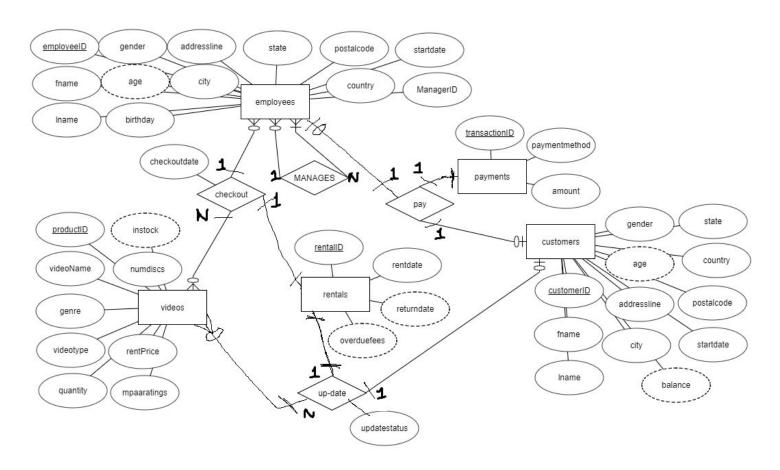
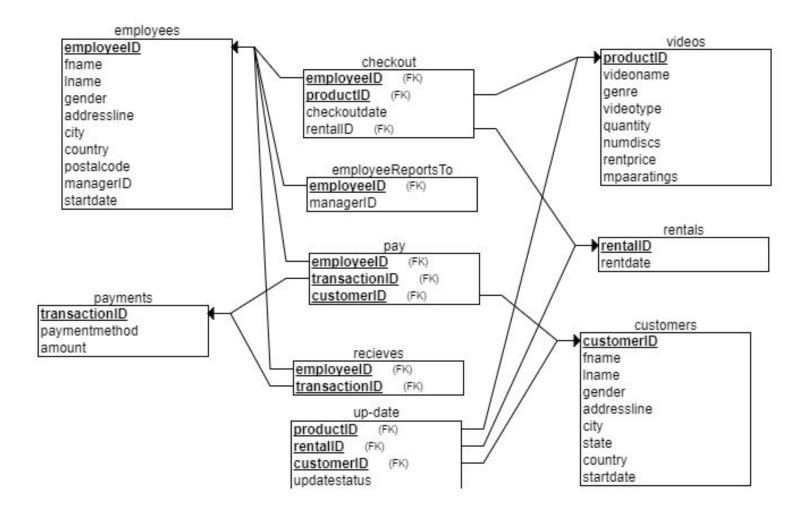
Assignment 2 Updated EER, Relational Schema, SQL file, and Front-End view of access reports Video Rental Company

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1) Updated EER Schema:



2) Detailed of the database using RDBMS. The schema should match the EER schema and be complete with primary and foreign keys...



3) A short paragraph to explain the design decisions made to model relationships and specialization:

The goal we had while implementing our EER model was to refine and simplify the model. While making it as efficient as possible when implemented in MySQL. Our video rental database consists of 5 entities: **employees**, **customers**, **videos**, **payments**, and **rentals**. **Employees** and **customers** contain personal information and a primary key ID to identify each person. **Videos** has a special **productID** referencing every video in stock. Lastly, **Rentals** and **payments** holds a special ID for a reference to each transaction.

The updated schema now has 4 relationships. Firstly, **manages** is between employees and the managers. Each employee has an **employeeID** and a **managerID**. The managerID may be null or references another employee that is their manager.

Up-date(when a customer rents, buys, or returns a video) is a ternary relationship between rentals, customers, and videos. The relationship has foreign keys **rentalID**, **customerID**, and **productID** respectively to represent the transaction between the three entities. The same is represented by **checkout**(when an employee checks out a video; between employees, videos, and rentals) and **pay**(when a customer pays for a transaction; between employees, payments, and customers) relationships for easy cross reference.

4) All the queries used to create and visualize the database for base entities:

i. SCHEMA (included in "videorentalsdatabase.sql" and "videorentalsdatabaseexport.sql"):

'2017-05-02', 1);

```
CREATE DATABASE /*!32312 IF NOT EXISTS*/'videorentals' /*!40100 DEFAULT CHARACTER SET latin1 */;
USE 'videorentals';
DROP TABLE IF EXISTS customers;
CREATE TABLE customers
 customerID varchar(11) NOT NULL,
 fname varchar(50) NOT NULL,
 Iname varchar(50) NOT NULL,
 gender varchar(1) NOT NULL,
 birthday date NOT NULL,
 addressline varchar(50) NOT NULL,
 city varchar(50) NOT NULL,
 state varchar(50) NOT NULL,
 country varchar(50) NOT NULL,
 postalcode varchar(50) NOT NULL,
 startdate date NOT NULL,
 PRIMARY KEY (customerID)
);
insert into customers (customerID, fname, Iname, gender, birthday, addressline, city, state, country, postalcode, startdate) values
('56351269692', 'Homer', 'O"Carrol', 'M', '1974-06-29', '73 Mayer Park', 'Lubbock', 'Texas', 'United States', '79491', '2005-05-03');
insert into customers (customerID, fname, Iname, gender, birthday, addressline, city, state, country, postalcode, startdate) values
('14819809670', 'Jillian', 'Broadis', 'F', '1972-09-23', '447 Commercial Avenue', 'Fort Worth', 'Texas', 'United States', '76134',
'2003-10-24');
DROP TABLE IF EXISTS employees;
CREATE TABLE employees
 employeeID varchar(11) NOT NULL,
 fname varchar(50) NOT NULL,
 Iname varchar(50) NOT NULL,
 gender char(1) NOT NULL,
 birthday date NOT NULL,
 addressline varchar(50) NOT NULL,
 city varchar(50) NOT NULL,
 state varchar(50) NOT NULL,
 country varchar(50) NOT NULL,
 postalcode varchar(50) NOT NULL,
 startdate date NOT NULL,
 managerID varchar(11) NULL,
 PRIMARY KEY (employeeID)
insert into employees (employeeID, fname, Iname, gender, birthday, addressline, city, state, country, postalcode, startdate,
managerID) values (1, 'Antony', 'Bordes', 'M', '1981-03-18', '271 Wayridge Hill', 'Spokane', 'Washington', 'United States', '99252',
'2012-12-30', null);
insert into employees (employeeID, fname, lname, gender, birthday, addressline, city, state, country, postalcode, startdate,
managerID) values (2, 'Claudio', 'Pandie', 'M', '1990-10-05', '02807 Beilfuss Pass', 'Tyler', 'Texas', 'United States', '75710',
```

```
DROP TABLE IF EXISTS videos;
CREATE TABLE videos
productID varchar(11) NOT NULL,
videoname varchar(50) NOT NULL,
genre varchar(50) NOT NULL,
videotype varchar(50) NOT NULL,
quantity int(3) NOT NULL,
rentprice decimal(10, 2) NOT NULL,
numdiscs int(3) NOT NULL,
mpaaratings char(5) NOT NULL,
PRIMARY KEY (productID)
insert into videos (productID, videoname, genre, videotype, quantity, rentprice, numdiscs, mpaaratings) values ('V0J8AB81XI6',
'Footloose', 'Drama', 'DVD', 8, 5.00, 3, 'PG-13');
insert into videos (productID, videoname, genre, videotype, quantity, rentprice, numdiscs, mpaaratings) values ('UB4JO9T7174',
'Griff the Invisible', 'Comedy|Drama|Romance', 'DVD', 17, 5.00, 3, 'G');
DROP TABLE IF EXISTS rentals;
CREATE TABLE rentals
(
rentalID varchar(11) NOT NULL,
rentstatus varchar(50) NOT NULL,
rentDate date NOT NULL,
PRIMARY KEY(rentalID)
insert into rentals (rentalID,rentdate) values ('B7PI4M8H','2016-05-10');
insert into rentals (rentalID,rentdate) values ('T4KFGG8J','2014-11-16');
DROP TABLE IF EXISTS up date;
CREATE TABLE up date
rentalID varchar(8) NOT NULL,
customerID varchar(11) NOT NULL,
productID varchar(11) NOT NULL,
updatestatus varchar(11) DEFAULT 'CHECKED OUT',
KEY rentalID(rentalID),
KEY customerID(customerID),
KEY productID (productID ),
FOREIGN KEY (customerID) REFERENCES customers(customerID),
FOREIGN KEY (rentalID) REFERENCES rentals(rentalID),
FOREIGN KEY (productID ) REFERENCES videos(productID )
);
insert into up_date(rentalID, customerID ,productID ) values ('B7PI4M8H', '87950811774', 'ZZMUVPJWMN7');
insert into up_date(rentalID, customerID,productID) values ('T4KFGG8J', '7583529237', 'Z79Z07ZTWBI');
```

```
DROP TABLE IF EXISTS payments;
CREATE TABLE payments
transactionID varchar(11) NOT NULL,
paymentdate date NOT NULL,
paymentMethod varchar(50) NULL,
amount decimal(10, 2) NOT NULL,
PRIMARY KEY (transactionID)
insert into payments (transactionID, paymentdate, paymentMethod, amount) values ('UGVQT011613', '2016-05-10', 'CHECK',
insert into payments (transactionID, paymentdate, paymentMethod, amount) values ('OOKJE966259', '2014-11-16', 'CASH', 5.00);
DROP TABLE IF EXISTS checkout;
CREATE TABLE checkout
productID varchar(11) NULL,
employeeID varchar(11) NULL,
checkOutDate date NOT NULL,
KEY productID(productID),
KEY employeeID(employeeID),
FOREIGN KEY (productID) REFERENCES videos(productID),
FOREIGN KEY (employeeID) REFERENCES employees(employeeID)
insert into checkout (rentalID, productID, employeeID, checkOutDate) values ('B7PI4M8H', 'ZZMUVPJWMN7', 1, '2016-05-10');
insert into checkout (rentalID, productID, employeeID, checkOutDate) values ('T4KFGG8J','Z79Z07ZTWBI', 4,'2014-11-16');
DROP TABLE IF EXISTS 'pay';
CREATE TABLE pay
transactionID varchar(11) NOT NULL,
customerID varchar(11) NULL,
KEY transactionID(transactionID),
KEY customerID(customerID),
FOREIGN KEY (transactionID) REFERENCES payments(transactionID),
FOREIGN KEY (customerID) REFERENCES customers(customerID)
);
insert into pay (transactionID, customerID) values...insert into pay (transactionID, customerID, employeeID) values (
'UGVQT011613', '87950811774', 1);
insert into pay (transactionID, customerID, employeeID) values ( 'OOKJE966259', '758352923', 4);
```

Ii. REPORTS/VIEWS (included in "videorentalsdatabaseexport.sql" dumps):

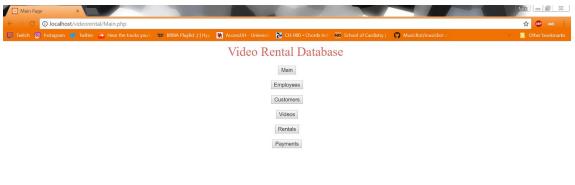
```
CREATE VIEW 'videos_list' AS SELECT * FROM videorentals.videos_list;
CREATE
  ALGORITHM = UNDEFINED
  DEFINER = `root`@`localhost`
  SQL SECURITY DEFINER
VIEW 'videorentals'.'videos list' AS
  SELECT
    'videorentals'.'videos'.'productID' AS 'productID',
     'videorentals'.'videos'.'videoname' AS 'videoname',
     'videorentals'.'videos'.'genre' AS 'genre',
     'videorentals'.'videos'.'videotype' AS 'videotype',
    'videorentals'.'videos'.'quantity' AS 'quantity',
     'videorentals'.'videos'.'rentprice' AS 'rentprice',
     'videorentals'.'videos'.'numdiscs' AS 'numdiscs',
     'videorentals'.'videos'.'mpaaratings' AS 'mpaaratings'
  FROM
     'videorentals'.'videos'
CREATE VIEW `employees_list` AS SELECT * FROM videorentals.employees_list;
CREATE
  ALGORITHM = UNDEFINED
  DEFINER = 'root'@'localhost'
  SQL SECURITY DEFINER
VIEW 'videorentals'.'employees_list' AS
  SELECT
     'videorentals'.'employees'.'employeeID' AS 'employeeID',
    'videorentals'.'employees'.'fname' AS 'fname',
     'videorentals'.'employees'.'Iname' AS 'Iname',
     'videorentals'.'employees'.'gender' AS 'gender',
    'videorentals'.'employees'.'birthday' AS 'birthday',
     'videorentals'.'employees'.'addressline' AS 'addressline',
     'videorentals'.'employees'.'city' AS 'city',
    'videorentals'.'employees'.'state' AS 'state',
     'videorentals'.'employees'.'country' AS 'country',
     'videorentals'.'employees'.'postalcode' AS 'postalcode',
     'videorentals'.'employees'.'startdate' AS 'startdate',
    `videorentals`.`employees`.`managerID` AS `managerID`
  FROM
     'videorentals'.'employees'
```

```
CREATE VIEW 'customers_list' AS SELECT * FROM videorentals.customers_list;
CREATE
  ALGORITHM = UNDEFINED
  DEFINER = 'root'@'localhost'
  SQL SECURITY DEFINER
VIEW 'videorentals'.'customers_list' AS
  SELECT
    'videorentals'.'customers'.'customerID' AS 'customerID',
    'videorentals'.'customers'.'fname' AS 'fname',
    'videorentals'.'customers'.'Iname' AS 'Iname',
    'videorentals'.'customers'.'gender' AS 'gender',
    'videorentals'.'customers'.'birthday' AS 'birthday',
    'videorentals'.'customers'.'addressline' AS 'addressline',
    'videorentals'.'customers'.'city' AS 'city',
    'videorentals'.'customers'.'state' AS 'state',
    'videorentals'.'customers'.'country' AS 'country',
    'videorentals'.'customers'.'postalcode' AS 'postalcode',
    'videorentals'.'customers'.'startdate' AS 'startdate'
  FROM
    'videorentals'.'customers'
CREATE VIEW 'payments_list' AS SELECT * FROM videorentals.payments_list;
CREATE
  ALGORITHM = UNDEFINED
  DEFINER = `root`@`localhost`
  SQL SECURITY DEFINER
VIEW 'videorentals'.'payments_list' AS
  SELECT
    'videorentals'.'payments'.'transactionID' AS 'transactionID',
    'videorentals'.'payments'.'paymentdate' AS 'paymentdate',
    'videorentals'.'payments'.'paymentMethod' AS 'paymentMethod',
    'videorentals'.'payments'.'amount' AS 'amount'
  FROM
    'videorentals'.'payments'
CREATE VIEW 'rentals_list' AS SELECT * FROM videorentals.rentals_list;
CREATE
  ALGORITHM = UNDEFINED
  DEFINER = `root`@`localhost`
  SQL SECURITY DEFINER
VIEW 'videorentals'. 'rentals list' AS
  SELECT
    'videorentals'.'rentals'.'rentalID' AS 'rentalID',
    'videorentals'.'rentals'.'rentDate' AS 'rentDate'
  FROM
    'videorentals'.'rentals'
```

```
CREATE VIEW 'employees_reports_to' AS SELECT * FROM videorentals.employees_reports_to;
CREATE
  ALGORITHM = UNDEFINED
  DEFINER = `root`@`localhost`
  SQL SECURITY DEFINER
VIEW 'videorentals'.'employees_reports_to' AS
  SELECT
    'e'.'employeeID' AS 'Emp ID',
    'e'.'fname' AS 'Emp fname',
    `e`.`Iname` AS `Emp_Iname`,
    `e`.`startdate` AS `Emp_startDate`,
    'e'.'managerID' AS 'Man ID',
    'm'.'fname' AS 'Man fname',
    'm'.'Iname' AS 'Man_Iname'
  FROM
    ('videorentals'.'employees' 'e'
    LEFT JOIN 'videorentals'.'employees' 'm' ON (('m'.'employeeID' = 'e'.'managerID')))
  HAVING `e`.`managerID`
  ORDER BY 'e'.'managerID'
CREATE VIEW `videos_in_stock` AS SELECT * FROM videorentals.videos_in_stock;
CREATE
  ALGORITHM = UNDEFINED
  DEFINER = `root`@`localhost`
  SQL SECURITY DEFINER
VIEW 'videorentals'.'videos_in_stock' AS
  SELECT
    'v'.'productID' AS 'productID',
    'v'.'videoname' AS 'videoName',
    'v'.'genre' AS 'genre',
    'v'.'videotype' AS 'videoType',
    'v'.'quantity' AS 'quantity',
    'v'.'rentprice' AS 'rentprice',
    'v'.'numdiscs' AS 'numDiscs',
    'v' 'mpaaratings' AS 'mpaaratings',
    ('v'.'quantity' - COUNT(('u'.'updatestatus' = 'CHECKED OUT'))) AS 'instock'
  FROM
    ('videorentals'.'videos' 'v'
    LEFT JOIN 'videorentals'.'up_date' 'u' ON (('v'.'productID' = 'u'.'productID')))
  GROUP BY 'v'.'productID'
```

5) Front-End view for access reports for base entities:

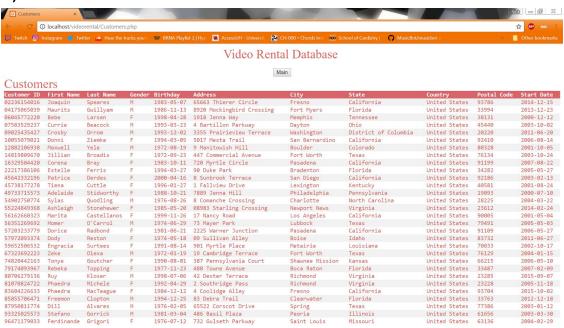
i) Main page:



ii) Employees:



iii) Customers:



iv) Videos:

ZZMUVPJWMN7

Mustalaishurmaaja



Drama | Romance

DVD

13

5.00

v. Rentals:



Vi. Payments:

