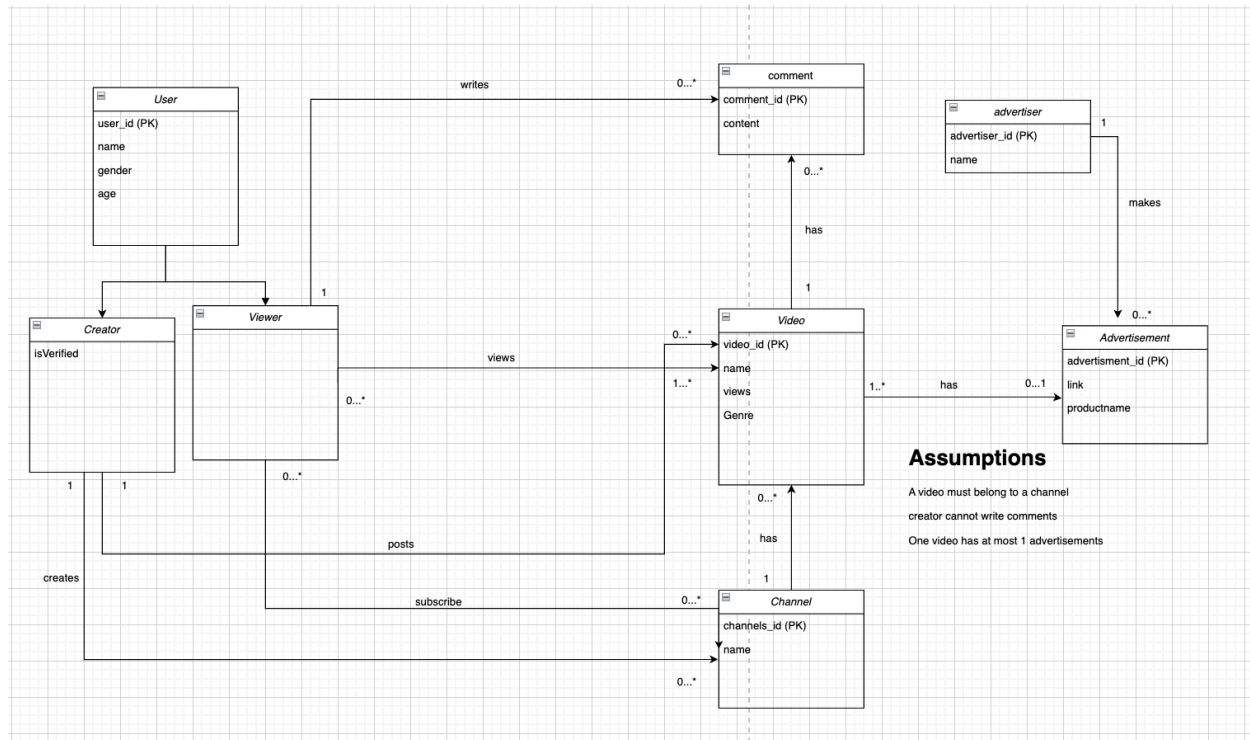


## 1. Updated Conceptual Model



## 2. Relational Model

Advertisements(**advertisement\_id**, link, productName, advertiser\_id)  
 Advertiser (**advertiser\_id**, name)  
 Comment (**comment\_id**, content, user\_id, video\_id)  
 Video(**video\_id**, name, views, genre, channels\_id, advertisement\_id, user\_id)  
 Viewer(**user\_id**, name, gender, age)  
 Creator (**user\_id**, name, gender, age, isVerified)  
 Channel(**channels\_id**, name, user\_id)  
 Subscribing(**user\_id**, **channels\_id**)  
 Viewing(**user\_id**, **video\_id**)

## 3. Functional Dependencies and Normalized Schema

Please see our conceptual model for our assumptions.

- {Comment\_id} → {content, Comment\_id, user\_id, video\_id}

This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key comment\_id.

- $\{\text{Video\_id}\} \rightarrow \{\text{name, views, genre, channels\_id, user\_id, Video\_id}\}$

This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key video\_id.

- $\{\text{user\_id}\} \rightarrow \{\text{name, gender, age, user\_id}\}$

This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key user\_id.

- $\{\text{user\_id}\} \rightarrow \{\text{name, gender, age, isVerified, user\_id}\}$

This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key user\_id.

- $\{\text{Advertiser\_id}\} \rightarrow \{\text{Advertiser\_id, name}\}$

This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key advertiser\_id.

- $\{\text{Channels\_id}\} \rightarrow \{\text{name, Channels\_id, user\_id}\}$

This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key channels\_id.

- $\{\text{user\_id, channels\_id}\} \rightarrow \{\text{user\_id, channel\_id}\}$

This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key which consists of user\_id, and channels\_id.

- $\{\text{User\_id, video\_id}\} \rightarrow \{\text{video\_id, User\_id}\}$

This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key which consists of user\_id, and video\_id.

- $\{\text{Advertisement\_id}\} \rightarrow \{\text{advertisement\_id, link, productName, advertiser\_id}\}$

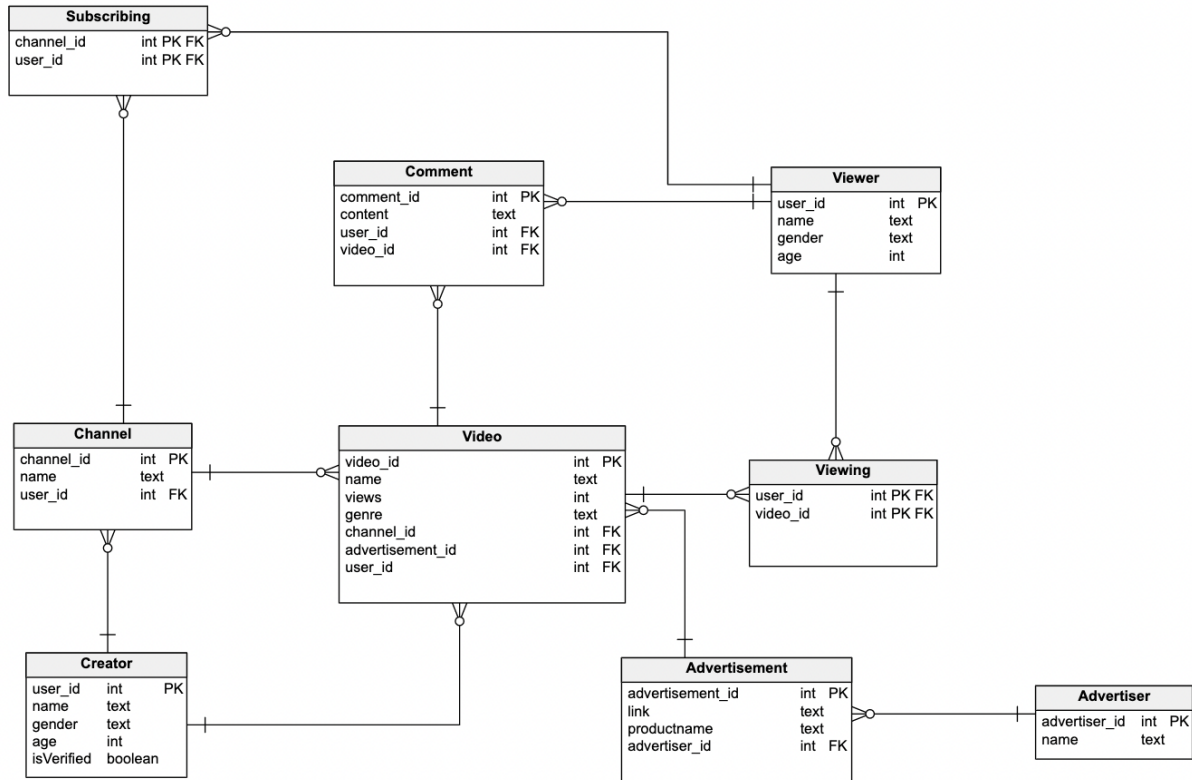
This relation is in BCNF because there are no repeating groups, no partial dependencies, and no transitive dependencies. Everything gets determined by the primary key advertisement\_id.

Note: There is no normalization to be done because all of our functional dependencies are in BCNF.

#### **4. Normalized Schema**

See above

## 5. Screenshot of the physical model



## 6. Updated User Stories

ID	Simple/Complex/Analytical	As a <role>	I want <goal>	So that <reason>
1	Complex	Creator	list demography of who viewed my videos	I can determine my target audience
2	Complex	Creator	see the number of videos that fall under each genre in my channel	I can analyze the focus and main themes of my content
3	Complex	advertiser	see how many people have viewed my advertisement	I can make better decisions about where to put advertisements next time
4	Complex	Viewer	subscribe to different youtube channels	I can be see my favorite content creators post

5	Simple	Creator	be a verified creator	users know I'm not a fraudulent channel of other people .
6	Simple	Viewer	view my video history	re-watch the videos I watched before
7	Simple	Viewer	get the advertisement link in video	I can buy the product in video
8	Simple	Viewer	be able to comment on videos	I can ask questions and discuss things I am interested in
9	Simple	Creator	register an account on Youtube	I can create and post videos
10	Simple	Creator	I want to be able to see comments on a videos	I can gauge whether my content is satisfying my target audience and viewers