DBMS PROJECT

TITLE:OTT DATABASE

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Problem Statement

The aim of this database is to provide a view on different OTT(over-the-top) platforms that are currently available and various entertainment options provided by them. This database provides information starting from ways to subscribe to the platform, to, who are the people enrolled to that platform, including details of the video contents provided by them, so it becomes easier for an individual to choose between the available options as per their interest/need.

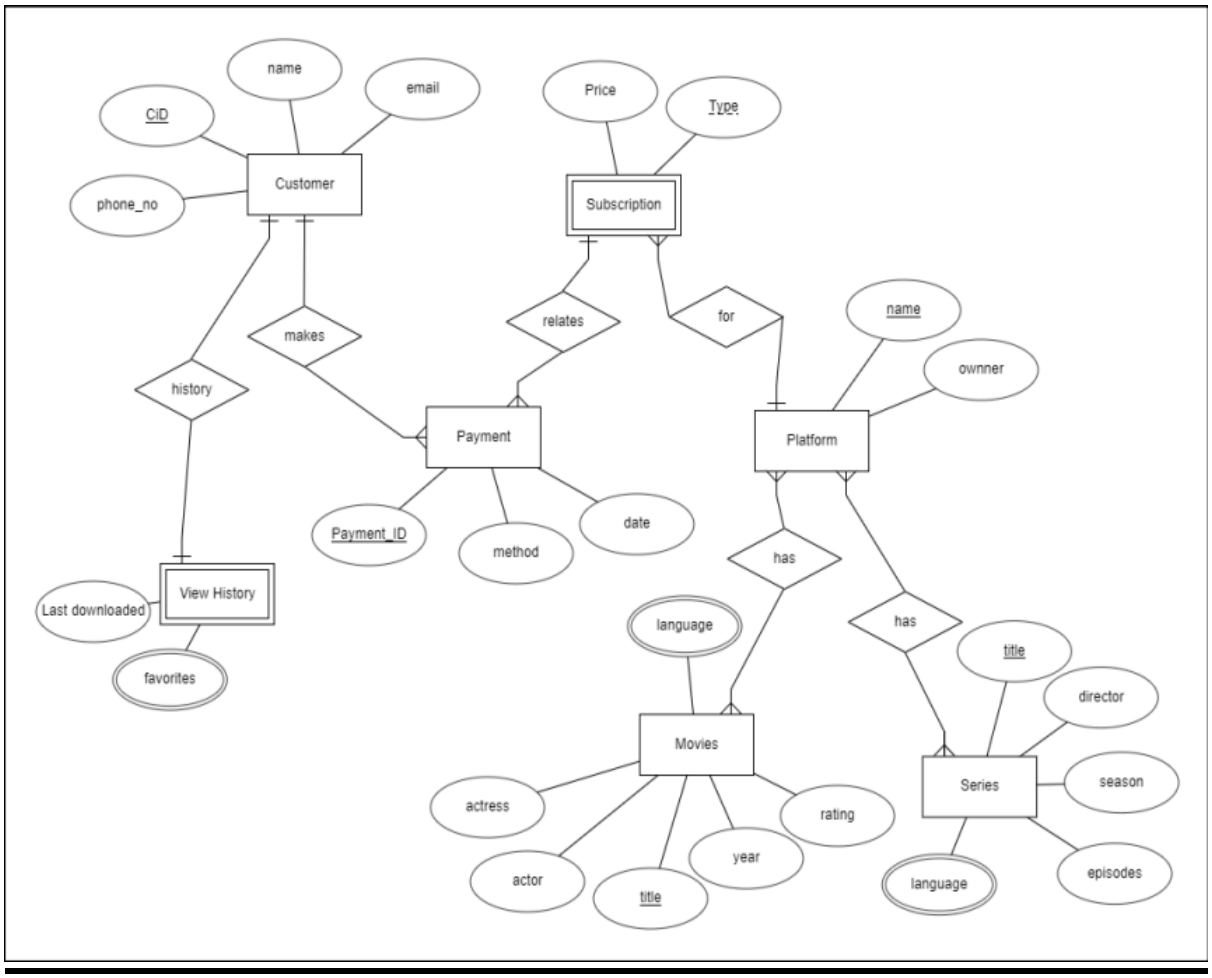
There are many factors that affect the choice of the customer, ranging from price, to amount/quantity of content available or diversity of the content provided by the platform. When stuck in such a situation this project helps to analyse and choose accordingly.

Overview

OTT(over-the-top) refers to film and television content provided via a high-speed internet connection rather than a cable or satellite provider. In this project, we covered aspects like subscription options , which gives information about the various plans available and their price, content information like what movies, series are present and information about each of them.

This database is also providing the details about users associated with various platforms along with content provided by them in order to statistically interpret information like, which platform is now the largest OTT content provider both in terms of content and number of users, etc.

Entity Relationship Diagram



Relational Schema

RELATIONSHIPS:

1. Series-platform:
   This is a many to many relationship, hence need to be separately made into a relation with attributes as the primary keys of participating entities.
   Attributes:
   - Title
   - pname

   Here both the keys present together constitute the primary key.

Hence it clearly states it is in **1NF, 2NF, 3NF** and **BCNF**.

2. Movie-platform:
   Same as the above relationship is this movie-platform:
   This is a many to many relationship, hence need to be separately made into a relation with attributes as the primary keys of participating entities.
   Attributes:
   - Title
   - pname

   Here both the keys present together constitute the primary key.

Hence it clearly states it is in **1NF, 2NF, 3NF** and **BCNF**.

3. For:
   It is many to one relationship, hence need not be created as a separate relation. Instead for this, the primary key on the one side i.e., pname is included on to the many side i.e., subscription.
   As subscription was a weak entity, we have already included it, so need to do it again.

4. Relates:
   It is a one to many relationship, hence no need to create a separate relation, instead we include primary key of one side on to the many side, that is, stype,pname to payment relation.

5. Makes:
   It is also a one to many relationship, hence no need to create a separate relation, instead we include primary key of one side on to the many side, that is, cid to payment relation.

6. History:
   It is a one to one relationship and it is also the determining relationship for the weak entity view history. So the primary key of the relation customer is included in the weak entity that is view history.
   Hence no need to create any separate relation for this relationship history.

ENTITIES:

1. Platform:
   Attributes:
   - Pname
   - Owner

Here there are no multivalued attributes, both the attributes present are atomic and are not repeated, hence this makes the data into **1NF.**

Here the key attribute is ‘pname’ and the non key attribute is ‘owner’ and the attribute owner fully depends on the key attribute pname, hence it is in **2NF.**

Pname ---- > owner

Clearly it is in **3NF** and **BCNF** also as there are no transitively dependent non key attributes and the FD has the only key attribute at its determinant(left).

2. Movies:
   Attributes:
   - Title
   - Year
   - Rating
   - Actor
   - Actress
   - Languages (multi valued)

Here the attribute languages is a multi valued attribute hence it gives rise to another relation named '**m-languages'** which contains the primary key of this relation movies i.e., title and the attribute language as lang1,lang2,lang3.

Hence the new relations formed are:

Movies:
- Title
- Year
- Rating
- Actor
- Actress

m-languages:

title
lang1
lang2
lang3
lang4

After this lossless decomposition both the relations thus formed are in **1NF** as there are no multivalued attributes and there is no repetition of attributes.

Here all the attributes of both the relations are fully dependent on the primary key 'title' i.e., The title of a movie determines its year, rating, actor, actress and similarly it also determines in what languages it is present in the relation m-languages. Hence both these are also in **2NF**.

As the non key attributes are non transitively dependent on the key attribute and the only FD has key attribute as its determinant these are also in **3NF** and **BCNF**.

3. Series:
   Attributes:
   - Title
   - Director
   - Seasons
   - Episodes
   - Languages (multi valued)

In the similar manner as that of the relation movies, series also has languages as a multi valued attribute and that has to be decomposed into a separate relation.
That results in:

Series:

- <u>Title</u>
- Director
- Seasons
- Episodes

s-languages:

<u>title</u>
lang1
lang2
lang3
lang4

It is the same case as that of the relations movies and m-languages.
Hence clearly after this lossless decomposition both the relations thus formed are in **1NF** as there are no multivalued attributes and there is no repetition of attributes.

Here all the attributes of both the relations are fully dependent on the primary key ‘title’ i.e., The title of a series determines its director, seasons, episodes and similarly it also determines in what languages it is present in the relation s-languages. Hence both these are also in **2NF**.

As the non key attributes are non transitively dependent on the key attribute and the only FD has key attribute as its determinant these are also in **3NF** and **BCNF**.

4. Subscription:
   Attributes:
   - Price
   - Stype

This is a weak entity, hence from its determining relationship ‘for’ we get the primary key of the relation platform which is ‘pname’.

Hence this becomes:
Subscription:

- Price
- Stype
- pname

The attributes stype, pname together constitute the primary key.
And this key attribute determines the non key attribute price.

{ stype, pname}----- > price

Hence, this is in **1NF** (no multivalued attributes) ,**2NF**(fully dependent non key attributes), **3NF**(no transitive dependence between key and non key attributes) and also in **BCNF** (determinant of fds are key attributes).

5. Payment:
   Attributes:
   - Payment id
   - Method
   - Date_of_payment
   - Stype
   - Pname
   - cid

Payment id------ > {method, date_of _payment, stype, pname,cid}

This is yet another simple relation which does not have any multivalued attributes making it in **1NF** and as the primary key determines the other two attributes, this is also in **2NF, 3NF, BCNF** for the same reasons stated so far.

6. Customer:
   Attributes:
   - Cid
   - Name
   - Email
   - Phone number

Here phone number is not multivalued, we are considering only one phone number per customer.
Hence all attributes are atomic, which says it is in **1NF**.

Cid ----> {name, email, phone number}

Hence clearly from the fd mentioned above this is in **2NF, 3NF** and also in **BCNF** for the same explanation that is stated earlier (definitions of the corresponding normal forms).

7. View History:
   Attributes:
   - Last downloaded
   - Favourites (multi valued)

It is a weak entity, hence from its determining relationship history we get the primary key of the relation customer which is cid.
And as the attribute favourites is multivalued, this relation has to be decomposed.
Hence after decomposition thus results in:
View history:

- Cid
- Last downloaded

Favourites:

- Cid
- Fav series
- Fav movie

Summary:

The relations to be created are:

- ❑ Platform
- ❑ Series
- ❑ Movies
- ❑ S-languages
- ❑ M-languages
- ❑ Series-platform
- ❑ Movie-platform
- ❑ Subscription
- ❑ Customer
- ❑ Payment
- ❑ View history
- ❑ Favourites

Creation and implementation of the database in sql

1. Platform

```
create table Platform
(
name varchar(30) primary key,
owner varchar(30)
);

insert into Platform values('Netflix','Reed Hastings');
insert into Platform values('Amazon Prime','Jeffrey Preston');
insert into Platform values('Disney+Hotstar','Sunil Rayan');
insert into Platform values('Aha','Allu Aravind');
insert into Platform values('Zee5','Punit Goenka');
insert into Platform values('JioCinema','Mukesh Ambani');
```

2. Series

```
create table Series
(
Title varchar(30) primary key,
Director varchar(30),
Seasons int,
Episodes int
);

insert into Series values('Dark','Baranbo Odar',3,26);
insert into Series values('Demon Slayer','Haruo Satozaki',1,26);
insert into Series values('Daredevil','Mark Steven',3,13);
insert into Series values('Mirzapur','Karan Anshuman',2,19);
insert into Series values('The Family Man','Raj and D.K',1,10);
insert into Series values('The Good Doctor','Mike Listo',4,18);
insert into Series values('Wanda Vision','Mott Shakman',1,9);
```

```
insert into Series values('Hostages','Sudhir Mishra',2,11);
insert into Series values('Hara HaraMahadeva','Deepak Garg',9,50);
insert into Series values('Locked','Pradeep Deva',1,7);
insert into Series values('Addham','Barath Neelakantan',1,3);
insert into Series values('CommitMental','Pavan Sadineni',1,5);
insert into Series values('Sun Flower','Rahul Sengupta',1,3);
insert into Series values('Hindmata','Srishti Jayin',1,5);
```

3. Movies

```
create table Movies
(
Title varchar(30) primary key,
year int,
rating int,
Actor varchar(30),
Actress varchar(30)
);

insert into Movies values('Interstellar',2014,72,'Matthew
McConaughey','Anne Hathaway');
insert into Movies values('Edge of tomorrow',2014,91,'Tom Cruise','Emily
Blunt');
insert into Movies values('Yeh Javani Hai Deewani',2014,95,'Ranbir
Kapoor','Deepika Padukone');
insert into Movies values('Back To The Future',1985,96,'Michael J
Fox','ChirstopherLyod');
insert into Movies values('Master',2021,93,'Vijay Talapathy','Malavika');
insert into Movies values('KuchKuchHita Hai',1998,92,'Sharukh
Khan','Kajol');
insert into Movies values('MS Dhoni : The Untold
Story',2016,75,'Sushant','Kiara Advani');
insert into Movies values('Chhichore',2019,97,'Sushant','Shraddha Kapoor');
```

```
insert into Movies values('Super Over',2012,96,'Naveen
Chandra','Chandini');
insert into Movies values('Sanam Teri
Kasam',2016,90,'Harshvardhan','Mawra Hocane');
insert into Movies values('Colour Photo',2020,98,'Suhas','Chandini
Chowdary');
insert into Movies values('Roohi',2021,67,'Rajkummar rao','Janhvi Kapoor');
insert into Movies values('Taxiwala',2018,83,'Vijay Devarkonda','Priyanka
Jawalkar');
```

4. S-languages

```
create table s_languages
(
s_titlevarchar(30) primary key,
lang1 varchar(30),
lang2 varchar(30),
lang3 varchar(30),
lang4 varchar(30)
);

insert into s_languages(s_title,lang1,lang2)
values('Dark','German','English');
insert into s_languages(s_title,lang1,lang2) values('Demon
Slayer','Japanese','English');
insert into s_languages(s_title,lang1) values('Daredevil','English');
insert into s_languages(s_title,lang1,lang2)
values('Mirzapur','Hindi','Telugu');
insert into s_languagesvalues('The Family
Man','Hindi','English','Tamil','Telugu');
insert into s_languagesvalues('The Good
Doctor','English','Spanish','Italian','Chinese');
insert into s_languagesvalues('Wanda
Vision','English','Hindi','Telugu','Tamil');
```

```
insert into s_languages
values('Hostages','Hindi','Telugu','Marati','Kannada');
insert into s_languages(s_title,lang1,lang2) values('Hara
HaraMahadeva','Hindi','Telugu');
insert into s_languages(s_title,lang1,lang2)
values('Locked','Kannada','Telugu');
insert into s_languages(s_title,lang1,lang2)
values('Addham','Telugu','Kannada');
insert into s_languages(s_title,lang1,lang2)
values('CommitMental','Telugu','Hindi');
insert into s_languages(s_title,lang1) values('Sun Flower','Hindi');
insert into s_languages(s_title,lang1) values('Hindmata','Hindi');
```

5. M-languages

```
create table m_languages
(
m_titlevarchar(30) primary key,
lang1 varchar(30),
lang2 varchar(30),
lang3 varchar(30),
lang4 varchar(30)
);

insert into m_languages(m_title,lang1,lang2)
values('Interstellar','English','Hindi');
insert into m_languages(m_title,lang1,lang2) values('Edge of
tomorrow','English','Hindi');
insert into m_languages(m_title,lang1,lang2) values('Yeh Javani Hai
Deewani','Hindi','English');
insert into m_languages(m_title,lang1,lang2) values('Back To The
Future','English','Hindi');
insert into m_languages
values('Master','Tamil','Telugu','Malayalam','Kaannada');
```

```
insert into m_languages(m_title,lang1) values('KuchKuchHitaHai','Hindi');
insert into m_languages(m_title,lang1,lang2) values('MS Dhoni : The Untold
Story','Hindi','English','Telugu');
insert into m_languages(m_title,lang1) values('Chhichore','Hindi');
insert into m_languages(m_title,lang1) values('Super Over','Telugu');
insert into m_languages(m_title,lang1) values('Sanam Teri Kasam','Hindi');
insert into m_languages(m_title,lang1) values('Colour Photo','Telugu');
insert into m_languages(m_title,lang1) values('Roohi','Hindi');
insert into m_languages(m_title,lang1) values('Taxiwala','Telugu');
```

6. Series-platform

```
create table series_platform
(
pnamevarchar(30),
stitlevarchar(30),
primary key(pname,stitle),
foreign key (pname) references Platform(name),
foreign key (stitle) references Series(title)
);

select * from series_platform;
insert into series_platform values('Netflix','Dark');
insert into series_platform values('Netflix','Demon Slayer');
insert into series_platform values('Netflix','Daredevil');
insert into series_platform values('Amazon Prime','Mirzapur');
insert into series_platform values('Amazon Prime','The Family Man');
insert into series_platform values('Amazon Prime','The Good Doctor');
insert into series_platform values('Disney+Hotstar','Wanda Vision');
insert into series_platform values('Disney+Hotstar','Hostages');
insert into series_platform values('Disney+Hotstar','Hara Hara Mahadeva');
insert into series_platform values('Aha','Locked');
insert into series_platform values('Aha','Addham');
```

```
insert into series_platform values('Aha','CommitMental');
insert into series_platformvalues('Zee5','Sun Flower');
insert into series_platform values('JioCinema','Hindmata');
```

7. Movie-platform

```
create table series_platform
(
pnamevarchar(30),
stitlevarchar(30),
primary key(pname,stitle),
foreign key (pname) references Platform(name),
foreign key (stitle) references Series(title)
);

insert into series_platform values('Netflix','Dark');
insert into series_platformvalues('Netflix','Demon Slayer');
insert into series_platform values('Netflix','Daredevil');
insert into series_platformvalues('Amazon Prime','Mirzapur');
insert into series_platformvalues('Amazon Prime','The Family Man');
insert into series_platformvalues('Amazon Prime','The Good Doctor');
insert into series_platformvalues('Disney+Hotstar','Wanda Vision');
insert into series_platform values('Disney+Hotstar','Hostages');
insert into series_platformvalues('Disney+Hotstar','Hara Hara Mahadeva');
insert into series_platform values('Aha','Locked');
insert into series_platform values('Aha','Addham');
insert into series_platform values('Aha','CommitMental');
insert into series_platformvalues('Zee5','Sun Flower');
insert into series_platform values('JioCinema','Hindmata');
```

8. Subscription

```
create table subscription(
pname varchar2(16),
stype varchar2(16),
price int,
primary key (pname,stype));

insert into subscription(pname,stype,price) values('NETFLIX','MOBILE',199);
insert into subscription(pname,stype,price) values('NETFLIX','BASIC',499);
insert into subscription(pname,stype,price)
values('NETFLIX','STANDARD',649);
insert into subscription(pname,stype,price)
values('NETFLIX','PREMIUM',799);
insert into subscription(pname,stype,price) values('PRIME
VIDEO','MONTHLY',129);
insert into subscription(pname,stype,price) values('PRIME
VIDEO','ANNUAL',999);
insert into subscription(pname,stype,price) values('HOTSTAR','VIP',399);
insert into subscription(pname,stype,price)
values('HOTSTAR','PREMIUM',1499);
insert into subscription(pname,stype,price) values('ZEE5','MONTHLY',99);
insert into subscription(pname,stype,price) values('ZEE5','ANNUAL',999);
insert into subscription(pname,stype,price) values('AHA','3-MONTH',149);
insert into subscription(pname,stype,price) values('AHA','ANNUAL',699);
insert into subscription(pname,stype,price) values('JIO
CINEMA','MONTHLY',249);
insert into subscription(pname,stype,price) values('JIO CINEMA','3-
MONTH',549);
insert into subscription(pname,stype,price) values('JIO
CINEMA','ANNUAL',1499);
```

9. Customer

```
create table customer(
cid char(6),
cname varchar2(16),
email varchar2(32),
phnnodecimal(10),
primary key (cid));

insert into customer(cid,cname,email,phnno)
values('C19005','JAITHRA','MEDA2001@YAHOO.COM',8331832702);
insert into customer(cid,cname,email,phnno)
values('C19099','GAYATHRI','TAMMA176@GMAIL.COM',8106857432);
insert into customer(cid,cname,email,phnno)
values('C20311','VIVEK','VIVEK357@GMAIL.COM',9505018250);
insert into customer(cid,cname,email,phnno)
values('C20279','SIVA','KASINA.SIVA@GMAIL.COM',8985375408);
insert into customer(cid,cname,email,phnno)
values('C21370','SRAVYA','SRAVYA.KASINA@GMAIL.COM',8309365659);
insert into customer(cid,cname,email,phnno)
values('C19130','AMRUTHA','AMRUTHA2000@GMAIL.COM',8000632898);
insert into customer(cid,cname,email,phnno)
values('C20270','SOUMYA','SOUMYA1999@GMAIL.COM',9441309882);
insert into customer(cid,cname,email,phnno)
values('C21699','NIRMAL','NIRMALDESAI2002@GMAIL.COM',9701955681);
insert into customer(cid,cname,email,phnno)
values('C21734','GANESH','KASINA176@GMAIL.COM',9966383533);
insert into customer(cid,cname,email,phnno)
values('C20473','HASITA','HASITA06@GMAIL.COM',9330800888);
```

10. Payment

```
create table payment(
paymentiddecimal(7),
pmethod varchar2(16),
date_of_payment date,
stype varchar2(16),
pname varchar2(16),
cid char(6),
primary key(paymentid),
foreign key (pname,stype) references subscription_proj(pname,stype),
foreign key (cid) references customer_proj(cid));

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(5276348,'UPI',to_date('2021-3-1','yyyy-mm-
dd'),'BASIC','NETFLIX','C21370');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(1334692,'DEBITCARD',to_date('2021-4-1','yyyy-mm-dd'),'3-
MONTH','AHA','C21734');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(1793624,'DEBITCARD',to_date('2020-1-12','yyyy-mm-
dd'),'ANNUAL','PRIME VIDEO','C20270');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(3972462,'CREDITCARD',to_date('2019-2-2','yyyy-mm-
dd'),'STANDARD','NETFLIX','C19099');
```

```
insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(4563472,'UPI',to_date('2020-6-17','yyyy-mm-
dd'),'MONTHLY','ZEE5','C21699');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(4734672,'UPI',to_date('2020-7-2','yyyy-mm-
dd'),'BASIC','NETFLIX','C20311');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(7473942,'DEBITCARD',to_date('2020-9-11','yyyy-mm-
dd'),'ANNUAL','JIO CINEMA','C21699');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(6347122,'CREDITCARD',to_date('2020-4-17','yyyy-mm-
dd'),'PREMIUM','HOTSTAR','C20279');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(1214322,'DEBITCARD',to_date('2021-3-21','yyyy-mm-
dd'),'MOBILE','NETFLIX','C19130');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(9371211,'CREDITCARD',to_date('2020-12-19','yyyy-mm-
dd'),'ANNUAL','AHA','C20473');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
```

```
values(6713121,'CREDITCARD',to_date('2020-1-2','yyyy-mm-
dd'),'ANNUAL','ZEE5','C21734');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(1213147,'UPI',to_date('2021-3-27','yyyy-mm-dd'),'3-
MONTH','AHA','C20270');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(2143179,'DEBITCARD',to_date('2020-5-3','yyyy-mm-
dd'),'PREMIUM','NETFLIX','C20279');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(5326343,'CREDITCARD',to_date('2021-2-1','yyyy-mm-dd'),'3-
MONTH','JIO CINEMA','C19130');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(4329977,'DEBITCARD',to_date('2021-3-15','yyyy-mm-
dd'),'VIP','HOTSTAR','C19099');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(8264338,'CREDITCARD',to_date('2019-3-9','yyyy-mm-
dd'),'ANNUAL','PRIME VIDEO','C20279');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(5432734,'CREDITCARD',to_date('2020-4-27','yyyy-mm-
dd'),'ANNUAL','AHA','C19005');
```

```
insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(2346912,'UPI',to_date('2021-2-28','yyyy-mm-
dd'),'MONTHLY','PRIME VIDEO','C20473');

insert into
payment(paymentid,pmethod,date_of_payment,stype,pname,cid)
values(9347113,'DEBITCARD',to_date('2019-1-2','yyyy-mm-
dd'),'STANDARD','NETFLIX','C21734');
```

11. View history

```
create table view_history
(
Cid char(6) primary key,
last_downloadedvarchar(30)
);


insert into view_historyvalues('C19005','Super Over');
insert into view_history values('C19099','Dark');
insert into view_history values('C20311','Daredevil');
insert into view_historyvalues('C20279','Wanda Vision');
insert into view_history values('C21370','Interstellar');
insert into view_history values('C19130','Roohi');
insert into view_history values('C20270','Locked');
insert into view_historyvalues('C21699','Sanam Teri Kasam');
insert into view_history values('C21734','Taxiwala');
insert into view_history values('C20473','Master');
```

12. Favourites

```
create table Favourites
(
Cid char(6) primary key,
Fav_seriesvarchar(30),
Fav_movievarchar(30)
);

insert into Favourites values('C19005','Locked','Super Over');
insert into Favourites values('C19099','Daredevil','Interstellar');
insert into Favourites values('C20311','Demon Slayer','Edge of Tomorrow');
insert into Favourites values('C20279','Wanda Vision','Chhichore');
insert into Favourites values('C21370','Dark','Interstellar');
insert into Favourites values('C19130','Roohi','Sanam Teri Kasam');
insert into Favourites values('C20270','Locked','Super Over');
insert into Favourites values('C21699','Roohi','Sanam Teri Kasam');
insert into Favourites values('C21734','Sun Flower','Taxiwala');
insert into Favourites values('C20473','Mirzapur','Back To The Future');
```

Thank you