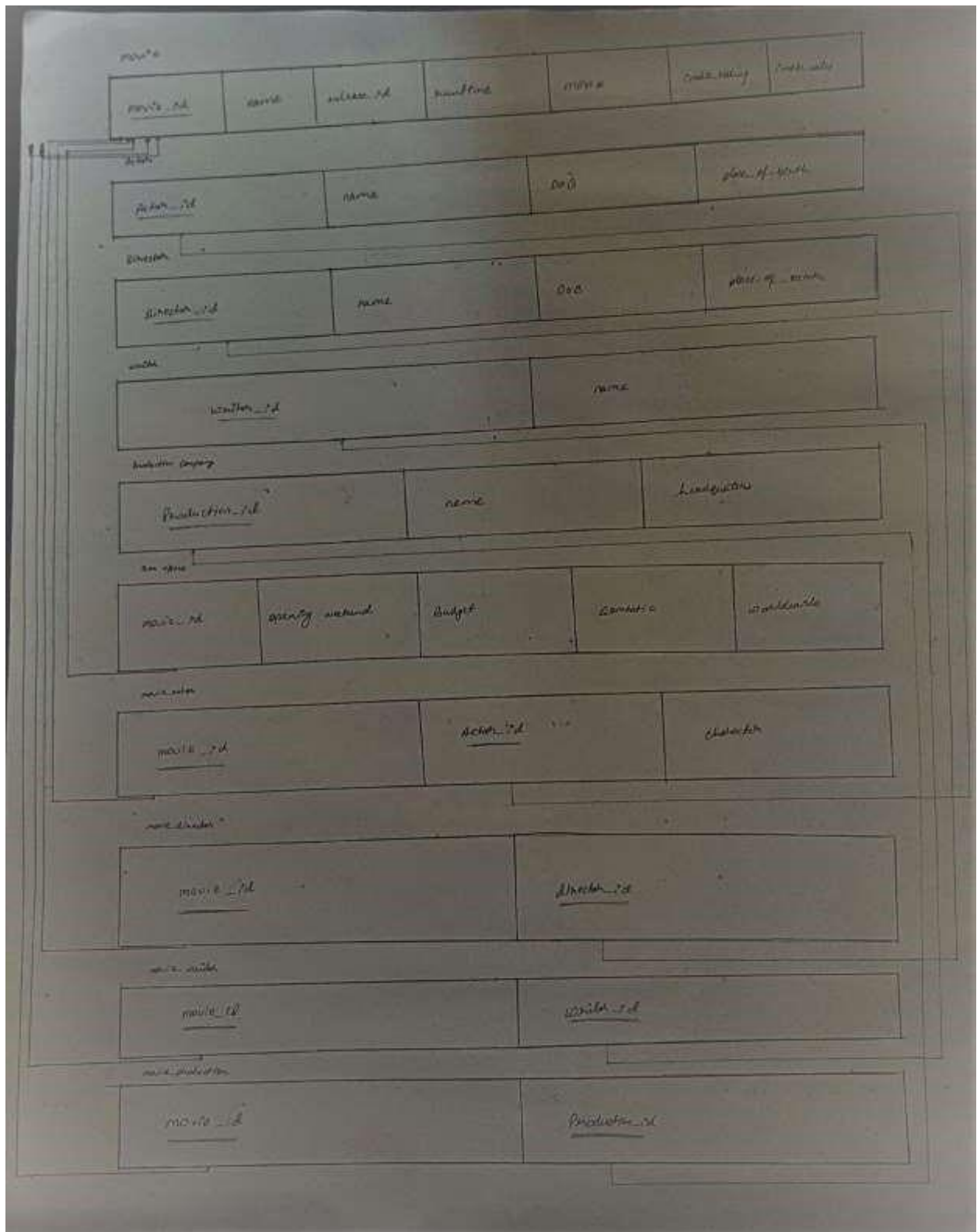
Production Company: Movie- Partial

Box Office-Movie: Total

## Chapter 2 DESIGN 2.1 Entity Relationship Diagram



## 2.2 Mapping of ER to table





### Chapter 3 IMPLEMENTATION 3.1 CREATE WITH CONSTRAINTS:

```
create table Movie( movie_id varchar2(9) check
(movie_id like 'tt%'), name varchar2(50) not null,
release_date date, runtime number(3),
MPAA_Rating varchar2(10), imdb_rating float,
imdb_no_votes number(8), primary
key(movie_id));
```

```
create table Actor( actor_id varchar2(9) check
(actor_id like 'nm%'), name varchar2(50) not
null,
DOB date,
Place_of_Birth varchar2(100), primary
key(actor_id));
```

```
create table Director(
director_id varchar2(9) check (director_id like 'nm%'),
name varchar2(50) not null, DOB date,
Place_of_Birth varchar2(100), primary
key(director_id));
```

```
create table Writer( writer_id varchar2(9) check
(writer_id like 'nm%'), name varchar2(50) not null,
primary key(writer_id));
```

```
create table Production_Co( production_id varchar2(9)
check (production_id like 'co%'), name varchar2(50) not null,
Headquaters varchar2(100), primary key(production_id));
```

```
create table Boxoffice(
movie_id varchar2(9) unique,
Budget number(10),
Opening_weekend number(10),
Domestic number(10), Worldwide number(10),
foreign key(movie_id) references movie(movie_id));
```

```
create table Movie_Actor( movie_id varchar2(9),
actor_id varchar2(9), character varchar2(50),
primary key(movie_id,actor_id), foreign key
```

(movie\_id) references movie(movie\_id), foreign key

(actor\_id) references actor(actor\_id));

create table Movie\_Director( movie\_id varchar2(9),

director\_id varchar2(9), primary

key(movie\_id,director\_id), foreign key (movie\_id)

references movie(movie\_id), foreign key (director\_id)

references director(director\_id)); create table

Movie\_writer( movie\_id varchar2(9), writer\_id

varchar2(9), primary key(movie\_id,writer\_id), foreign key

(movie\_id) references movie(movie\_id), foreign key

(writer\_id) references writer(writer\_id));

create table Movie\_production( movie\_id varchar2(9), production\_id

varchar2(9), primary key(movie\_id,production\_id), foreign key

(movie\_id) references movie(movie\_id), foreign key (production\_id)

references production\_co(production\_id));

### 3.2 INSERT:

```
insert into writer values('nm1318843','Mark Fergus');
insert into writer values('nm1319757','Hawk Ostby');
insert into writer values('nm1436466','Art Marcum');
insert into writer values('nm0391344','Matt Holloway');
insert into writer values('nm0857620','Justin Theroux');
insert into writer values('nm1510800','Drew Pearce');
insert into writer values('nm0000948','Shane Black');
insert into writer values('nm1005420','Ashley Miller');
insert into writer values('nm0826714','Zack Stentz');
insert into writer values('nm0668309','Don Payne');
insert into writer values('nm1236653','Christopher L.
Yost');          insert          into          writer
values('nm1321655','Christopher Markus'); insert into
writer values('nm1321656','Stephen McFeely'); insert
into writer values('nm0942367','Edgar Wright'); insert
into writer values('nm0180428','Joe Cornish'); insert
into writer values('nm0570912','Adam McKay'); insert
into writer values('nm0748620','Paul Rudd'); insert into
writer values('nm0672015','Zak Penn'); insert into
writer values('nm0326246','Jonathan Goldstein'); insert
```

into writer values('nm0197855','John Francis Daley');  
insert into writer values('nm1218281','Jon Watts');  
insert into writer values('nm1755986','Christopher  
Ford'); insert into writer values('nm0571344','Chris  
McKenna'); insert into writer values('nm1273099','Erik  
Sommers'); insert into writer values('nm0923736','Joss  
Whedon');  
insert into writer values('nm3069408','Eric Pearson');  
insert into writer values('nm1219736','Craig Kyle'); insert  
into writer values('nm3029372','Andrew Barrer'); insert  
into writer values('nm3123612','Jon Spaihts'); insert into  
writer values('nm0220600','Scott Derrickson'); insert into  
writer values('nm1803036','C. Robert Cargill'); insert into  
writer values('nm0348181','James Gunn'); insert into  
writer values('nm2270979','Nicole Perlman'); insert into  
writer values('nm3363032','Ryan Coogler'); insert into  
writer values('nm1963288','Joe Robert Cole');

insert into actor values('nm0000375','Robert Downey Jr','April-4-1965','Manhattan New York City  
New York USA'); insert into actor values('nm0005024','Terrence Howard','March-11-  
1969','Chicago Illinois USA');

insert into actor values('nm0000313','Jeff Bridges','December-4-1949','Los Angeles, California, USA');

insert into actor values('nm0000569','Gwyneth Paltrow','September-27-1972','Los Angeles, California, USA');

insert into actor values('nm0004753','Leslie Bibb','November-17-1974','Bismarck, North Dakota, USA'); insert into actor values('nm0869467','Shaun Toub','April-6-1963','Tehran, Iran');

insert into actor values('nm0846687','Faran Tahir','February-16-1964','Los Angeles, California, U.S.');

insert into actor values('nm0163988','Clark Gregg','02-Apr-1962','Boston, Massachusetts, U.S.');

insert into actor values('nm0269463','Jon Favreau','October-19-1966','Queens, New York City, New York, USA');

insert into actor values('nm0001570','Edward Norton','August-18-1969','Boston, Massachusetts, USA'); insert into actor values('nm0000239','Liv Tyler','July-1-1977','New York City, New York, USA'); insert into actor values('nm0000619','Tim Roth','May-14-1961','London, England, UK');

insert into actor values('nm0000458','William Hurt','March-20-1950','Washington, District of Columbia, USA');

insert into actor values('nm0625789','Tim Blake Nelson','May-11-1964','Tulsa, Oklahoma, USA');

insert into actor values('nm0000332','Don Cheadle','November-29-1964','Kansas City, Missouri, USA');

insert into actor values('nm0424060','Scarlett Johansson','November-22 -1984','New York City, New York, USA');

insert into actor values('nm0005377','Sam Rockwell','November-5-1968','Daly City, California, USA');

insert into actor values('nm0000620','Mickey Rourke','September-16-1952','Schenectady, New York, USA');

insert into actor values('nm0000168','Samuel L Jackson','December-21-1948','Washington, District of Columbia, USA');

insert into actor values('nm0805476','John Slattery','August-13-1962','Boston, Massachusetts, USA');

insert into actor values('nm1165110','Chris Hemsworth','August-11-1983','Melbourne, Victoria, Australia');

insert into actor values('nm0000204','Natalie Portman','June-9-1981','Jerusalem, Israel');

insert into actor values('nm1089991','Tom Hiddleston','February-9-1981','Westminster, London, England, UK');

insert into actor values('nm0000164','Anthony Hopkins','December-31-1937','Margam, Port Talbot, West Glamorgan, Wales, UK');

insert into actor values('nm0001745','Stellan Skarsgård','June-13-1951','Gothenburg, Västra Götalands län, Sweden');

insert into actor values('nm0993507','Kat Dennings','June-13-1986','Philadelphia, Pennsylvania, USA');

insert into actor values('nm0252961','Idris Elba','September-6-1972','Hackney, London, England, UK');

insert into actor values('nm1526352','Jaimie Alexander','March-12-1984','Greenville, South

Carolina, USA'); insert into actor values('nm0262635','Chris Evans','June-13-1981','Boston,

Massachusetts, USA'); insert into actor values('nm2017943','Hayley Atwell','April-5-

1982','London, England, UK'); insert into actor values('nm1659221','Sebastian Stan','August-13-

1982','Constanta, Romania');

insert into actor values('nm0000169','Tommy Lee Jones','September-15-1946','San Saba, Texas, USA'); insert into actor values('nm0915989','Hugo Weaving','April-4-1960','Ibadan, Nigeria');

insert into actor values('nm1002641','Dominic Cooper','June-2-1978','Greenwich, London, England, UK');

insert into actor values('nm0035514','Richard Armitage','August-22-1971','Leicester, Leicestershire, England, UK');

insert into actor values('nm0001804','Stanley Tucci','November-11-1960','Peekskill, New York, USA');

insert into actor values('nm0429363','Toby Jones','September-7-1966','Hammersmith, London, England, UK');

insert into actor values('nm0719637','Jeremy Renner','January-7-1971','Modesto, California, USA');

insert into actor values('nm1130627','Cobie Smulders','April-3-1982','Vancouver, British Columbia, Canada');

insert into actor values('nm0001602','Guy Pearce','October-5-1967','Ely, Cambridgeshire, England, UK'); insert into actor values('nm0356017','Rebecca Hall','May-3-1982','London, England, UK');

insert into actor values('nm0001172','Christopher Eccleston','February-16-1964','Salford, Lancashire, England, UK');

insert into actor values('nm0000602','Robert Redford ','August-18-1936','Santa Monica, California, USA');

insert into actor values('nm1107001','Anthony Mackie','September-23-1978','New Orleans, Louisiana, USA'); insert into actor values('nm0695435','Chris Pratt','June-21-1979','Virginia, Minnesota, USA'); insert into actor values('nm0757855','Zoe Saldana','June-19-1978','Passaic, New Jersey, USA');



insert into actor values('nm1176985','Dave Bautista','January-18-1969',' Washington, District of Columbia, USA');

insert into actor values('nm0004874','Vin Diesel','July-18-1967','Alameda County, California, USA');

insert into actor values('nm0177896','Bradley Cooper','January-5-1975','Philadelphia, Pennsylvania, USA');

insert into actor values('nm1195855','Lee Pace','March-25-1979','Chickasha, Oklahoma, USA');

insert into actor values('nm0740264','Michael Rooker','April-6-1955','Jasper, Alabama, USA');

insert into actor values('nm2394794','Karen Gillan','November-28-1987','Inverness, Scotland, UK');

insert into actor values('nm0749263','Mark Ruffalo','November-22-1967','Kenosha, Wisconsin, USA');

insert into actor values('nm0000652','James Spader','February-7-1960','Boston, Massachusetts, USA');

insert into actor values('nm1093951','Aaron Taylor-Johnson','June-13-1990','High Wycombe, Buckinghamshire, England, UK');

insert into actor values('nm0647634','Elizabeth Olsen','February-16-1989','Sherman Oaks, California, USA');

insert into actor values('nm0079273','Paul Bettany','May-27-1971','Harlesden, London, England, UK'); insert into actor values('nm0748620','Paul Rudd','April-6-1969','Passaic, New Jersey, USA');

insert into actor values('nm0000140','Michael Douglas','September-25-1944','New Brunswick, New Jersey, USA');

insert into actor values('nm1431940','Evangeline Lilly','August-3-1979','Fort Saskatchewan, Alberta, Canada');

insert into actor values('nm1015684','Corey Stoll','March-14-1976','New York City, New York, USA');

insert into actor values('nm0134072','Bobby Cannavale','May-3-1970','Union City, New Jersey, USA'); insert into actor values('nm0339460','Judy Greer','July-20-1975','Detroit, Michigan, USA'); insert into actor values('nm5338858','Abby Ryder Fortson','March-14-2008','Burbank, California'); insert into actor values('nm0671567','Michael Peña','January-13-1976','Chicago, Illinois, USA')

insert into actor values('nm1569276','Chadwick Boseman','November-29-1977','Anderson, South Carolina, USA');

insert into actor values('nm4043618','Tom Holland','June-1-1996','Kingston upon Thames, England, UK');

insert into actor values('nm0117709','Daniel Brühl','June-16-1978','Barcelona, Barcelona, Catalonia, Spain');

insert into actor values('nm0342029','Frank Grillo','June-8-1965','New York City, New York, USA');

insert into actor values('nm1212722','Benedict Cumberbatch','July-19-1976','Hammersmith, London, England, UK');

insert into actor values('nm0252230','Chiwetel Ejiofor','July-10-1977','Forest Gate, London, England, UK');

insert into actor values('nm1046097','Rachel McAdams','November-17-1978','London, Ontario, Canada'); insert into actor values('nm0938950','Benedict Wong','3-July-1971','Manchester, England, UK');

insert into actor values('nm0586568','Mads Mikkelsen','November-22-1965','Osterbro, Copenhagen, Denmark'); insert into actor values('nm0842770','Tilda Swinton','November-5-1960','London, England, UK');

insert into actor values('nm2962353','Pom Klementieff','May-3-1986','Quebec City, Quebec, Canada');

insert into actor values('nm0000230','Sylvester Stallone','July-6-1946','New York City, New York, USA');

insert into actor values('nm0000621','Kurt Russell','March-17-1951','Springfield, Massachusetts, USA');

insert into actor values('nm0000474','Michael Keaton','September-5-1951','Coraopolis, Pennsylvania, USA');

insert into actor values('nm0000673','Marisa Tomei','December-4-1964','Brooklyn, New York City, New York, USA'); insert into actor values('nm8188622','Jacob Batalon','June-6-1996','Honolulu, Hawaii, USA');

insert into actor values('nm0000949','Cate Blanchett','May-14-1969','Melbourne, Victoria, Australia');

insert into actor values('nm0000156','Jeff Goldblum','October-22-1952','Pittsburgh, Pennsylvania, USA');

insert into actor values('nm1935086','Tessa Thompson','October-3-1983','Los Angeles, California, USA'); insert into actor values('nm0881631','Karl Urban','June-7-1972','Wellington, New Zealand');

insert into actor values('nm0430107','Michael B. Jordan','February -9-1987','Santa Ana, California, USA');

insert into actor values('nm2143282','Lupita Nyong'o','March-1-1983','Mexico City, Distrito Federal, Mexico'); insert into actor values('nm1775091','Danai Gurira','February-14-1978','Grinnell, Iowa, USA');

insert into actor values('nm0293509','Martin Freeman','September-8-1971','Aldershot, Hampshire, England, UK');

insert into actor values('nm2257207','Daniel Kaluuya','February-24-1989','London, England, UK'); insert into actor values('nm4004793','Letitia Wright','October-31-1993 in Georgetown, Guyana'); insert into actor values('nm6328300','Winston Duke','November-15-1986','Argyle, Trinidad and Tobago');

insert into actor values('nm0227759','Peter Dinklage','June-11-1969','Morristown, New Jersey, USA');

insert into actor values('nm0001125','Benicio Del Toro','February-19-1967','San Germán, Puerto Rico');

insert into actor values('nm0000982','Josh Brolin','February-12-1968','Santa Monica, California, USA');

insert into actor values('nm2534167','Tom Vaughan-Lawlor','1-Jan-1977','Dundrum, Dublin, Ireland');

insert into actor values('nm2739851','Ross Marquand','August-22-1981','Fort Collins, Colorado, USA');

insert into actor values('nm0498278','Stan Lee','28-Dec-1922','Manhattan, New York City, New York, USA');

insert into Boxoffice values('tt0371746','140000000','98618668','318412101','585174222'); insert into Boxoffice values('tt0800080','150000000','55414050','134518390','263427551'); insert into Boxoffice values('tt1228705','200000000','128122480','312433331','623933331'); insert into Boxoffice values('tt0800369','150000000','65723338','181030624','449326618'); insert into Boxoffice values('tt0458339','140000000','65058524','176654505','370549774'); insert into Boxoffice values('tt0848228','220000000','207438708','623357910','1519557910'); insert into Boxoffice values('tt1300854','200000000','174144585','409013994','1215423994');

Boxoffice values('tt1981115','170000000','85737841','206362140','644783140'); insert into  
Boxoffice values('tt1843866','170000000','95023721','259766572','714766572'); insert into  
Boxoffice values('tt2015381','170000000','94320883','333176600','774176600'); insert into  
Boxoffice values('tt2395427','250000000','191271109','459005868','1405413868'); insert into  
Boxoffice values('tt0478970','130000000','57225526','180202163','519445163'); insert into  
Boxoffice values('tt3498820','250000000','179139142','408084349','1153304495'); insert into  
Boxoffice values('tt1211837','165000000','85058311','232641920','677718395'); insert into  
Boxoffice values('tt3896198','200000000','146510104','389813101','863756051'); insert into  
Boxoffice values('tt2250912','175000000','117027503','334201140','880166924'); insert into  
Boxoffice values('tt3501632','180000000','122744989','315058289','853977126'); insert into  
Boxoffice values('tt1825683','200000000','202003951','700059566','1347071259'); insert into  
Boxoffice values('tt4154756','321000000','257698183','678815482','2046470714'); insert into  
Boxoffice values('tt5095030','162000000','75812205','216236826','465879576');

insert into director values('nm0269463','Jon Favreau','19-Oct-1966','Queens, New York City,  
New York, USA'); insert into director values('nm0504642','Louis Leterrier','17-Jun-  
1973','Paris, France');

insert into director values('nm0000110','Kenneth Branagh','10-Dec-1960','Belfast, Northern  
Ireland, UK');

insert into director values('nm0220600','Scott Derrickson','16-Jul-1966','Denver, Colorado,  
USA');

insert into director values('nm3363032','Ryan Coogler','23-May-1986','Oakland, California, USA'); insert into director values('nm0002653','Joe Johnston','13-May-1950','Austin, Texas, USA');

insert into director values('nm0169806','Taika Waititi','16-Aug-1975','Wellington, New Zealand');

insert into director values('nm0715636','Peyton Reed','03-Jul-1964','Raleigh, North Carolina, USA'); insert into director values('nm1218281','Jon Watts','28-Jun-1981','Fountain, Colorado, USA');

insert into director values('nm0923736','Joss Whedon','23-Jun-1964','New York City, New York, USA');

insert into director values('nm0000948','Shane Black','16-Dec-1961','Pittsburgh, Pennsylvania, USA'); insert into director values('nm0348181','James Gunn','05-Aug-1966','St. Louis, Missouri, USA'); insert into director values('nm0751577','Anthony Russo','03-Feb-1970','Cleveland, Ohio, USA');

insert into director values('nm0851930','Alan Taylor','25-Jun-1965','Brooklyn, New York, United States'); insert into director values('nm0751648','Joe Russo','08-Jul-1971','Cleveland, Ohio, USA');

insert into movie values('tt0371746','Iron Man','02-May-2008','126','PG-13','7.9','812600');

insert into movie values('tt0800080','The Incredible Hulk','13-Jun-2008','112','PG-

13','6.8','378848'); insert into movie values('tt1228705','Iron Man 2','07-May-2008','124','PG-13','7.0','615906'); insert into movie values('tt0800369','Thor','06-May-2011','115','PG-13','7.0','638762');

insert into movie values('tt0458339','Captain America: The First Avenger','22-Jul-2011','124','PG-13','6.9','617791'); insert into movie values('tt0848228','The Avengers','04-May-2012','143','PG-13','8.1','1126946'); insert into movie values('tt1300854','Iron Man 3','03-May-2013','130','PG-13','7.2','651230');

insert into movie values('tt1981115','Thor: The Dark World','08-Nov-2013','112','PG-13','7.0','503356');

insert into movie values('tt1843866','Captain America: The Winter Soldier','04-Apr-2014','136','PG-13','7.3','617565');

insert into movie values('tt2015381','Guardians of the Galaxy','01-Aug-2014','121','PG-13','8.1','876793');

insert into movie values('tt2395427','Avengers: Age of Ultron','01-May-2015','141','PG-13','7.4','606677'); insert into movie values('tt0478970','Ant-Man','17-Jul-2015','117','PG-13','7.3','451515');

insert into movie values('tt3498820','Captain America: Civil War','06-May-2016','147','PG-13','7.8','525114'); insert into movie values('tt1211837','Doctor Strange','04-Nov-2016','115','PG-13','7.5','451144');

insert into movie values('tt3896198','Guardians of the Galaxy Vol. 2','05-May-2017','136','PG-13','7.7','413704');

insert into movie values('tt2250912','Spider-Man: Homecoming','07-Jul-2017','136','PG-

13','7.5','360807'); insert into movie values('tt3501632','Thor: Ragnarok','03-Nov-2017','130','PG-13','7.9','390666'); insert into movie values('tt1825683','Black Panther','16-Feb-2018','134','PG-13','7.4','396219'); insert into movie values('tt4154756','Avengers: Infinity War','27-Apr-2018','149','PG-13','8.6','496559');

insert into movie values('tt5095030','Ant-Man and the Wasp ','06-Jul-2018','118','PG13','7.3','107816');

insert into Production\_Co values('co0044704','Moonlighting Films','Cape Town, South Africa');

insert into Production\_Co values('co0186190','Gary Sanchez Productions','Los Angeles, California, United States');

insert into Production\_Co values('co0050868','Columbia Pictures Corporation','Culver City, California, United States');

insert into Production\_Co values('co0053177','Studio Babelsberg','August-Bebel-Str. 26-35, 14482 Potsdam, Germany');

insert into Production\_Co values('co0008970','Walt Disney Pictures','Walt Disney Studios 500 S. Buena Vista Street Burbank, California, United States');

insert into Production\_Co values('co0338904','DMG Entertainment','Beverly Hills, CA, United States');

insert into Production\_Co values('co0023400','Paramount Pictures','5555 Melrose Avenue, Hollywood, California, United States'); insert into Production\_Co values('co0047120','Marvel Entertainment','New York City'); insert into Production\_Co values('co0140084','Moving Pictures Company','Soho, London');



insert into Production\_Co values('co0051941','Marvel Studios','500 S. Buena Vista Street,  
Burbank, California, United States');

insert into Production\_Co values('co0005073','Universal Pictures','10 Universal City Plaza,  
Universal City, California, United States');

insert into movie\_actor values('tt0371746','nm0000375','Tony Stark'); insert into

movie\_actor values('tt0371746','nm0005024','Rhodey'); insert into movie\_actor

values('tt0371746','nm0000313','Obadiah Stane'); insert into movie\_actor

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values('tt0371746','nm0846687','Raza'); insert into movie\_actor

values('tt0371746','nm0163988','Agent Coulson'); insert into movie\_actor

values('tt0371746','nm0269463','Hogan'); insert into movie\_actor

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values('tt0800080','nm0000239','Betty Ross'); insert into movie\_actor

values('tt0800080','nm0000619','Emil Blonsky'); insert into movie\_actor

values('tt0800080','nm0000458','General Thunderbolt Ross'); insert into movie\_actor

values('tt0800080','nm0625789','Samuel Sterns'); insert into movie\_actor

values('tt0800080','nm0000375','Tony Stark'); insert into movie\_actor

values('tt0800080','nm0000569','Pepper Potts'); insert into movie\_actor

values('tt0800080','nm0000332','Lt. Col. James Rhodey Rhodes'); insert into

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movie_actor values('tt0800080','nm0424060','Natasha Romanoff'); insert into
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values('tt0800080','nm0000620','Ivan Vanko');

insert into movie_actor values('tt0800080','nm0000168','Nick Fury'); insert into
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values('tt0800369','nm0000204','Jane Foster'); insert into movie_actor
values('tt0800369','nm1089991','Loki'); insert into movie_actor
values('tt0800369','nm0000164','Odin'); insert into movie_actor
values('tt0800369','nm0001745','Erik Selvig'); insert into movie_actor
values('tt0800369','nm0993507','Darcy Lewis'); insert into movie_actor
values('tt0800369','nm0163988','Agent Coulson'); insert into movie_actor
values('tt0800369','nm0252961','Heimdall'); insert into movie_actor
values('tt0800369','nm1526352','Sif'); insert into movie_actor
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values('tt0458339','nm2017943','Peggy Carter'); insert into movie_actor
values('tt0458339','nm1659221','James Buchanan Bucky Barnes'); insert into movie_actor
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values('tt0458339','nm0915989','Red Skull'); insert into movie_actor

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values('tt0458339','nm0035514','Heinz Kruger'); insert into movie\_actor  
values('tt0458339','nm0001804','Dr.Abraham Erskine');  
  
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insert into movie\_actor values('tt2015381','nm0177896','Rocket'); insert into  
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 insert into movie\_actor values('tt1211837','nm1212722','Dr. Stephen Strange');  
 insert into movie\_actor values('tt1211837','nm0252230','Mordo'); insert into  
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 values('tt2250912','nm0000474','Adrian Toomes'); insert into movie\_actor

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values('tt2250912','nm0269463','Happy Hogan');

insert into movie_actor values('tt2250912','nm0000569','Pepper Potts');
insert into movie_actor values('tt2250912','nm8188622','Ned'); insert into
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into movie_actor values('tt1825683','nm2143282','Nakia'); insert into
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movie\_writer values('tt0800080','nm0672015'); insert into  
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movie\_writer values('tt2250912','nm1755986'); insert into  
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movie\_writer values('tt1825683','nm1963288'); insert into  
movie\_writer values('tt2395427','nm0923736');

### 3.3 ALTER:

Alter table writer add (DOB date);

```
SQL> Alter table writer add (DOB date);  
Table altered.
```

### 3.4 DELETE:

Drop table movie\_actor;

```
SQL> Drop table movie_actor;  
Table dropped.
```

### 3.5 UPDATE:

Alter table writer modify (DOB varchar2(20));

```
SQL> Alter table writer modify (DOB varchar2(20));  
Table altered.
```

### 3.6 SELECT...WHERE:

Select name from movie where imdb\_rating>8;

```
SQL> Select name from movie where imdb_rating>8;  
  
NAME  
-----  
The Avengers  
Guardians of the Galaxy  
Avengers: Infinity War
```

### 3.7 ORDER BY:

Select name,imdb\_rating from movie order by imdb\_rating DESC;

```
SQL> Select name,imdb_rating from movie order by imdb_rating DESC;
```

| NAME                           | IMDB_RATING |
|--------------------------------|-------------|
| Avengers: Infinity War         | 8.6         |
| Guardians of the Galaxy        | 8.1         |
| The Avengers                   | 8.1         |
| Iron Man                       | 7.9         |
| Thor: Ragnarok                 | 7.9         |
| Captain America: Civil War     | 7.8         |
| Guardians of the Galaxy Vol. 2 | 7.7         |
| Doctor Strange                 | 7.5         |
| Spider-Man: Homecoming         | 7.5         |
| Avengers: Age of Ultron        | 7.4         |
| Black Panther                  | 7.4         |

| NAME                                | IMDB_RATING |
|-------------------------------------|-------------|
| Ant-Man                             | 7.3         |
| Captain America: The Winter Soldier | 7.3         |
| Ant-Man and the Wasp                | 7.3         |
| Iron Man 3                          | 7.2         |
| Thor                                | 7           |
| Iron Man 2                          | 7           |
| Thor: The Dark World                | 7           |
| Captain America: The First Avenger  | 6.9         |
| The Incredible Hulk                 | 6.8         |

### 3.8 PATTERN MATCHING:

Select name from actor where place\_of\_birth like '%Chicago%';

```
SQL> Select name from actor where place_of_birth like '%Chicago%';
```

| NAME            |
|-----------------|
| Terrence Howard |
| Michael Peña    |

### 3.9 AGGREGATE FUNCTIONS:

Select avg(worldwide) from BoxOffice;

```
SQL> Select avg(worldwide) from BoxOffice;

AVG(WORLDWIDE)
-----
      868716164
```

Select max(imdb\_rating) from movie;

```
SQL> Select max(imdb_rating) from movie;

MAX(IMDB_RATING)
-----
              8.6
```

Select count(actor\_id) from movie\_actor where actor\_id= 'nm0000375';

```
SQL> Select count(actor_id) from movie_actor where actor_id= 'nm0000375';

COUNT(ACTOR_ID)
-----
                8
```

Select count(place\_of\_birth) from actor where place\_of\_birth like '%Chicago%';

```
SQL> Select count(place_of_birth) from actor where place_of_birth like '%Chicago%';

COUNT(PLACE_OF_BIRTH)
-----
                2
```

Select min(imdb\_no\_votes) from movie;

```
SQL> Select min(imdb_no_votes) from movie;

MIN(IMDB_NO_VOTES)
-----
          107816
```

### 3.10 DATE FUNCTIONS:

Select sysdate from dual;

```
SQL> Select sysdate from dual;

SYSDATE
-----
01-NOV-18
```

Select add\_months(sysdate, -1) as prev\_month , sysdate, add\_months (sysdate, 1) as next\_month from dual;

```
SQL> Select add_months(sysdate, -1) as prev_month , sysdate, add_months (sysdate, 1) as next_month from dual;

PREV_MONT SYSDATE    NEXT_MONT
-----
01-OCT-18 01-NOV-18 01-DEC-18
```

select sysdate + (5/1440) from dual;

```
SQL> select sysdate + (5/1440) from dual;

SYSDATE+(
-----
01-NOV-18
```

select sysdate - 1 from dual;

```
SQL> select sysdate - 1 from dual;

SYSDATE-1
-----
31-OCT-18
```

SELECT TRUNC(TO\_DATE('27-OCT-92'), 'year') from dual;

```
SQL> SELECT TRUNC(TO_DATE('27-OCT-92'), 'year') from dual;

TRUNC(TO_
-----
01-JAN-92
```

### 3.11 NUMERIC FUNCTIONS:

Select name, ceil(imdb\_rating) from movie;

```
SQL> Select name, ceil(imdb_rating) from movie;
```

| NAME                                | CEIL(IMDB_RATING) |
|-------------------------------------|-------------------|
| The Incredible Hulk                 | 7                 |
| Iron Man 2                          | 7                 |
| Thor                                | 7                 |
| Captain America: The First Avenger  | 7                 |
| The Avengers                        | 9                 |
| Iron Man 3                          | 8                 |
| Thor: The Dark World                | 7                 |
| Captain America: The Winter Soldier | 8                 |
| Guardians of the Galaxy             | 9                 |
| Avengers: Age of Ultron             | 8                 |
| Ant-Man                             | 8                 |

| NAME                           | CEIL(IMDB_RATING) |
|--------------------------------|-------------------|
| Captain America: Civil War     | 8                 |
| Doctor Strange                 | 8                 |
| Guardians of the Galaxy Vol. 2 | 8                 |
| Spider-Man: Homecoming         | 8                 |
| Thor: Ragnarok                 | 8                 |
| Black Panther                  | 8                 |
| Avengers: Infinity War         | 9                 |
| Ant-Man and the Wasp           | 8                 |
| Iron Man                       | 8                 |

20 rows selected.

Select name, floor(imdb\_rating) from movie;

```
SQL> Select name, floor(imdb_rating) from movie;
```

| NAME                                | FLOOR(IMDB_RATING) |
|-------------------------------------|--------------------|
| The Incredible Hulk                 | 6                  |
| Iron Man 2                          | 7                  |
| Thor                                | 7                  |
| Captain America: The First Avenger  | 6                  |
| The Avengers                        | 8                  |
| Iron Man 3                          | 7                  |
| Thor: The Dark World                | 7                  |
| Captain America: The Winter Soldier | 7                  |
| Guardians of the Galaxy             | 8                  |
| Avengers: Age of Ultron             | 7                  |
| Ant-Man                             | 7                  |

| NAME                           | FLOOR(IMDB_RATING) |
|--------------------------------|--------------------|
| Captain America: Civil War     | 7                  |
| Doctor Strange                 | 7                  |
| Guardians of the Galaxy Vol. 2 | 7                  |
| Spider-Man: Homecoming         | 7                  |
| Thor: Ragnarok                 | 7                  |
| Black Panther                  | 7                  |
| Avengers: Infinity War         | 8                  |
| Ant-Man and the Wasp           | 7                  |
| Iron Man                       | 7                  |

20 rows selected.

Select (runtime/60) from movie;

```
SQL> Select (runtime/60) from movie;
```

```
(RUNTIME/60)
```

```
-----  
1.86666667  
2.06666667  
1.91666667  
2.06666667  
2.38333333  
2.16666667  
1.86666667  
2.26666667  
2.01666667  
2.35  
1.95
```

```
(RUNTIME/60)
```

```
-----  
2.45  
1.91666667  
2.26666667  
2.26666667  
2.16666667  
2.23333333  
2.48333333  
1.96666667  
2.1
```

```
20 rows selected.
```

Select round((runtime/60),3) from movie;

```
SQL> Select round((runtime/60),3) from movie;
```

```
ROUND((RUNTIME/60),3)
```

```
-----  
1.867  
2.067  
1.917  
2.067  
2.383  
2.167  
1.867  
2.267  
2.017  
2.35  
1.95
```

```
ROUND((RUNTIME/60),3)
```

```
-----  
2.45  
1.917  
2.267  
2.267  
2.167  
2.233  
2.483  
1.967  
2.1
```

```
20 rows selected.
```

Select (worldwide/1000000) from boxoffice;

```
SQL> Select (worldwide/1000000) from boxoffice;

(WORLDWIDE/1000000)
-----
      585.174222
      263.427551
      623.933331
      449.326618
      370.549774
      1519.55791
      1215.42399
        644.78314
      714.766572
        774.1766
      1405.41387

(WORLDWIDE/1000000)
-----
      519.445163
      1153.3045
      677.718395
      863.756051
      880.166924
      853.977126
      1347.07126
      2046.47071
      465.879576

20 rows selected.
```

### 3.12 STRING FUNCTIONS:

Select lpad(name,20,'\*') from movie;

```
SQL> Select lpad(name,20,'*') from movie;

LPAD(NAME,20,'*')
-----
*The Incredible Hulk
*****Iron Man 2
*****Thor
Captain America: The
*****The Avengers
*****Iron Man 3
Thor: The Dark World
Captain America: The
Guardians of the Gal
Avengers: Age of Ult
*****Ant-Man
```

Select replace(place\_of\_birth,', USA') from actor;



```
SQL> Select replace(place_of_birth,', USA') from actor;
```

```
REPLACE(PLACE_OF_BIRTH,',USA')
```

```
-----  
Manhattan New York City New York USA  
Chicago Illinois USA  
Los Angeles, California  
Bismarck, North Dakota  
Tehran, Iran  
Los Angeles, California, U.S.  
Boston, Massachusetts, U.S.  
Queens, New York City, New York  
Boston, Massachusetts  
New York City, New York  
London, England, UK
```

Select reverse(name) from movie;

```
SQL> Select reverse(name) from movie;
```

```
REVERSE(NAME)
```

```
-----  
kluH elbidercnI ehT  
2 naM norI  
roHT  
regnevA tsriF ehT :aciremA niatpaC  
sregnevA ehT  
3 naM norI  
dlroW kraD ehT :roHT  
reidloS retniW ehT :aciremA niatpaC  
yxalaG eht fo snaidrauG  
nortlU fo egA :sregnevA  
naM-tnA
```

Select ltrim(name,'The ') from movie;

```
SQL> Select ltrim(name,'The ') from movie;
```

```
LTRIM(NAME,'THE')
```

```
-----  
Incredible Hulk  
Iron Man 2  
or  
Captain America: The First Avenger  
Avengers  
Iron Man 3  
or: The Dark World  
Captain America: The Winter Soldier  
Guardians of the Galaxy  
Avengers: Age of Ultron  
Ant-Man
```

Select upper(name) from movie;

```
SQL> Select upper(name) from movie;
```

```
UPPER(NAME)
```

```
-----  
THE INCREDIBLE HULK  
IRON MAN 2  
THOR  
CAPTAIN AMERICA: THE FIRST AVENGER  
THE AVENGERS  
IRON MAN 3  
THOR: THE DARK WORLD  
CAPTAIN AMERICA: THE WINTER SOLDIER  
GUARDIANS OF THE GALAXY  
AVENGERS: AGE OF ULTRON  
ANT-MAN
```

### 3.13 GROUP BY....HAVING:

Select actor\_id from movie\_actor group by actor\_id having count(\*)>2;

```
SQL> Select actor_id from movie_actor group by actor_id having count(*)>2;
```

```
ACTOR_ID
```

```
-----  
nm2017943  
nm1107001  
nm0004874  
nm1212722  
nm0498278  
nm0163988  
nm0262635  
nm2394794  
nm0269463  
nm1165110  
nm0719637
```

Select movie\_id,count(\*) from movie\_writer group by movie\_id;

```
SQL> Select movie_id,count(*) from movie_writer group by movie_id;
```

| MOVIE_ID  | COUNT(*) |
|-----------|----------|
| tt0371746 | 4        |
| tt0458339 | 2        |
| tt0478970 | 4        |
| tt0800080 | 1        |
| tt0800369 | 3        |
| tt0848228 | 1        |
| tt1211837 | 3        |
| tt1228705 | 1        |
| tt1300854 | 2        |
| tt1825683 | 2        |
| tt1843866 | 2        |

### 3.14 JOIN:

Select m.name, a.name, q.character from movie m, actor a, movie\_actor q where m.movie\_id=q.movie\_id and a.actor\_id=q.actor\_id and m.movie\_id='tt0371746';

```
SQL> Select m.name, a.name, q.character from movie m, actor a, movie_actor q where m.movie_id=q.movie_id and a.actor_id=q.actor_id and m.movie_id='tt0371746';
```

| NAME     | NAME             | CHARACTER          |
|----------|------------------|--------------------|
| Iron Man | Robert Downey Jr | Tony Stark         |
| Iron Man | Terrence Howard  | Rhodey             |
| Iron Man | Jeff Bridges     | Obadiah Stane      |
| Iron Man | Leslie Bibb      | Christine Everhart |
| Iron Man | Shaun Toub       | Yinsen             |
| Iron Man | Faran Tahir      | Raza               |
| Iron Man | Clark Gregg      | Agent Coulson      |
| Iron Man | Jon Favreau      | Hogan              |
| Iron Man | Gwyneth Paltrow  | Peggy Potts        |
| Iron Man | Stan Lee         | Stan Lee           |

10 rows selected.

Select distinct a.name, d.name from actor a, director d, movie\_actor m, movie\_director n where a.actor\_id=m.actor\_id and d.director\_id=n.director\_id and m.movie\_id=n.movie\_id;

```
SQL> Select distinct a.name, d.name from actor a, director d, movie_actor m, movie_director n where a.actor_id=m.actor_id and d.director_id=n.director_id and m.movie_id=n.movie_id;
```

| NAME               | NAME            |
|--------------------|-----------------|
| Shaun Toub         | Jon Favreau     |
| Gwyneth Paltrow    | Louis Leterrier |
| Kat Dennings       | Kenneth Branagh |
| Toby Jones         | Joe Johnston    |
| Robert Downey Jr   | Joss Whedon     |
| Edward Norton      | Joss Whedon     |
| Cobie Smulders     | Joss Whedon     |
| Tom Hiddleston     | Alan Taylor     |
| Jamie Alexander    | Alan Taylor     |
| Scarlett Johansson | Joe Russo       |
| Toby Jones         | Anthony Russo   |

## Chapter 4

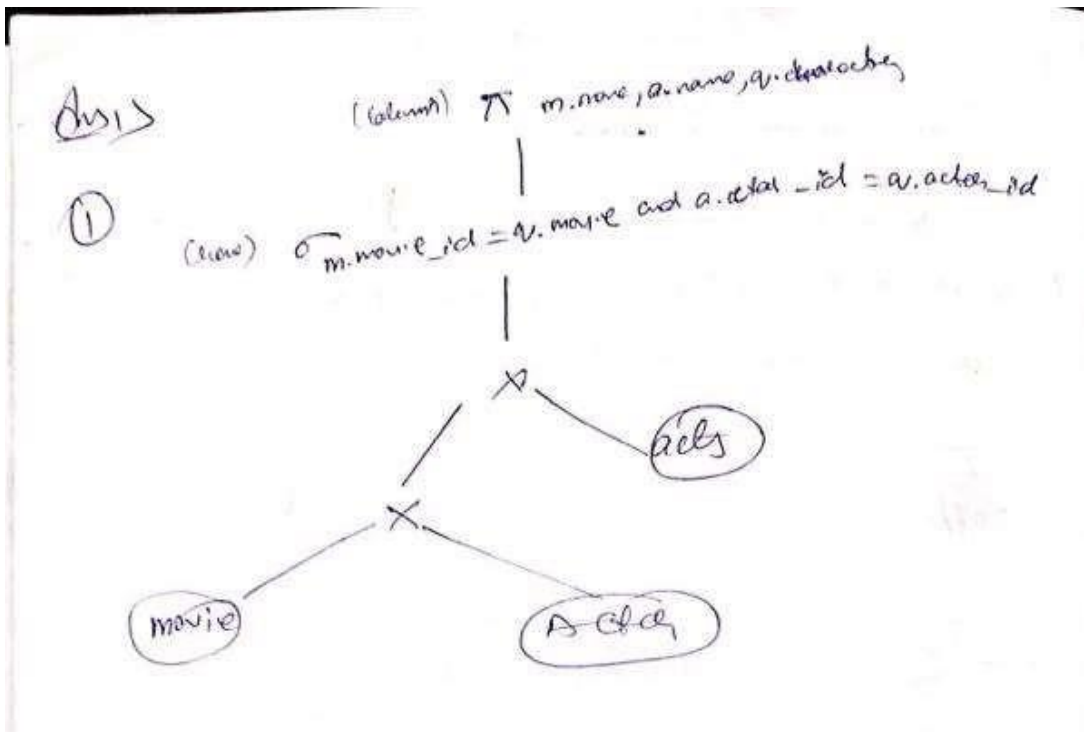
# QUERY OPTIMIZATION

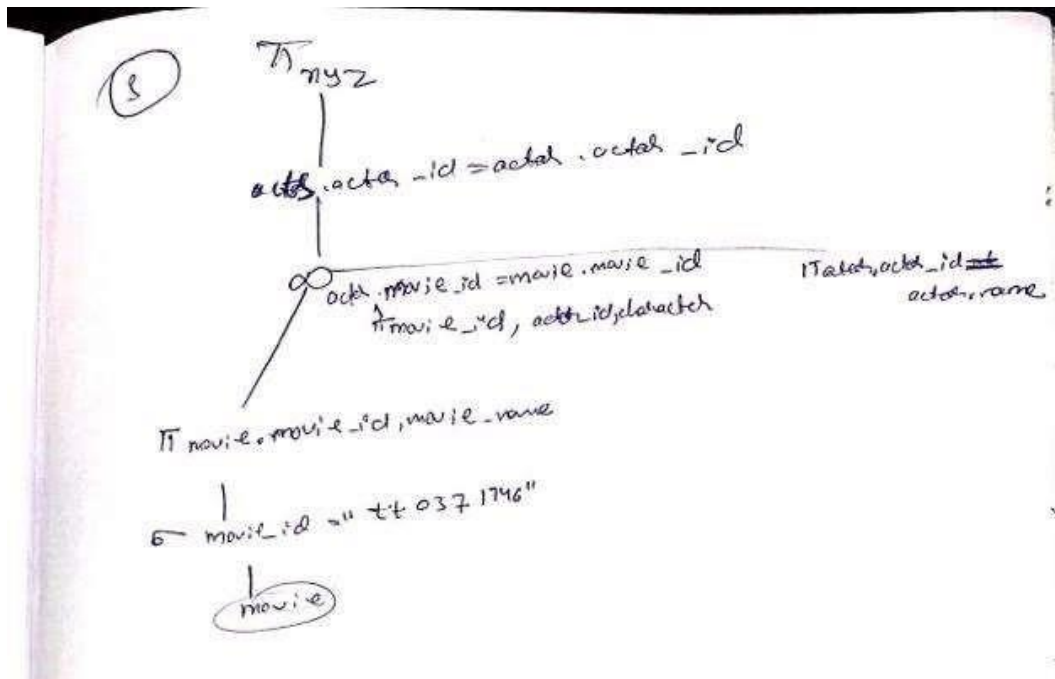
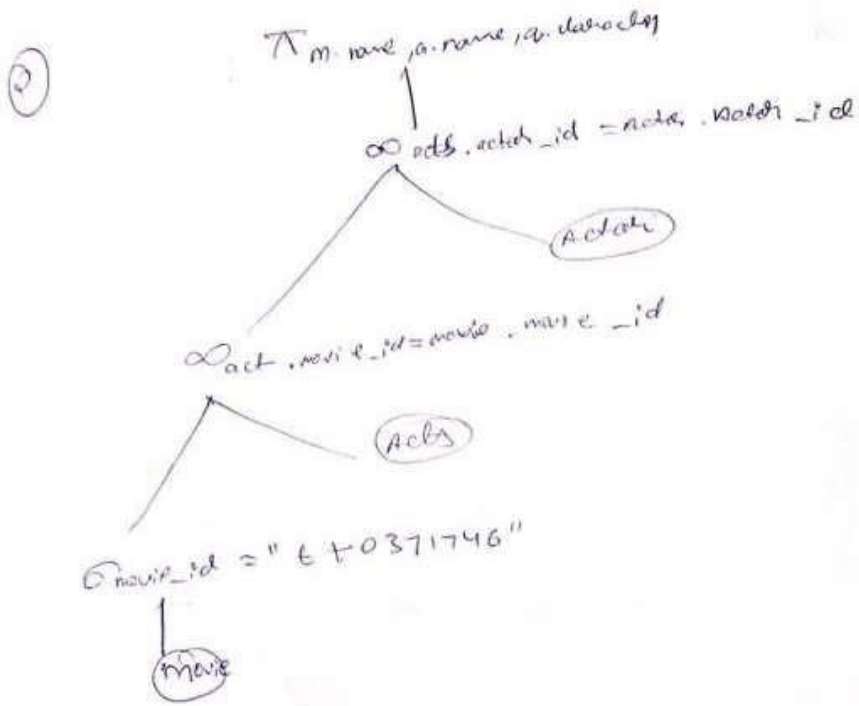
#### 4.1 Query1

Select m.name, a.name, q.character from movie m, actor a, movie\_actor q where  
m.movie\_id=q.movie\_id and a.actor\_id=q.actor\_id and m.movie\_id='tt0371746';

#### Query 2

Select distinct a.name, d.name from actor a, director d, movie\_actor m, movie\_director n  
where a.actor\_id=m.actor\_id and d.director\_id=n.director\_id and m.movie\_id=n.movie\_id  
and a.actor\_id='nm0000375';



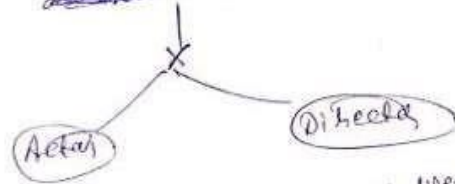


Ans 2)

T1: name, d: name

①

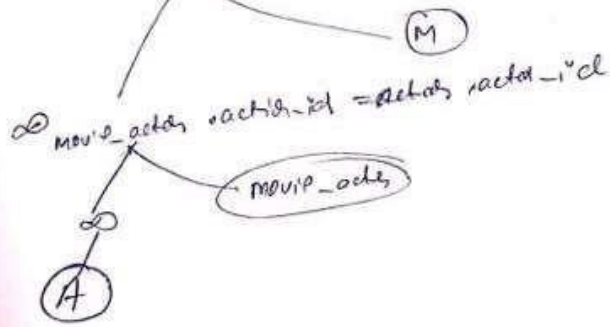
$a.actor\_id = m.actor\_id$  and  $d.director\_id = n.director\_id$   
and  $m.movie\_id = n.movie\_id$   
 ~~$a.actor\_id = m.actor\_id$~~



②

T1: movie\_actor.actor\_id, movie\_director.director\_id

$\infty$  movie\_actor, movie\_id = ~~movie\_id~~ movie\_id



## 4.2 Normalization

Doctor ( doctor\_id, name, DOB, Place-of Birth )

A: doctor\_id

B: name

C: DOB

D: Place-of-Birth.

1NF: Since my table does not have any multiple values, so it is already in 1NF form.

2NF: Since my table has only one primary key and not composite key, so it is in 2NF.

3NF:  $A \rightarrow B$       Therefore, it is in 3NF form.  
 $A \rightarrow C$   
 $A \rightarrow D$

BCNF: Take heavily into consideration by the division BCNF.

movie\_actor ( movie\_id, actor\_id, character )

A: movie\_id

B: actor\_id

C: character

1NF: Since no columns have multiple values, therefore it is in 1NF.

2NF: ~~AB~~  $AB \rightarrow C$

$\therefore A \rightarrow C$

$B \rightarrow C$  is not true

$\therefore AB \rightarrow C$  holds and the table is in 2NF for.

3NF: Candidate key { A, B }

~~There is no~~

There is no TFD of non-prime attribute on any attribute

$\therefore$  this is 3NF

4CNF:  $AB \rightarrow C$

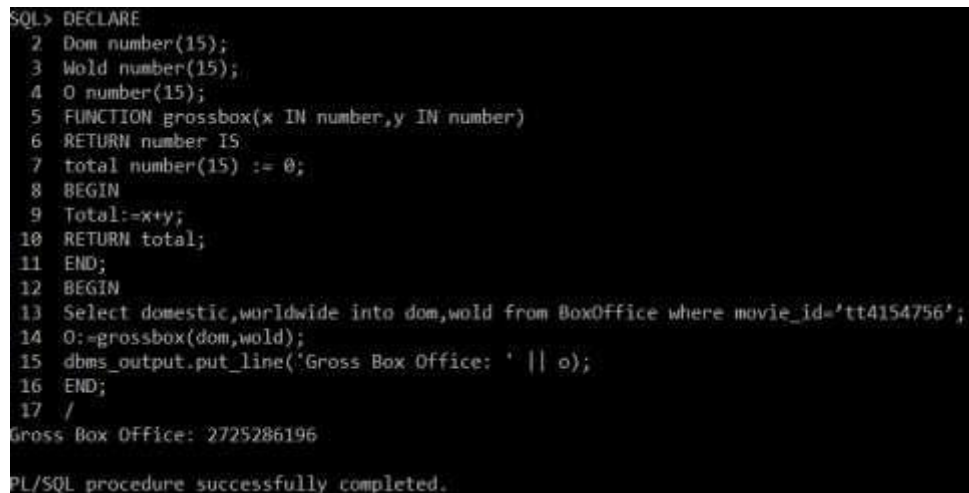
Since all the FD left side part is a key.



## Chapter 5 PROCEDURAL QUERIES

### 5.1 PL/SQL FUNCTION:

```
DECLARE
Dom number(15);
Wold number(15);
O number(15);
FUNCTION grossbox(x IN number,y IN number)
RETURN number IS
total number(15) := 0;
BEGIN
Total:=x+y;
RETURN total;
END;
BEGIN
Select domestic,worldwide into dom,wold from BoxOffice where movie_id='tt4154756';
O:=grossbox(dom,wold);
dbms_output.put_line('Gross Box Office: ' || o);
END;
/
```



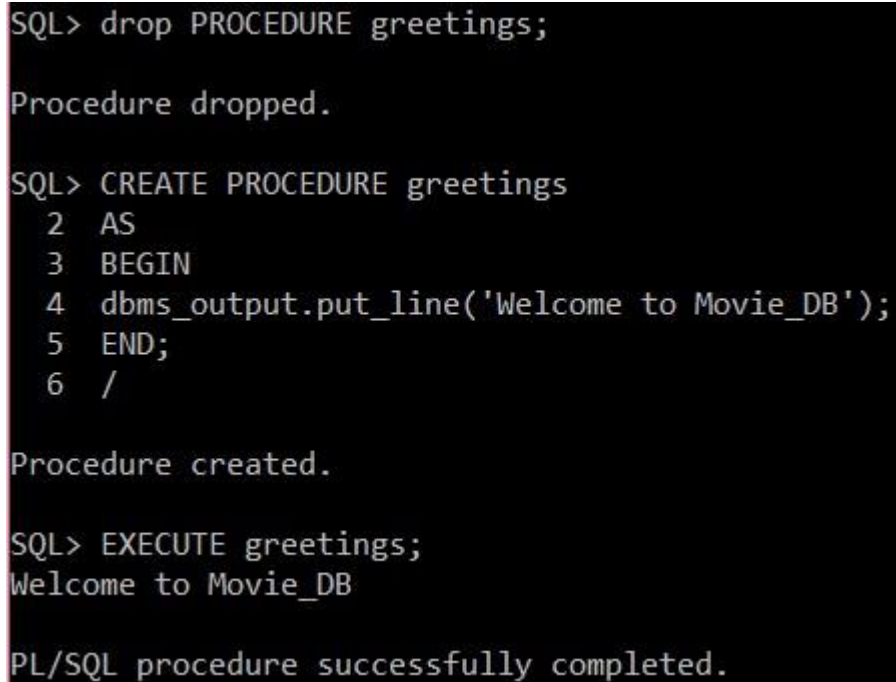
```
SQL> DECLARE
  2 Dom number(15);
  3 Wold number(15);
  4 O number(15);
  5 FUNCTION grossbox(x IN number,y IN number)
  6 RETURN number IS
  7 total number(15) := 0;
  8 BEGIN
  9 Total:=x+y;
 10 RETURN total;
 11 END;
 12 BEGIN
 13 Select domestic,worldwide into dom,wold from BoxOffice where movie_id='tt4154756';
 14 O:=grossbox(dom,wold);
 15 dbms_output.put_line('Gross Box Office: ' || o);
 16 END;
 17 /
Gross Box Office: 2725286196
PL/SQL procedure successfully completed.
```

## 5.2 PL/SQL PROCEDURE:

```
CREATE PROCEDURE greetings
AS
dbms_output.put_line('Welcome to Movie_DB');
END;
/
```

BEGIN

EXECUTE greetings;



The screenshot shows a terminal window with a black background and white text. It displays the execution of SQL commands to create and run a PL/SQL procedure named 'greetings'. The commands are entered line by line, and the output shows the procedure being dropped, created, and then executed successfully, printing 'Welcome to Movie\_DB'.

```
SQL> drop PROCEDURE greetings;

Procedure dropped.

SQL> CREATE PROCEDURE greetings
  2  AS
  3  BEGIN
  4  dbms_output.put_line('Welcome to Movie_DB');
  5  END;
  6  /

Procedure created.

SQL> EXECUTE greetings;
Welcome to Movie_DB

PL/SQL procedure successfully completed.
```

## 5.3 PL/SQL TRIGGER:

CREATE OR REPLACE TRIGGER box

```

BEFORE DELETE OR INSERT OR UPDATE ON boxoffice
FOR EACH ROW
WHEN (NEW.movie_id > 0)
DECLARE
diff number;
BEGIN diff := :NEW.worldwide -
:OLD.worldwide;  dbms_output.put_line('Old: ' ||
:OLD.worldwide);  dbms_output.put_line('New: '
|| :NEW.worldwide);
dbms_output.put_line('Difference: ' || diff);
END;
/

```

```

SQL> CREATE OR REPLACE TRIGGER box
  2 BEFORE DELETE OR INSERT OR UPDATE ON boxoffice
  3 FOR EACH ROW
  4 WHEN (NEW.movie_id > 0)
  5 DECLARE
  6 diff number;
  7 BEGIN
  8 diff := :NEW.worldwide - :OLD.worldwide;
  9     dbms_output.put_line('Old: ' || :OLD.worldwide);
 10     dbms_output.put_line('New: ' || :NEW.worldwide);
 11     dbms_output.put_line('Difference: ' || diff);
 12 END;
 13 /
CREATE OR REPLACE TRIGGER box
                                *
ERROR at line 1:
ORA-04089: cannot create triggers on objects owned by SYS

```

## **Chapter 6 CONCLUSION** 6.1 FEEDBACK ON THE PROJECT

The Database created here is fully functional. This is very useful for all personnel working on a movie, it helps keep track of the projects you have worked on. It also helps the agents keep track of their clients. We have implemented every type of query, after robust testing, it can be said that the database is ready to be implemented on a larger scale in the real world.