Movie Shop

Final Assignment

Prepared For: CST8215_310 Introduction to Database

Prepared By: Abdullah Zeki Ilgun (Apo), Minh Trung Do

Aug, 2021

Contents

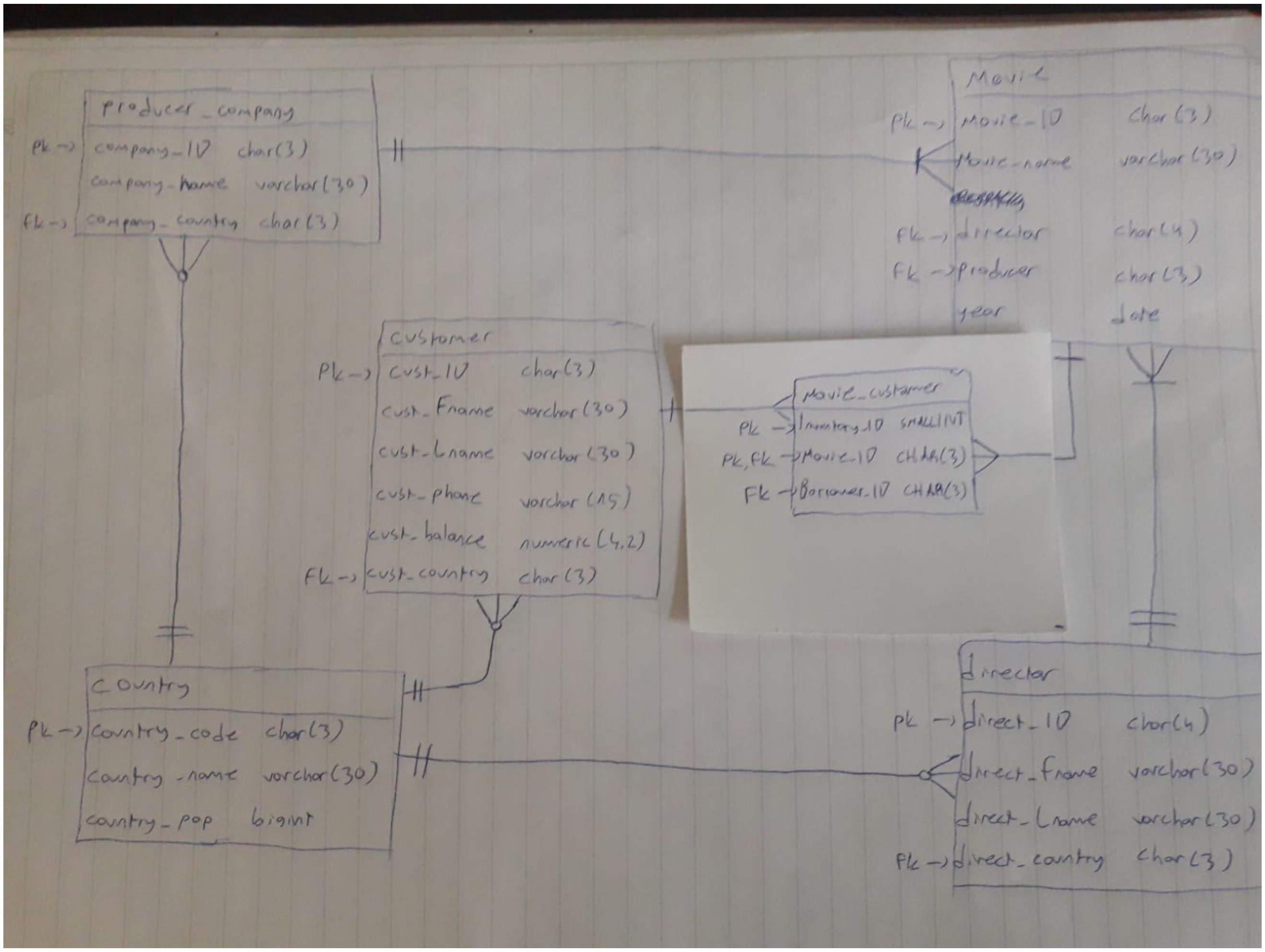
Abstract:

It’s a primitive movie rental store as it was popular in many years ago before the raising of Netflix. Subscribers of this store are considered as customers. There are movie, customer, producer company, director, and country informations as the entities in the database behind the store.

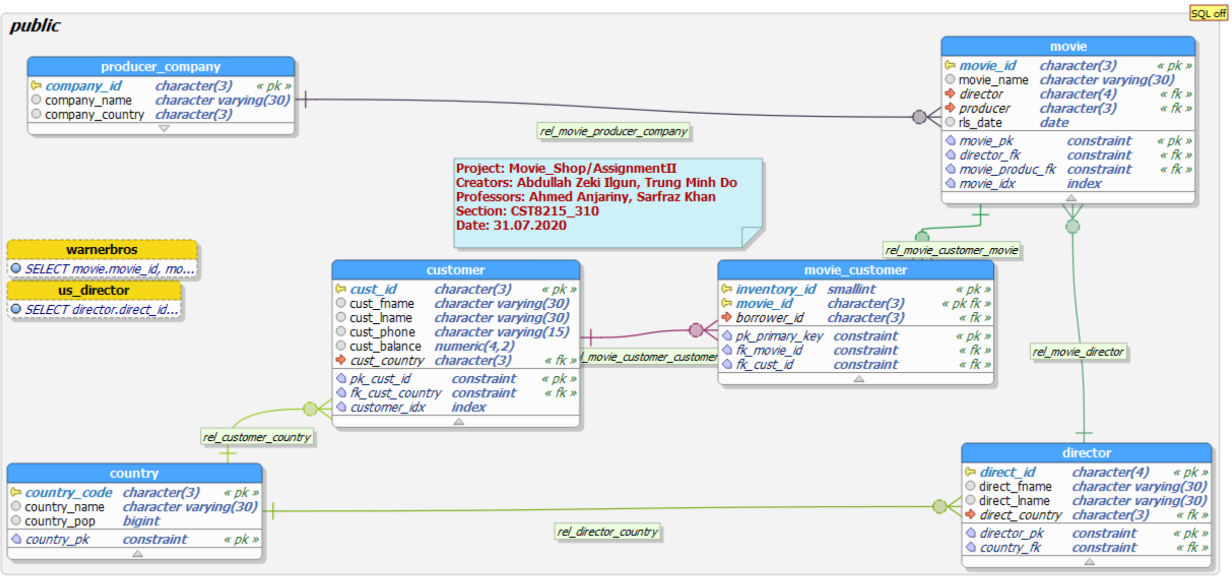
Business Rules:

1. A movie is directed by one and only one director.
2. Lead producer is considered as the producer company of a movie in this database. So, a movie can be produced by one company.
3. A movie can be rented by zero or many customers.
4. There can be more than one movies which have the same name. They’re differed by inventory id’s.
5. A producer company produces one or many movies.
6. A producer company is located in one and only one country.
7. Zero or many directors may come from a country.
8. A director comes from one and only one country.
9. A director can make one or many movies. (They’re not considered as a director unless they’ve made at least one movie.)
10. A movie can be directed by one and only one director.
11. A customer can be from one and only one country, and a country can have zero or many customers.
12. A customer is still a customer even though he doesn’t rent a movie since he’s basically a subscriber.

ERD on Paper


producer_company
Pk -> company_ID char(3)
company_name varchar(30)
Fk -> company_country char(3)
Movie
Pk -> Movie_ID Char(3)
Movie_name varchar(30)
Fk -> director char(4)
Fk -> producer char(3)
year date
customer
Pk -> cust_ID char(3)
cust_Fname varchar(30)
cust_Lname varchar(30)
cust_phone varchar(15)
cust_balance numeric(4,2)
Fk -> cust_country char(3)
Movie_customer
Pk -> Inventory_ID SMALLINT
Pk,Fk -> Movie_ID CHAR(3)
Fk -> Borrower_ID CHAR(3)
country
Pk -> country_code char(3)
country_name varchar(30)
country_pop bigint
director
pk -> direct_ID char(4)
direct_fname varchar(30)
direct_Lname varchar(30)
Fk -> direct_country char(3)

Reverse-Engineered Physical ERD



Project: Movie_Shop/AssignmentII
Creators: Abdullah Zeki Ilgun, Trung Minh Do
Professors: Ahmed Anjariny, Sarfraz Khan
Section: CST8215_310
Date: 31.07.2020

producer_company

company_id	character(3)	« pk »
company_name	character varying(30)	
company_country	character(3)	

movie

movie_id	character(3)	« pk »
movie_name	character varying(30)	
director	character(4)	« fk »
producer	character(3)	« fk »
rls_date	date	
movie_pk	constraint	« pk »
director_fk	constraint	« fk »
movie_produc_fk	constraint	« fk »
movie_idx	index	

warnerbros

SELECT movie.movie_id, mo...

us_director

SELECT director.direct_id...

customer

cust_id	character(3)	« pk »
cust_fname	character varying(30)	
cust_lname	character varying(30)	
cust_phone	character varying(15)	
cust_balance	numeric(4,2)	
cust_country	character(3)	« fk »
pk_cust_id	constraint	« pk »
fk_cust_country	constraint	« fk »
customer_idx	index	

movie_customer

inventory_id	smallint	« pk »
movie_id	character(3)	« pk fk »
borrower_id	character(3)	« fk »
pk_primary_key	constraint	« pk »
fk_movie_id	constraint	« fk »
fk_cust_id	constraint	« fk »

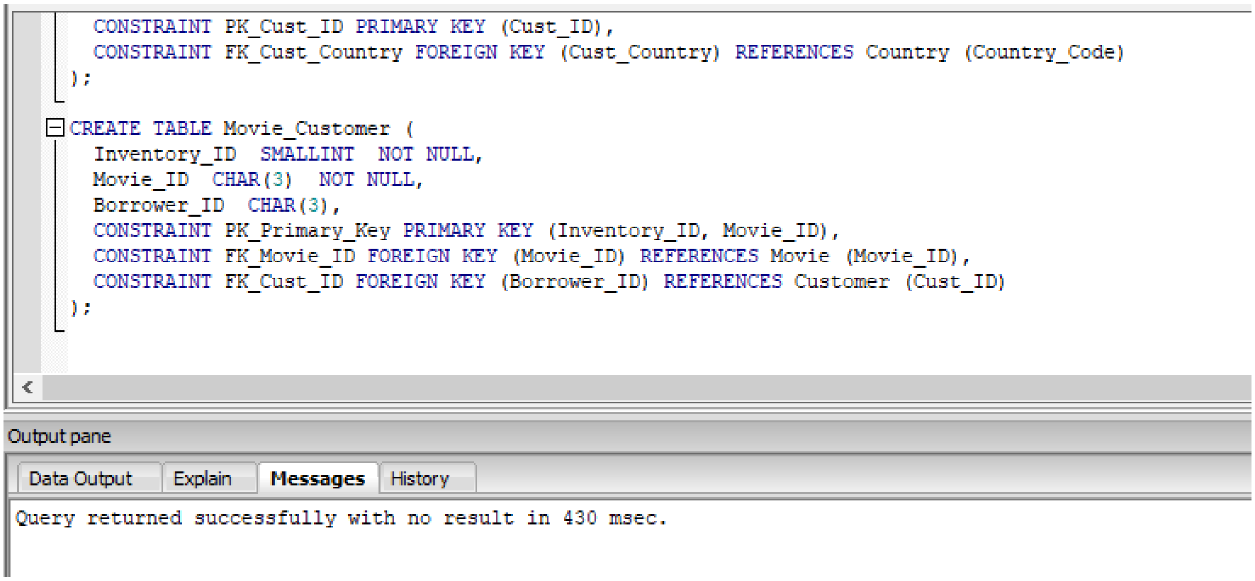
country

country_code	character(3)	« pk »
country_name	character varying(30)	
country_pop	bigint	
country_pk	constraint	« pk »

director

direct_id	character(4)	« pk »
direct_fname	character varying(30)	
direct_lname	character varying(30)	
direct_country	character(3)	« fk »
director_pk	constraint	« pk »
country_fk	constraint	« fk »

Adding the DDL Statements

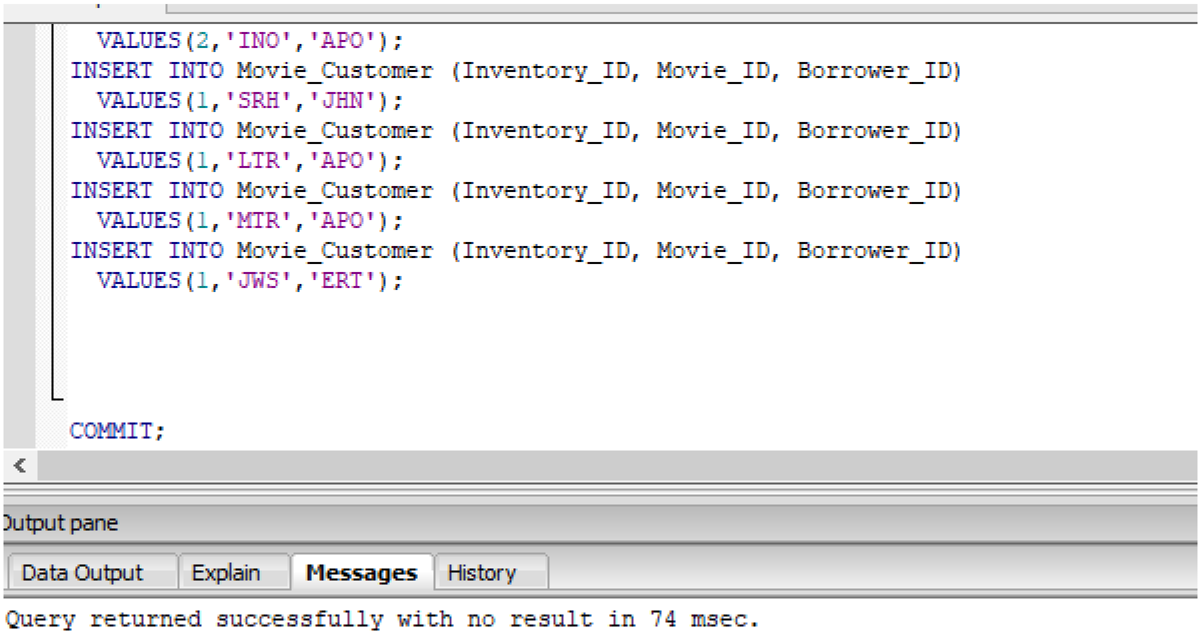


```
    CONSTRAINT PK_Cust_ID PRIMARY KEY (Cust_ID),
    CONSTRAINT FK_Cust_Country FOREIGN KEY (Cust_Country) REFERENCES Country (Country_Code)
);

CREATE TABLE Movie_Customer (
    Inventory_ID  SMALLINT  NOT NULL,
    Movie_ID  CHAR(3)  NOT NULL,
    Borrower_ID  CHAR(3),
    CONSTRAINT PK_Primary_Key PRIMARY KEY (Inventory_ID, Movie_ID),
    CONSTRAINT FK_Movie_ID FOREIGN KEY (Movie_ID) REFERENCES Movie (Movie_ID),
    CONSTRAINT FK_Cust_ID FOREIGN KEY (Borrower_ID) REFERENCES Customer (Cust_ID)
);
```

```
Query returned successfully with no result in 430 msec.
```

Adding the DML Statements



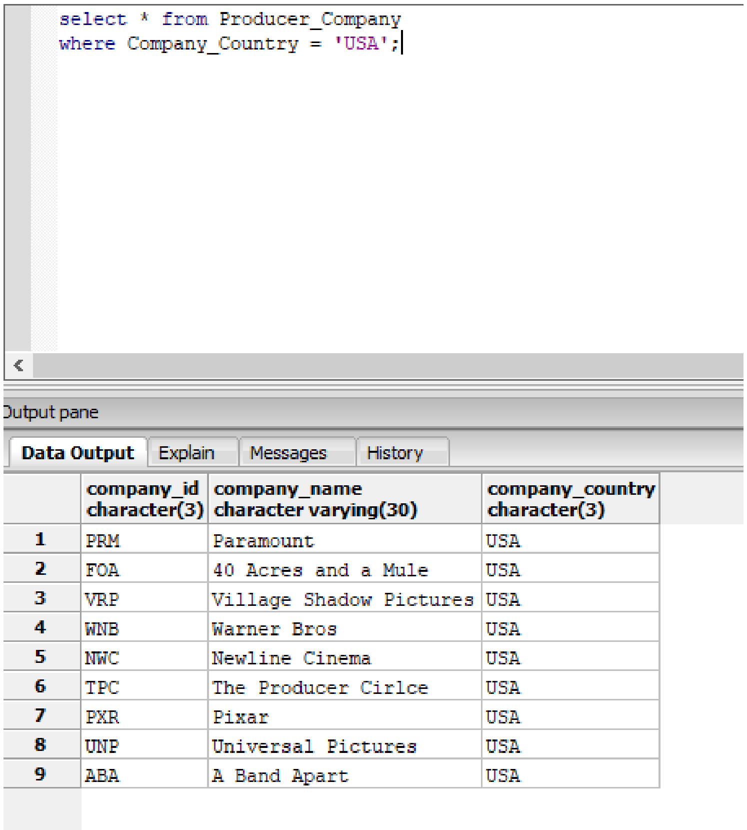
```
  VALUES(2,'INO','APO');
INSERT INTO Movie_Customer (Inventory_ID, Movie_ID, Borrower_ID)
  VALUES(1,'SRH','JHN');
INSERT INTO Movie_Customer (Inventory_ID, Movie_ID, Borrower_ID)
  VALUES(1,'LTR','APO');
INSERT INTO Movie_Customer (Inventory_ID, Movie_ID, Borrower_ID)
  VALUES(1,'MTR','APO');
INSERT INTO Movie_Customer (Inventory_ID, Movie_ID, Borrower_ID)
  VALUES(1,'JWS','ERT');




COMMIT;
```

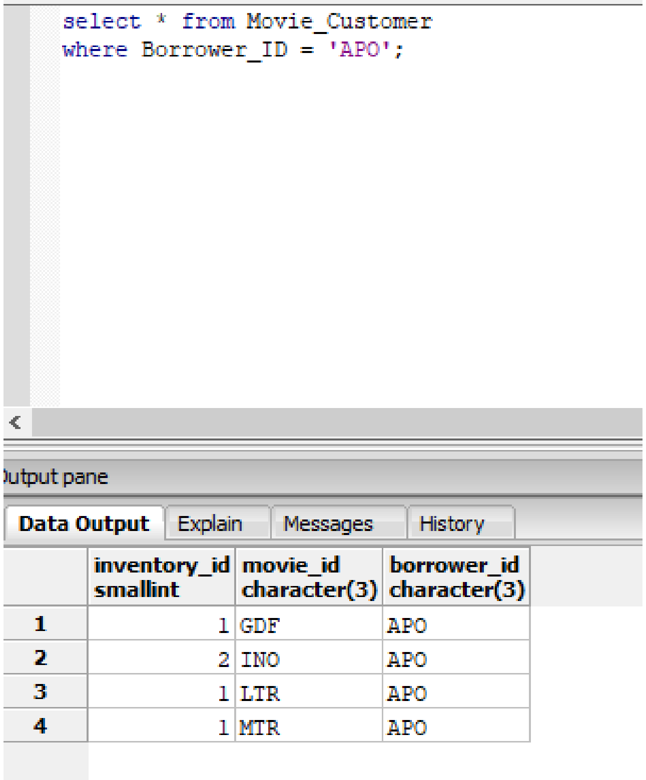
```
Query returned successfully with no result in 74 msec.
```

Select Statements



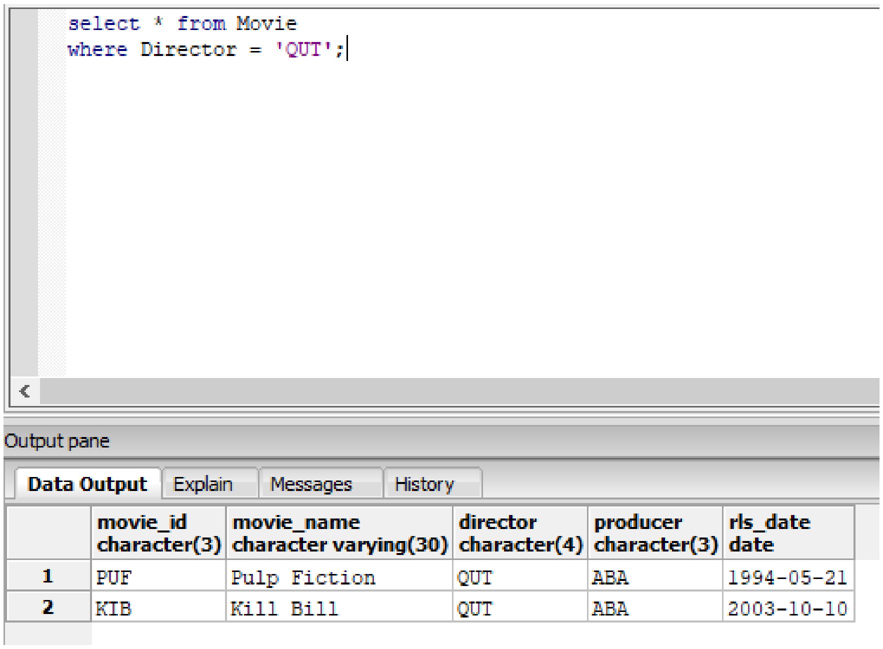
```
select * from Producer_Company
where Company_Country = 'USA';
```

	company_id character(3)	company_name character varying(30)	company_country character(3)
1	PRM	Paramount	USA
2	FOA	40 Acres and a Mule	USA
3	VRP	Village Shadow Pictures	USA
4	WNB	Warner Bros	USA
5	NWC	Newline Cinema	USA
6	TPC	The Producer Cirlce	USA
7	PXR	Pixar	USA
8	UNP	Universal Pictures	USA
9	ABA	A Band Apart	USA



```
select * from Movie_Customer
where Borrower_ID = 'APO';
```

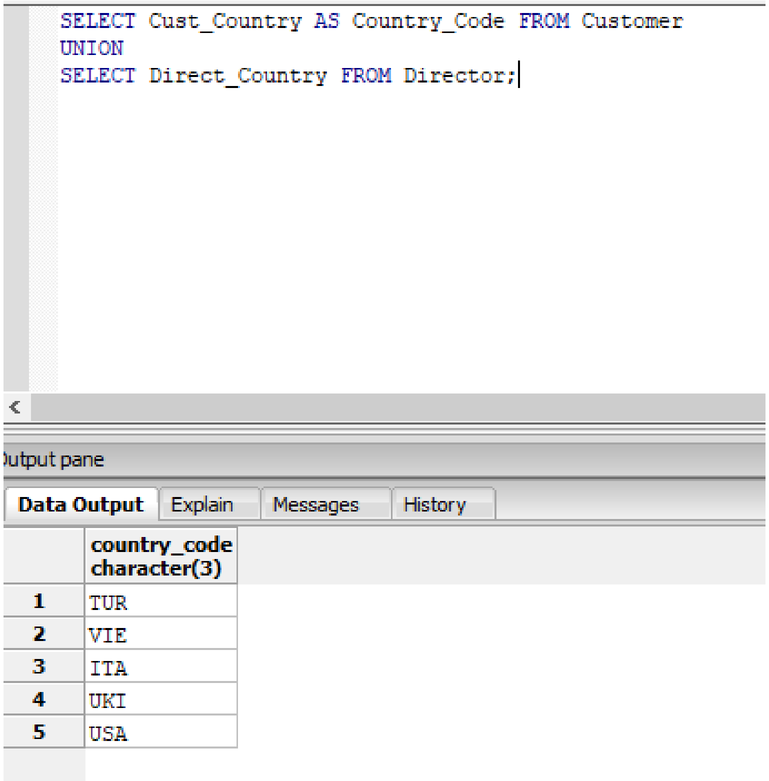
	inventory_id smallint	movie_id character(3)	borrower_id character(3)
1	1	GDF	APO
2	2	INO	APO
3	1	LTR	APO
4	1	MTR	APO



```
select * from Movie
where Director = 'QUT';
```

	movie_id character(3)	movie_name character varying(30)	director character(4)	producer character(3)	rls_date date
1	PUF	Pulp Fiction	QUT	ABA	1994-05-21
2	KIB	Kill Bill	QUT	ABA	2003-10-10

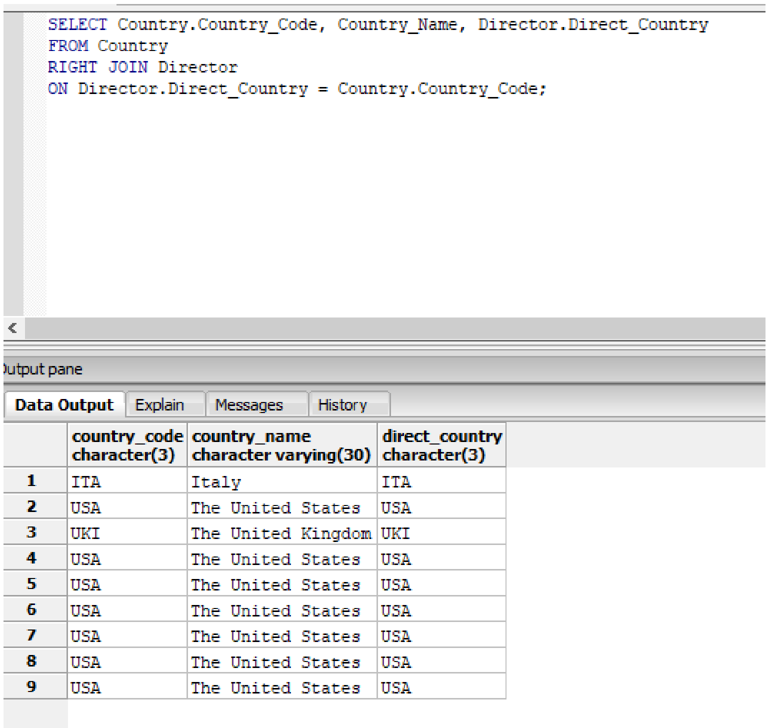
Union



```
SELECT Cust_Country AS Country_Code FROM Customer
UNION
SELECT Direct_Country FROM Director;
```

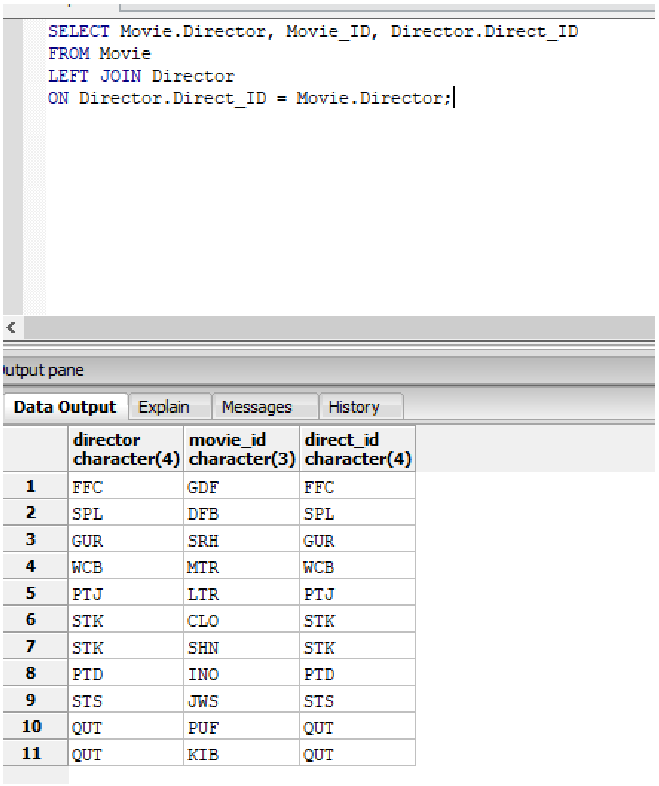
	country_code character(3)
1	TUR
2	VIE
3	ITA
4	UKI
5	USA

Joins



```
SELECT Country.Country_Code, Country_Name, Director.Direct_Country
FROM Country
RIGHT JOIN Director
ON Director.Direct_Country = Country.Country_Code;
```

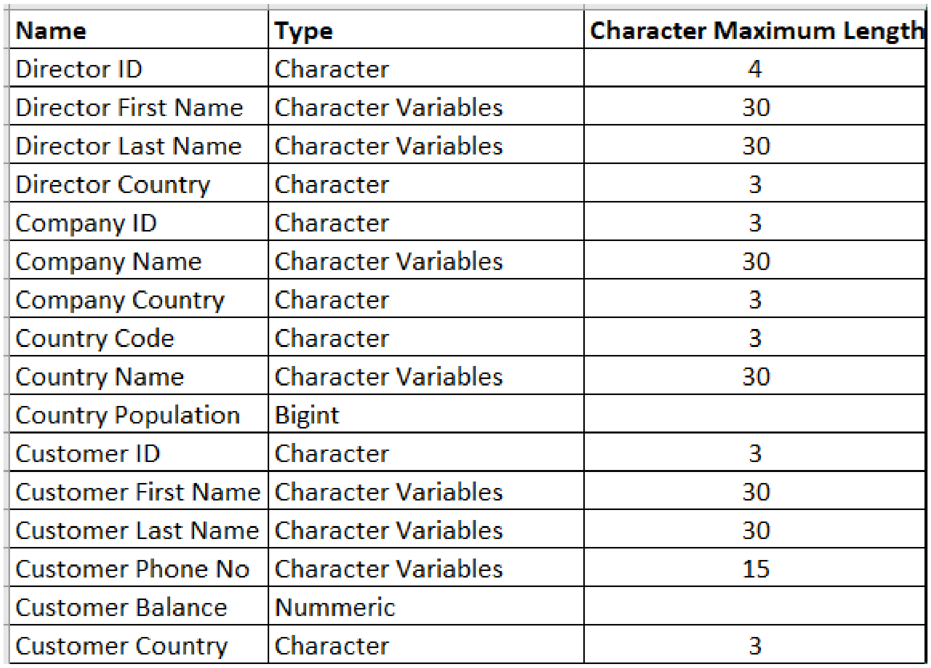
	country_code character(3)	country_name character varying(30)	direct_country character(3)
1	ITA	Italy	ITA
2	USA	The United States	USA
3	UKI	The United Kingdom	UKI
4	USA	The United States	USA
5	USA	The United States	USA
6	USA	The United States	USA
7	USA	The United States	USA
8	USA	The United States	USA
9	USA	The United States	USA



```
SELECT Movie.Director, Movie_ID, Director.Direct_ID
FROM Movie
LEFT JOIN Director
ON Director.Direct_ID = Movie.Director;
```

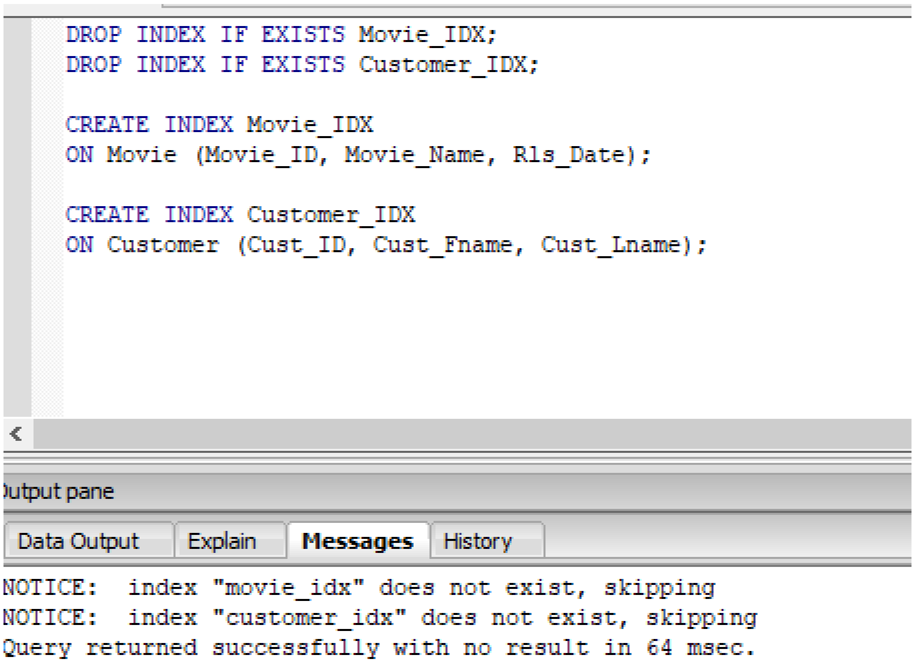
	director character(4)	movie_id character(3)	direct_id character(4)
1	FFC	GDF	FFC
2	SPL	DFB	SPL
3	GUR	SRH	GUR
4	WCB	MTR	WCB
5	PTJ	LTR	PTJ
6	STK	CLO	STK
7	STK	SHN	STK
8	PTD	INO	PTD
9	STS	JWS	STS
10	QUT	PUF	QUT
11	QUT	KIB	QUT

Metadata



Name	Type	Character Maximum Length
Director ID	Character	4
Director First Name	Character Variables	30
Director Last Name	Character Variables	30
Director Country	Character	3
Company ID	Character	3
Company Name	Character Variables	30
Company Country	Character	3
Country Code	Character	3
Country Name	Character Variables	30
Country Population	Bigint	
Customer ID	Character	3
Customer First Name	Character Variables	30
Customer Last Name	Character Variables	30
Customer Phone No	Character Variables	15
Customer Balance	Nummeric	
Customer Country	Character	3

Indexes



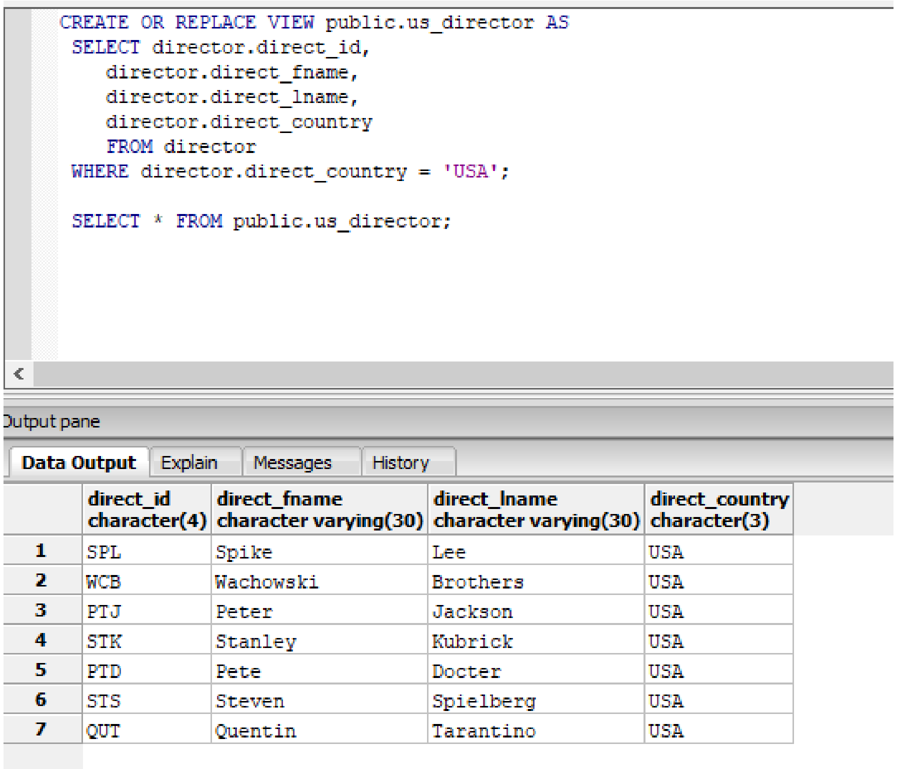
```
DROP INDEX IF EXISTS Movie_IDX;
DROP INDEX IF EXISTS Customer_IDX;

CREATE INDEX Movie_IDX
ON Movie (Movie_ID, Movie_Name, Rls_Date);

CREATE INDEX Customer_IDX
ON Customer (Cust_ID, Cust_Fname, Cust_Lname);
```

```
NOTICE:  index "movie_idx" does not exist, skipping
NOTICE:  index "customer_idx" does not exist, skipping
Query returned successfully with no result in 64 msec.
```

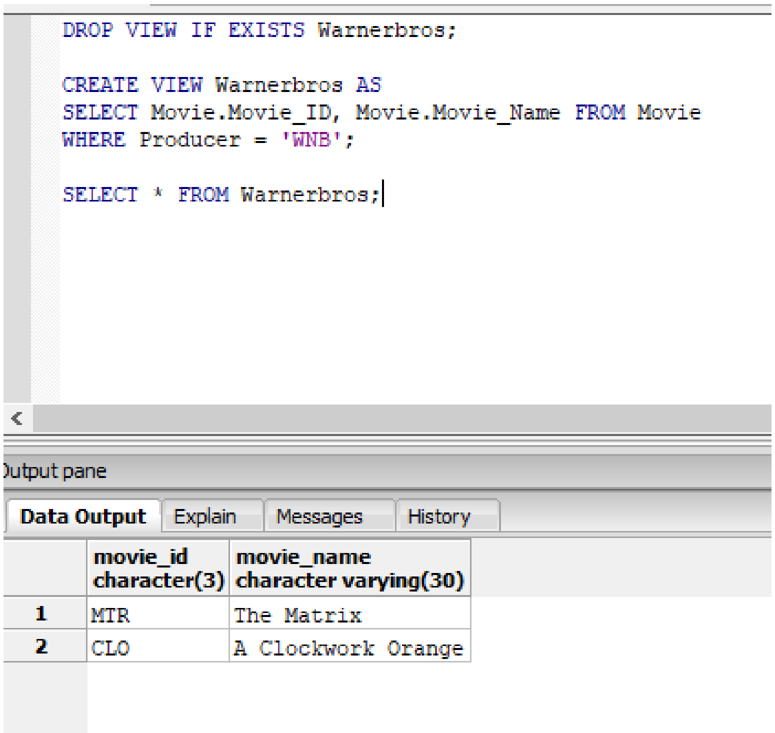
Views



```
CREATE OR REPLACE VIEW public.us_director AS
 SELECT director.direct_id,
    director.direct_fname,
    director.direct_lname,
    director.direct_country
    FROM director
 WHERE director.direct_country = 'USA';

 SELECT * FROM public.us_director;
```

	direct_id character(4)	direct_fname character varying(30)	direct_lname character varying(30)	direct_country character(3)
1	SPL	Spike	Lee	USA
2	WCB	Wachowski	Brothers	USA
3	PTJ	Peter	Jackson	USA
4	STK	Stanley	Kubrick	USA
5	PTD	Pete	Docter	USA
6	STS	Steven	Spielberg	USA
7	QUT	Quentin	Tarantino	USA



```
DROP VIEW IF EXISTS Warnerbros;

CREATE VIEW Warnerbros AS
SELECT Movie.Movie_ID, Movie.Movie_Name FROM Movie
WHERE Producer = 'WNB';

SELECT * FROM Warnerbros;
```

	movie_id character(3)	movie_name character varying(30)
1	MTR	The Matrix
2	CLO	A Clockwork Orange