**DBA 240 – 0001**

**DATABASE ANALYSIS AND DESIGN**

**FINAL PROJECT**

**FALL 2021**

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# **Business Requirements**

The client, a movie rental store owner, has more than 3000 movies available and is interested in a system that will keep track of available products, and will assist in analyzing the pattern of rentals amongst customers.

The system will allow specified employees and the store owner the ability to add, modify, and/or delete movies, trivia associated with the inventoried movies, and “video club” members of the store.

Per the client’s request, the system will be able to log all the movies currently available, allowing for the entry of the title and category of each movie. Once entered, the movie will need to have a DVD or VHS tape format provided. Each DVD or VHS tapes will be associated with a specific movie ID to help keep track of the inventory. With each DVD or VHS a format id number will be required, and each id will track the number of copies, the total number of rentals, and whether it is ready for retirement status for each media.

Due to customer popularity, the client will be allowed to enter trivia about the lead actor of any movies the store has in stock, and track what other films that actor stars in. If a star actor is available, information about the actor’s “real name” and date of birth will need to be provided for films added into the system.

For the customers, they will be required to provide the following information to become a “Video Club” member and rent movies:

* First name.
* Last name.
* Current phone number.
* Current address.
* With the option to provide a city, and state.

Once that is entered, the customer will be provided with a member number that allows for the rental of movies. Upon each rental the system will keep track of what the customer has rented, the rental date and time of each order, the return date and time of each order, how often the customer has returned an order late, and the customer’s past rental orders.

Upon completion the system will be able to meet all the client’s needs.

# **Conceptual design**

**Database Design**: Group A analyzes the application requirements and designs a database supporting the business processes of the application. As database designers, we need to store information in one place and follow the rules of normalization to achieve this project goal. The database design is divided into the following steps:

**a. Entity List**

MOVIE

ACTOR

DVD

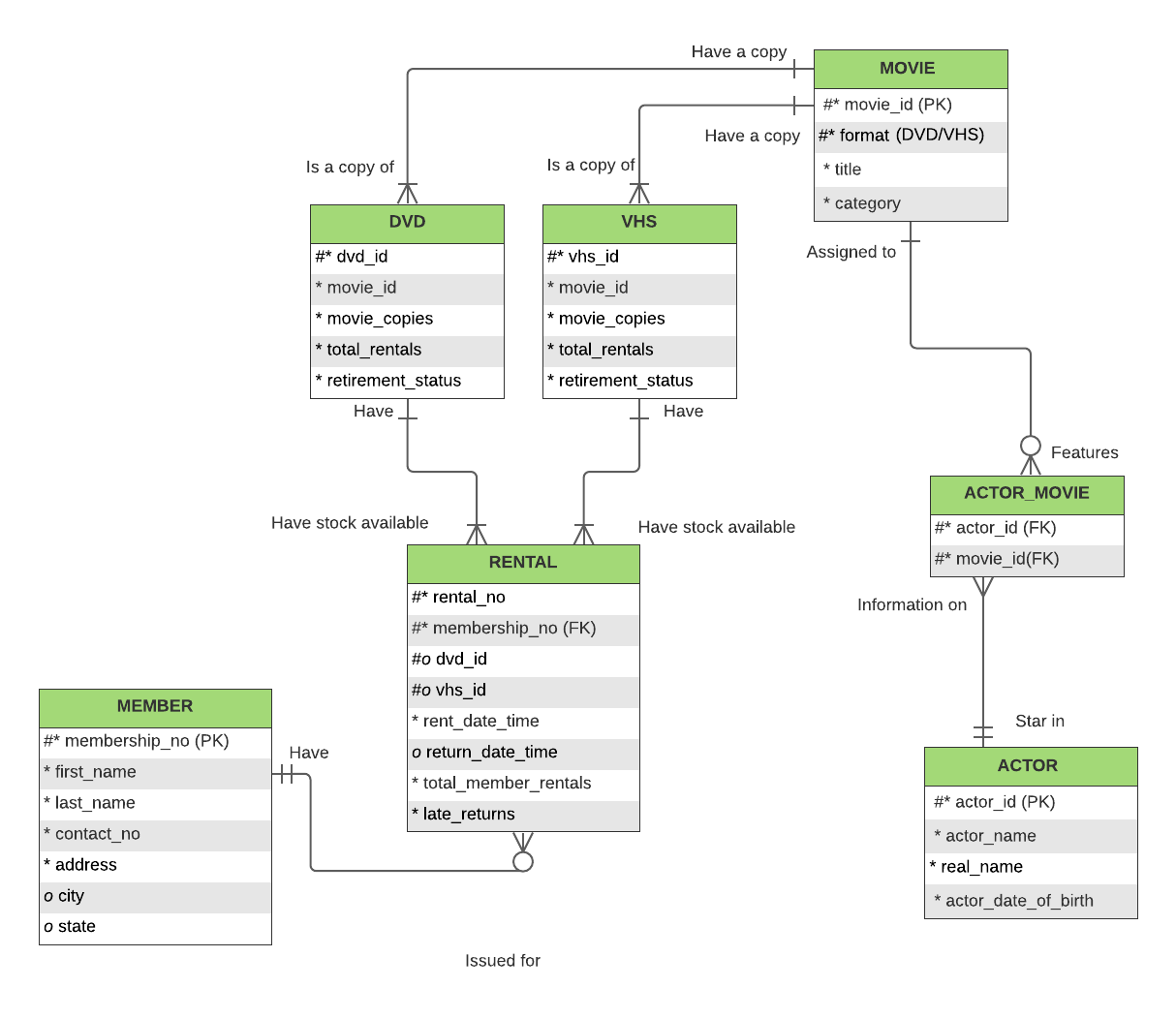
VHS

RENTAL

MEMBER

ACTOR\_MOVIE

# **b. E-R Diagram**



# **c. Relationship to List**

Each ACTOR\_MOVIE must store information on one and only one ACTOR.

Each ACTOR must star in one or more ACTOR\_MOVIE.

Each MOVIE may feature one or more ACTOR\_MOVIE.

Each ACTOR\_MOVIE must be assigned to one or more MOVIE.

Each MOVIE must have a copy of one or more DVDs.

Each DVD must be a copy of one and only one MOVIE.

Each MOVIE must have a copy of one or more VHS tapes.

Each VHS tape must be a copy of one and only one MOVIE.

Each DVD may have one or more in RENTAL.

Each RENTAL must have stock available for one or more DVD.

Each VHS may have one or more in RENTAL.

Each RENTAL must have stock available for one or more VHS.

Each RENTAL must be registered to one and only one MEMBER.

Each MEMBER may have one or more RENTALs.

# **d. Relationship Matrix**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | ACTOR | ACTOR\_MOVIE | MOVIE | DVD | VHS | RENTAL | MEMBER |
| ACTOR |  | Star In | ------ | ------ | ------ | ------ | ------- |
| ACTOR\_MOVIE | Information  on |  | Features | ------ | ------ | ------ | ------ |
| MOVIE | ------ | Assigned  to |  | Have a copy | Have a copy | ------ | ------ |
| DVD | ------ | ------ | Is a copy |  | ------ | Have stock available | ------ |
| VHS | ------ | ------ | Is a copy | ------ |  | Have stock available | ------ |
| RENTAL | ------ | ------ | ------ | Have | Have |  | Issued for |
| MEMBER | ------ | ------ | ------ | ------ | ------ | Have |  |

# **Logical Design**

a. Logical Table Instance Charts

Transform the conceptual ER model into logical table instance charts.

1. Entity Name: **MOVIE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute Name | movie\_id | format | title | category |
| Key Types | PK |  |  |  |
| Tags | #,\* | \* | \* | \* |
| Sample Data | M0001 | D | BRUCE ALMIGHTY | COMEDY |
|  | M0002 | D | US | THRILLER |
|  | M0003 | V | PRINCESS MONONOKE | ANIMATION |
|  | M0004 | V | BATMAN | ACTION |
|  | M0005 | D | HEREDITARY | HORROR |

1. Entity Name: **ACTOR\_MOVIE**

|  |  |  |
| --- | --- | --- |
| Attribute Name | actor\_id | movie\_id |
| Key Types | PK,FK | PK,FK |
| Tags | #,\* | #,\* |
| Sample Data | A0001 | M0001 |
|  | A0002 | M0002 |
|  | A0003 | M0003 |
|  | A0004 | M0004 |
|  | A0005 | M0005 |

1. Entity Name: **ACTOR**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute Name | actor\_id | actor\_name | real\_name | actor\_date\_of\_birth |
| Key Types | PK |  |  |  |
| Tags | #,\* | \* | \* | \* |
| Sample Data | A0001 | JIM CARREY | JAMES EUGENE CARREY | 17-JAN-1962 |
|  | A0002 | LUPITA NYONG’O | LUPITA AMONDI NYONG’O | 01-MAR-1983 |
|  | A0003 | KEITH DAVID | KEITH DAVID WILLIAMS | 04-JUN-1956 |
|  | A0004 | MICHAEL KEATON | MICHAEL JOHN DOUGLAS | 05-SEP-1951 |
|  | A0005 | TONI COLLETTE | TONI COLLETTE GALAFASSI | 01-NOV-1972 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute Name | dvd\_id | movie\_id | movie\_copies | total\_rentals | retirement\_status |
| Key Types | PK, FK | FK |  |  |  |
| Tags | #,\* | \* | \* | \* | \* |
| Sample Data | D0001 | M0001 | 2 | 22 | Y |
|  | D0002 | M0002 | 1 | 71 | N |
|  | D0003 | M0003 | 1 | 58 | N |
|  | D0004 | M0004 | 1 | 89 | N |
|  | D0005 | M0005 | 2 | 34 | N |

1. Entity Name: **DVD**
2. Entity Name: **VHS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute Name | vhs\_id | movie\_id | movie\_copies | total\_rentals | retirement\_status |
| Key Types | PK, FK | FK |  |  |  |
| Tags | #,\* | \* | \* | \* | \* |
| Sample Data | V0001 | M0001 | 1 | 46 | N |
|  | V0002 | M0002 | 2 | 79 | N |
|  | V0003 | M0003 | 3 | 102 | Y |
|  | V0004 | M0004 | 3 | 47 | N |
|  | V0005 | M0005 | 1 | 12 | N |

1. Entity Name: **RENTAL**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute Name | rental\_no | member  ship\_no | dvd\_id | vhs\_id | Rent\_date\_time | Return\_date\_time | total\_member  \_rentals | late\_returns |
| Key Types | PK | FK | FK | FK |  |  |  |  |
| Tags | #,\* | #,\* | #,*o* | #,*o* | \* | *o* | \* | \* |
| Sample Data | 10000021 | 103 | D0001 | V0002 | 18-11-21 09:24 | 19-11-21 11:04 | 75 | 13 |
|  | 10000022 | 101 | D0002 |  | 18-11-21 17:51 | 19-11-21 18:24 | 171 | 4 |
|  | 10000023 | 101 | D0003 |  | 19-11-21 18:57 | 20-11-21 17:37 | 171 | 4 |
|  | 10000024 | 105 |  | V0004 | 19-11-21 19:24 | 20-11-21 08:24 | 3 | 0 |
|  | 10000025 | 103 | D0004 |  | 19-11-21 12:24 |  | 27 | 13 |
|  | 10000026 | 104 |  | V0003 | 20-11-21 14:24 | 21-11-21 10:38 | 51 | 1 |
|  | 10000027 | 101 | D0005 |  | 20-11-21 18:02 | 21-11-21 14:35 | 171 | 4 |
|  | 10000028 | 102 | D0005 | V0001 | 20-11-21 20:24 | 21-11-21 09:26 | 123 | 8 |

(7) Entity Name: **MEMBER**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute Name | Membership\_no | first\_name | last\_name | contact\_no | address | city | state |
| Key Types | PK,FK |  |  |  |  |  |  |
| Tags | #, \* | \* | \* | \* | \* | *o* | *o* |
| Sample Data | 101 | NORMANI | MILLER | 9192486578 | 2188 TRUMAN LN | RALEIGH | NC |
|  | 102 | MAC | GLOVER | 7571154785 | 157 HARRIET ST | CARY | NC |
|  | 103 | DONALD | LACY | 9197784258 | 4536 ANDERSON DR | APEX | NC |
|  | 104 | STEVE | PARRISH | 7574259878 | 48 FROST CT | RALEIGH | NC |
|  | 105 | KEHLANI | PAAK | 9845287516 | 873 THROMBEY RD | GARNER | NC |

# **DATABASE CREATION AND POPULATION**

## **SQL to CREATE tables**

--**MOVIE**

drop table movie;

create table MOVIE (

movie\_id VARCHAR2(5) NOT NULL,

format CHAR(3) NOT NULL,

title VARCHAR2(100) NOT NULL,

category VARCHAR2(12) NOT NULL,

constraint MOVIE\_PK PRIMARY KEY (movie\_id));

--**ACTOR**

drop table ACTOR;

create table ACTOR (

actor\_id VARCHAR2(5) NOT NULL,

actor\_name VARCHAR2(100) NOT NULL,

real\_name VARCHAR2(100) NOT NULL,

actor\_date\_of\_birth DATE NOT NULL,

constraint ACTOR\_PK PRIMARY KEY(actor\_id));

--**ACTOR\_MOVIE**

drop table ACTOR\_MOVIE;

create table ACTOR\_MOVIE (

actor\_id VARCHAR2(5) NULL,

movie\_id VARCHAR2(5) NOT NULL,

constraint ACTOR\_MOVIE\_FK\_ACTOR FOREIGN KEY(actor\_id) REFERENCES ACTOR(actor\_id),

constraint ACTOR\_MOVIE\_FK\_MOVIE FOREIGN KEY(movie\_id) REFERENCES MOVIE(movie\_id));

--**VHS**

drop table VHS;

create table VHS (

vhs\_id VARCHAR2(5) NOT NULL,

movie\_id VARCHAR2(5) NOT NULL,

movie\_copies NUMBER(2) NOT NULL,

total\_rentals NUMBER(4) NOT NULL,

retirement\_stat NUMBER(1,0) DEFAULT 0 NOT NULL,

constraint VHS\_PK PRIMARY KEY (vhs\_id),

constraint VHS\_FK\_MOVIE FOREIGN KEY (movie\_id) REFERENCES MOVIE (movie\_id));

--**DVD**

drop table DVD;

create table DVD (

dvd\_id VARCHAR2(5) NOT NULL,

movie\_id VARCHAR2(5) NOT NULL,

movie\_copies NUMBER(2) NOT NULL,

total\_rentals NUMBER(4) NOT NULL,

retirement\_status NUMBER(1,0) DEFAULT 0 NOT NULL,

constraint DVD\_PK PRIMARY KEY(dvd\_id),

constraint DVD\_FK\_MOVIE FOREIGN KEY(movie\_id) REFERENCES MOVIE(movie\_id));

--**MEMBER**

drop table MEMBER;

create table MEMBER (

membership\_no NUMBER(5) NOT NULL,

first\_name VARCHAR2(10) NOT NULL,

last\_name VARCHAR2(10) NOT NULL,

contact\_no NUMBER(10) NOT NULL,

address VARCHAR2(40) NOT NULL,

city VARCHAR2(20) NULL,

state VARCHAR2(2) NULL,

constraint MEMBER\_PK PRIMARY KEY(membership\_no));

--**RENTAL**

drop table RENTAL;

create table RENTAL (

rental\_no NUMBER(10) NOT NULL,

membership\_no NUMBER(5) NOT NULL,

dvd\_id VARCHAR2(5) NULL,

vhs\_id VARCHAR2(5) NULL,

rent\_date\_time TIMESTAMP NOT NULL,

return\_date\_time TIMESTAMP NULL,

total\_member\_rentals NUMBER(5) NOT NULL,

late\_returns NUMBER(5) NOT NULL,

constraint RENTAL\_PK PRIMARY KEY(rental\_no),

constraint RENTAL\_FK\_MEMBER FOREIGN KEY(membership\_no) REFERENCES MEMBER(membership\_no),

constraint RENTAL\_FK\_DVD FOREIGN KEY(dvd\_id) REFERENCES DVD(dvd\_id),

constraint RENTAL\_FK\_VHS FOREIGN KEY(vhs\_id) REFERENCES VHS(vhs\_id));

## **SQL to LOAD tables**

--**MOVIE**

insert into MOVIE values ('M0001', 'D', 'BRUCE ALMIGHTY', 'COMEDY');

insert into MOVIE values ('M0002', 'D', 'US', 'THRILLER');

insert into MOVIE values ('M0003', 'V', 'PRINCESS MONONOKE', 'ANIMATION');

insert into MOVIE values ('M0004', 'V', 'BATMAN', 'ACTION');

insert into MOVIE values ('M0005', 'D', 'HEREDITARY', 'HORROR');

--**ACTOR**

insert into ACTOR values('A0001', 'JIM CARREY', 'JAMES EUGENE CARREY', '17-JAN-1962');

insert into ACTOR values('A0002', 'LUPITA NYONG''O', 'LUPITA AMONDI NYONG''O', '01-MAR-1983');

insert into ACTOR values('A0003', 'KEITH DAVID', 'KEITH DAVID WILLIAMS', '04-JUN-1956');

insert into ACTOR values('A0004', 'MICHAEL KEATON', 'MICHAEL JOHN DOUGLAS', '05-SEP-1951');

insert into ACTOR values('A0005', 'TONI COLLETTE', 'TONI COLLETTE GALAFASSI', '01-NOV-1972');

--**ACTOR\_MOVIE**

insert into ACTOR\_MOVIE values ('A0001', 'M0001');

insert into ACTOR\_MOVIE values ('A0002', 'M0002');

insert into ACTOR\_MOVIE values ('A0003', 'M0003');

insert into ACTOR\_MOVIE values ('A0004', 'M0004');

insert into ACTOR\_MOVIE values ('A0005', 'M0005');

--**VHS**

insert into VHS values ('V0001', 'M0001', 1, 46, 0);

insert into VHS values ('V0002', 'M0002', 2, 79, 0);

insert into VHS values ('V0003', 'M0003', 3, 102, 1);

insert into VHS values ('V0004', 'M0004', 3, 47, 0);

insert into VHS values ('V0005', 'M0005', 1, 12, 0);

--**DVD**

insert into DVD values ('D0001', 'M0001', 2, 22, 1);

insert into DVD values ('D0002', 'M0002', 1, 71, 0);

insert into DVD values ('D0003', 'M0003', 1, 58, 0);

insert into DVD values ('D0004', 'M0004', 1, 89, 0);

insert into DVD values ('D0005', 'M0005', 2, 34, 0);

--**MEMBER**

insert into MEMBER values (101, 'NORMANI', 'MILLER', '9192486578', '2188 TRUMAN LN', 'RALEIGH', 'NC');

insert into MEMBER values (102, 'MAC', 'GLOVER', '7571154785', '157 HARRIET ST', 'CARY', 'NC');

insert into MEMBER values (103, 'DONALD', 'LACY', '9197784258', '4536 ANDERSON DR', 'APEX', 'NC');

insert into MEMBER values (104, 'STEVE', 'PARRISH', '7574259878', '48 FROST CT', 'RALEIGH', 'NC');

insert into MEMBER values (105, 'KEHLANI', 'PAAK', '9845287516', '873 THROMBEY RD', 'GARNER', 'NC');

--**RENTAL**

insert into RENTAL values (10000021, 103, 'D0001', 'V0002', TO\_DATE('2021/11/18 09:24:00', 'yyyy/mm/dd hh24:mi:ss'),TO\_DATE('2021/11/19 11:04:00', 'yyyy/mm/dd hh24:mi:ss'),75,13);

insert into RENTAL values (10000022, 101, 'D0002', NULL, TO\_DATE('2021/11/18 17:51:00', 'yyyy/mm/dd hh24:mi:ss'),TO\_DATE('2021/11/19 18:24:00', 'yyyy/mm/dd hh24:mi:ss'), 171,4);

insert into RENTAL values (10000023, 101, 'D0003', NULL, TO\_DATE('2021/11/19 18:57:00', 'yyyy/mm/dd hh24:mi:ss'),TO\_DATE('2021/11/20 17:37:00', 'yyyy/mm/dd hh24:mi:ss'),171,4);

insert into RENTAL values (10000024, 105, NULL, 'V0004', TO\_DATE('2021/11/1 19:24:00', 'yyyy/mm/dd hh24:mi:ss'),TO\_DATE('2021/11/20 08:24:00', 'yyyy/mm/dd hh24:mi:ss'),3,0);

insert into RENTAL values (10000025, 103, 'D0004', NULL, TO\_DATE('2021/11/19 12:24:00', 'yyyy/mm/dd hh24:mi:ss'), NULL,27,13);

insert into RENTAL values (10000026, 104, NULL, 'V0003', TO\_DATE('2021/11/20 14:24:00', 'yyyy/mm/dd hh24:mi:ss'),TO\_DATE('2021/11/21 10:38:00', 'yyyy/mm/dd hh24:mi:ss'),51,1);

insert into RENTAL values (10000027, 101, 'D0005', NULL, TO\_DATE('2021/11/20 18:02:00', 'yyyy/mm/dd hh24:mi:ss'),TO\_DATE('2021/11/21 14:35:00', 'yyyy/mm/dd hh24:mi:ss'),171,4);

insert into RENTAL values (10000028, 102, 'D0005', 'V0001', TO\_DATE('2021/11/20 20:24:00', 'yyyy/mm/dd hh24:mi:ss'),TO\_DATE('2021/11/21 09:26:00', 'yyyy/mm/dd hh24:mi:ss'),123,8);

## **SQL Examples**

SELECTS to verify the tables loaded.

--**MOVIE**

MOVIE FOR TITLE CATEGORY

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

M0001 D BRUCE ALMIGHTY COMEDY

M0002 D US THRILLER

M0003 V PRINCESS MONONOKE ANIMATION

M0004 V BATMAN ACTION

M0005 D HEREDITARY HORROR

**--ACTOR\_MOVIE**

ACTOR MOVIE

----- -----

A0001 M0001

A0002 M0002

A0003 M0003

A0004 M0004

A0005 M0005

--**ACTOR**

ACTOR ACTOR\_NAME REAL\_NAME ACTOR\_DAT

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

A0001 JIM CARREY JAMES EUGENE CARREY 17-JAN-62

A0002 LUPITA NYONG'O LUPITA AMONDI NYONG'O 01-MAR-83

A0003 KEITH DAVID KEITH DAVID WILLIAMS 04-JUN-56

A0004 MICHAEL KEATON MICHAEL JOHN DOUGLAS 05-SEP-51

A0005 TONI COLLETTE TONI COLLETTE GALAFASSI 01-NOV-72

--**VHS**

VHS\_I MOVIE MOVIE\_COPIES TOTAL\_RENTALS RETIREMENT\_STAT

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

V0001 M0001 1 46 0

V0002 M0002 2 79 0

V0003 M0003 3 102 1

V0004 M0004 3 47 0

V0005 M0005 1 12 0

--**DVD**

DVD\_I MOVIE MOVIE\_COPIES TOTAL\_RENTALS RETIREMENT\_STATUS

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

D0001 M0001 2 22 1

D0002 M0002 1 71 0

D0003 M0003 1 58 0

D0004 M0004 1 89 0

D0005 M0005 2 34 0

--**RENTAL**

RENTAL\_NO MEMBERSHIP\_NO DVD\_I VHS\_I RENT\_DATE\_TIME

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

10000021 103 D0001 V0002 18-NOV-21 09.24.00.000000 AM

10000022 101 D0002 18-NOV-21 05.51.00.000000 PM

10000023 101 D0003 19-NOV-21 06.57.00.000000 PM

10000024 105 V0004 01-NOV-21 07.24.00.000000 PM

10000025 103 D0004 19-NOV-21 12.24.00.000000 PM

10000026 104 V0003 20-NOV-21 02.24.00.000000 PM

10000027 101 D0005 20-NOV-21 06.02.00.000000 PM

10000028 102 D0005 V0001 20-NOV-21 08.24.00.000000 PM

RETURN\_DATE\_TIME TOTAL\_MEMBER\_RENTALS LATE\_RETURNS

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

19-NOV-21 11.04.00.000000 AM 75 13

19-NOV-21 06.24.00.000000 PM 171 4

20-NOV-21 05.37.00.000000 PM 171 4

20-NOV-21 08.24.00.000000 AM 3 0

27 13

21-NOV-21 10.38.00.000000 AM 51 1

21-NOV-21 02.35.00.000000 PM 171 4

21-NOV-21 09.26.00.000000 AM 123 8

--**MEMBER**

MEMBERSHIP\_NO FIRST\_NAME LAST\_NAME CONTACT\_NO ADDRESS CITY ST

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

101 NORMANI MILLER 9192486578 2188 TRUMAN LN RALEIGH NC

102 MAC GLOVER 7571154785 157 HARRIET ST CARY NC

103 DONALD LACY 9197784258 4536 ANDERSON DR APEX NC

104 STEVE PARRISH 7574259878 48 FROST CT RALEIGH NC

105 KEHLANI PAAK 9845287516 873 THROMBEY RD GARNER NC

Additional SQL Examples:

**--List movie\_id, title of the comedy DVD**

SELECT movie\_id, title, category

FROM movie

WHERE category = 'COMEDY'

AND format = 'D';

MOVIE TITLE CATEGORY

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

M0001 BRUCE ALMIGHTY COMEDY

**--List the title of DVDs which have 2 copies**

SELECT m.title, d.dvd\_id

FROM movie m, dvd d

WHERE m.movie\_id = d.movie\_id

AND d.movie\_copies = 2;

TITLE DVD\_I

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

BRUCE ALMIGHTY D0001

HEREDITARY D0005

**-- List the title of the movies in which Jim Carrey is the main actor.**

SELECT m.title, a.actor\_name

FROM movie m, actor\_movie am, actor a

WHERE m.movie\_id = am.movie\_id

AND am.actor\_id = a.actor\_id

AND a.actor\_name = 'JIM CARREY';

TITLE ACTOR\_NAME

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

BRUCE ALMIGHTY JIM CARREY

--**List the name, real name, and birthday of the main actor of the “US” movie.**

SELECT m.title, a.actor\_name, a.real\_name, a.actor\_date\_of\_birth

FROM movie m, actor\_movie am, actor a

WHERE m.movie\_id = am.movie\_id

AND am.actor\_id = a.actor\_id

AND m.title = 'US';

TITLE ACTOR\_NAME REAL\_NAME ACTOR\_DAT

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

US LUPITA NYONG'O LUPITA AMONDI NYONG'O 01-MAR-83

--**List the last name and first name address and phone number of the customers who rent the BATMAN movie**

SELECT m.title, mb.first\_name, mb.last\_name, mb.address, mb.contact\_no

FROM movie m, vhs v, member mb, rental r

WHERE m.movie\_id = v.movie\_id

AND v.vhs\_id = r.vhs\_id

AND r.membership\_no = mb.membership\_no

AND m.title = 'BATMAN';

TITLE FIRST\_NAME LAST\_NAME ADDRESS CONTACT\_NO

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

BATMAN KEHLANI PAAK 873 THROMBEY RD 9845287516

**--List the customer ‘s first name, last name, rent\_date, return date and the number of late\_return of the customer whose name is MAC GLOVER**

SELECT mb.first\_name, mb.last\_name, r.rent\_date\_time, r.return\_date\_time, r.late\_returns

FROM member mb, rental r

WHERE mb.membership\_no = r.membership\_no

AND mb.first\_name = 'MAC'

AND mb.last\_name = 'GLOVER';

FIRST\_NAME LAST\_NAME RENT\_DATE\_TIME RETURN\_DATE\_TIME

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

MAC GLOVER 20-NOV-21 08.24.00.000000 PM 21-NOV-21 09.26.00.000000AM

LATE\_RETURNS

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

8

--**List total\_member\_rentals and the retirement\_status of the “HEREDITARY” DVD**

SELECT m.title, d.total\_rentals, d.retirement\_status

FROM movie m, dvd d

WHERE m.movie\_id = d.movie\_id

AND m.title = 'HEREDITARY';

TITLE TOTAL\_RENTALS RETIREMENT\_STATUS

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

HEREDITARY 34 0

--**List the title of movie has the highest number of total\_rentals to analyze customers’ overall movie dvd or vhs preferences.**

SELECT vhs\_id, title, total\_rentals

FROM movie join vhs using (movie\_id)

ORDER BY total\_rentals DESC;

VHS\_I TITLE TOTAL\_RENTALS

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

V0003 PRINCESS MONONOKE 102

V0002 US 79

V0004 BATMAN 47

V0001 BRUCE ALMIGHTY 46

V0005 HEREDITARY 12

SELECT dvd\_id, title, total\_rentals

FROM movie join dvd using (movie\_id)

ORDER BY total\_rentals DESC;

VHS\_I TITLE TOTAL\_RENTALS

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

V0003 BATMAN 89

V0002 US 71

V0004 PRINCESS MONONOKE 47

V0001 HEREDITARY 46

V0005 BRUCE ALMIGHTY 12