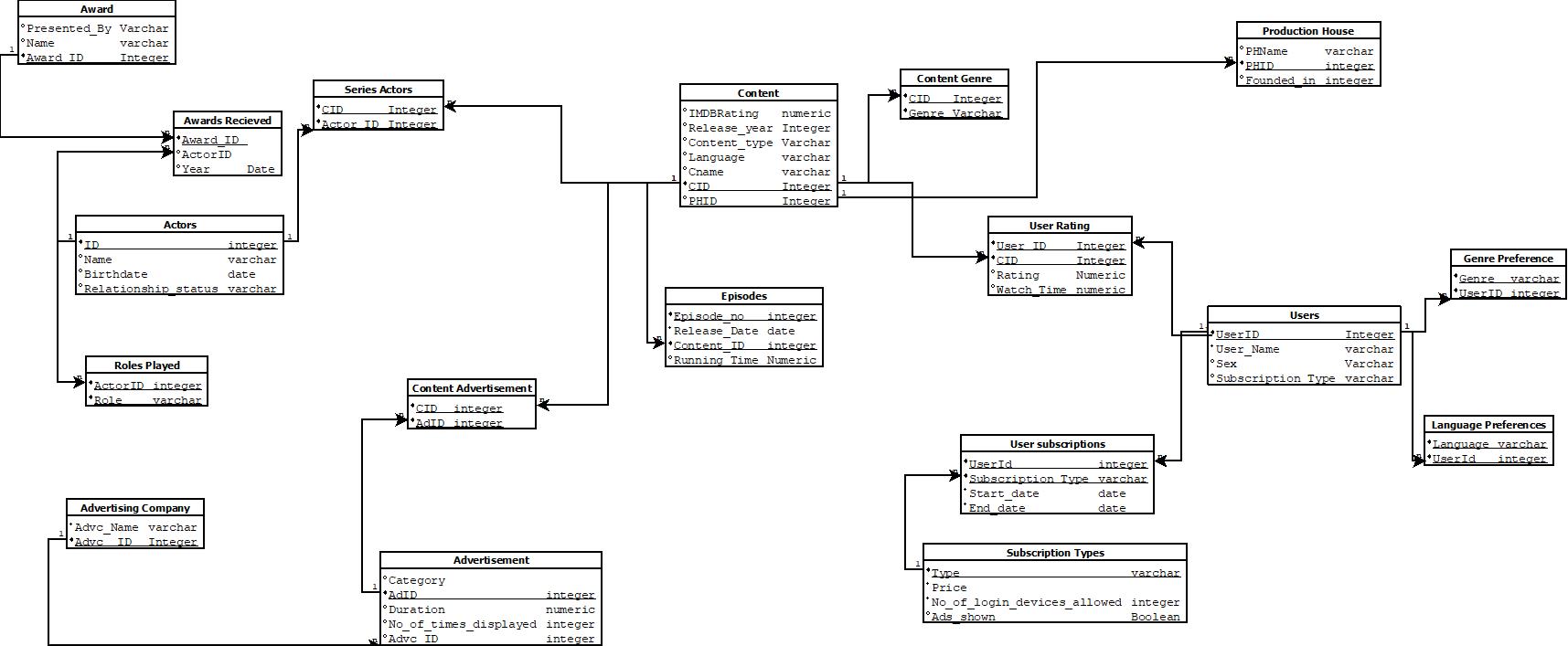
**Relational Schema**

****

**Minimal FD Set**

**User\_Id** -> {username,sex }

**SubsType** -> {Price, No\_of\_devices, ads\_shown}

**{UserID ,Substype}** -> {start\_date, end\_date}

**{UserID,Content\_ID}** -> {rating, watch\_time}

**CID** -> {IMDB, Release\_year, Content\_type, Language, Cname, PHID}

**PHID** -> { PHName, Founded\_in}

**{Episode\_no, Content ID}** -> {Run\_time, Release\_date}

**Actor\_ID** -> {Name, Birthdate, Relationship\_status}

**Award\_ID** -> {Name, presented\_by}

**{Actor\_id, Award\_id}** -> {Year}

**AdId** -> {Category, Duration, number\_of\_times\_displayed, Advc\_id}

**Advc\_id** -> {Advc-Name}

**Proof of the fact that all the relations are in BCNF**

**User relation**

The FD set for the user relation is as follows:

**User\_Id** -> {username, sex}

Here the key is the user ID.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Genre Preferences Relation**

Since all the attributes of this relation are prime (i.e part of the key), the relation is in BCNF.

**Language Preferences Relation**

Since all the attributes of this relation are prime (i.e part of the key), the relation is in BCNF.

**User Rating**

The FD set for the episodes relation is as follows:

**{User\_id, Content\_id}** -> {rating, watch\_time}

Here the key is the User\_id, Content\_id which is a composite key.

Since all other attributes are determined by the composite key attribute only the user relation is in BCNF.

**User Subscription**

The FD set for the user subscription relation is as follows:

**{User\_id, Subscription\_type}** -> {start\_date, end\_date}

Here the key is the User\_id, Substype which is a composite key.

Since all other attributes are determined by the composite key attribute only the user relation is in BCNF.

**Subscription Type**

The FD set for the user relation is as follows:

**Subs Type** -> {Price,No\_of\_devices, ads\_shown}

Here the key is the substype.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Content Relation**

The FD set for the content relation is as follows:

**CID** -> {IMDB, Release\_year, Content\_type, Language, Cname, PHID}

Here the key is the CID.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Content Genre Relation**

Since all the attributes of this relation are prime (i.e part of the key), the relation is in BCNF.

**Episodes Relation**

The FD set for the episodes relation is as follows:

**{Episode\_no, ContentID}** -> {Run\_time, Release\_date}

Here the key is the Episode\_no, ContentIDwhich is a composite key.

Since all other attributes are determined by the composite key attribute only the user relation is in BCNF.

**Production House relation**

The FD set for the production house relation is as follows:

PHID -> { PHName, Founded\_in}

Here the key is PHID.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Content Advertisement Relation**

Since all the attributes of this relation are prime (i.e part of the key), the relation is in BCNF.

**Advertisement Relation**

The FD set for the advertisement relation is as follows:

AdID-> {Category, Duration, number of times displayed, advc\_id}

Here the key is AdID.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Advertising Company Relation**

The FD set for the advertisement relation is as follows:

Advc\_ID -> {Advc\_Name}

Here the key is Advc\_ID.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Series Actors Relation**

Since all the attributes of this relation are prime (i.e part of the key), the relation is in BCNF.

**Actors Relation**

The FD set for the actors relation is as follows:

Actor**\_**ID -> {Name, Birthdate, Relationship\_status}

Here the key is Actor\_ID.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Awards recieved**

The FD set for the actors relation is as follows:

{Actor\_id, Award\_id} -> {Year}

Here the key is {Actor\_id, Award\_id} which is a composite key.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Award relation**

The FD set for the actors relation is as follows:

Award id-> {Name, presented\_by}

Here the key is Award\_ID.

Since all other attributes are determined by the key attribute only the user relation is in BCNF.

**Roles played relation**

Since all the attributes of this relation are prime (i.e part of the key), the relation is in BCNF.

**DDL Script**

Create Schema OTT

Create Table Production\_House(

PHName varchar,

PHID integer,

Founded\_in integer,

Primary Key(PHID)

);

Create Table Content(

IMDBrating Decimal(2),

release\_year Integer,

Content\_type Varchar,

Langauage varchar,

Cname varchar,

CID Integer,

PHID Integer,

Primary Key(CID),

foreign key(PHID) references Production\_House(PHID)

);

Create Table Content\_Genre(

CID Integer,

Genre Varchar,

Primary Key(CID,Genre)

);

Create Table Episodes (

Episode\_no Integer,

Release\_Date date,

CID integer,

Running\_Time Numeric,

Primary Key(Episode\_no,CID),

Foreign Key(CID) references Content(CID)

);

Create Table Users (

UserID integer,

User\_Name varchar,

Sex varchar,

Primary Key(UserID)

);

Create Table User\_Rating (

User\_ID Integer,

CID Integer,

Rating Numeric,

WatchTime Numeric,

Primary Key(User\_ID, CID),

foreign key (User\_ID) references Users(UserID),

foreign key (CID) references Content(CID)

);

Create Table Subscription\_Type (

SubsType varchar,

Price integer,

No\_of\_login\_devices\_allowed Integer,

Ads\_shown Boolean,

Primary Key(SubsType)

);

Create Table User\_subscriptions (

UserID Integer,

SubsType Varchar,

Start\_date date,

End\_date date,

Primary Key(UserID, SubsType),

foreign key (UserID) references Users(UserID),

foreign key (SubsType) references Subscription\_Type(SubsType)

);

Create Table Genre\_Preference (

Genre varchar,

UserID integer,

Primary Key(Genre, UserID),

foreign key (UserID) references Users(UserID)

);

Create Table Language\_Preferences (

Language varchar,

UserId integer,

Primary Key(Language, UserId),

foreign key (UserID) references Users(UserID)

);

Create Table Actors (

ActorID integer,

Name varchar,

Birthdate date,

Relationship\_status varchar,

Primary key(ActorID)

);

Create Table Series\_Actors (

CID Integer,

ActorID Integer,

Primary Key(CID,ActorID),

foreign key (CID) references Content(CID),

foreign key (ActorID) references Actors(ActorID)

);

Create Table Award (

Presented\_By varchar,

Name varchar,

Award\_ID Integer,

Primary Key(Award\_ID)

);

Create Table Awards\_Recieved (

Award\_ID integer,

ActorID integer,

Year Date,

Primary Key(Award\_ID),

foreign key (ActorID) references Actors(ActorID),

foreign key (Award\_ID) references Award(Award\_ID)

);

Create Table Roles\_Played (

ActorID integer,

Roles varchar,

Primary Key(ActorID, Roles),

foreign key (ActorID) references Actors(ActorID)

);

Create Table Advertising\_Company (

Advc\_Name Varchar,

Advc\_ID integer,

Primary key (Advc\_ID)

);

Create Table Advertisement (

Category varchar,

AdID integer,

Duration numeric,

No\_of\_times\_displayed Integer,

Advc\_ID integer,

Primary Key(AdID),

foreign key (Advc\_ID) references Advertising\_Company(Advc\_ID)

);

Create Table Content\_Advertisment (

CID integer,

AdID integer,

Primary Key (CID,AdID),

foreign key (AdID) references Advertisement(AdID),

foreign key (CID) references Content(CID)

);