Data and Application

Project Phase 3

Three of a Kind

Gurkirat Singh (2019101069)
Shrey Gupta (2019101058)
Sanchit Arora (2019101047)

***Note:** In the diagrams, *1* represents a primary key and * represents a foreign key.

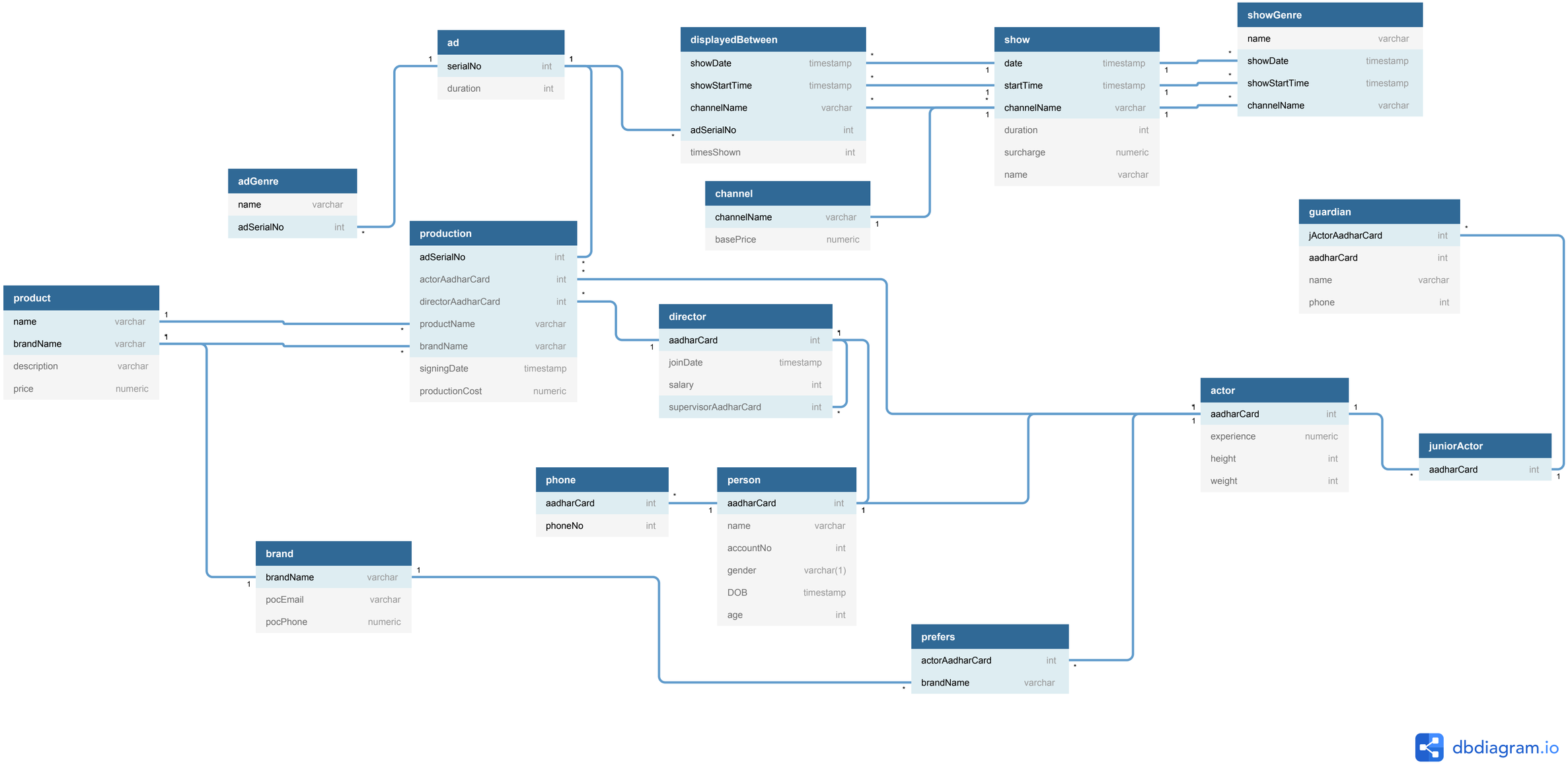
Relational Model & 1 NF

To Convert the ER model into the relational Model the following changes were introduced:

- The entities both weak and strong were converted into tables with their primary keys in bold. The composite attributes were broken up into simple attributes. Multivalued attributes such as phone for Person and guardians for Junior Actor were put it separate tables which include the primary key of the entity and the value for that attribute. Together they constitute the primary key of that table. To display the person hierarchy, we used the method in which the common attributes were mentioned in the person class. The unique attributes of Actor and Director were mentioned explicitly in separate tables which has Foreign Key AadharCard attribute which refers to the Person primary key. Similarly, for Junior Actor a separate table was used which aadharCard foreign key attribute which refers to the Actor attribute aadharCard.
- The relationships such as hasShow and hasProduct which were identifying relationships for show and product respectively were inculcated with the help of introducing a foreign key attribute in show and product which refers to the primary key of the identifying entity.
- M:N relationships such as prefers, displayedBetween were converted into separate tables and their primary keys were formed by the composition of the primary keys of the participating entity type such as in prefers where actorAadharCard and brandName form the primary key for that relation.
- The 4-ary relationship was formed in a similar manner and the foreign key attributes were added which refer to the primary keys of the participating relationships. adSerialNo was made the primary key of this relation as Ad

participates in the relation with (min, max) constraints (1, 1) and thus can uniquely identify the tuple entries in the relation.

The Relational Model created after the changes mentioned from the ER Model already satisfied 1NF and thus no separate changes were required to convert the relational model into 1NF. Hence, the following model satisfies both Relational Model and 1NF.


ad
serialNo int
duration int
displayedBetween
showDate timestamp
showStartTime timestamp
channelName varchar
adSerialNo int
timesShown int
show
date timestamp
startTime timestamp
channelName varchar
duration int
surcharge numeric
name varchar
showGenre
name varchar
showDate timestamp
showStartTime timestamp
channelName varchar
adGenre
name varchar
adSerialNo int
channel
channelName varchar
basePrice numeric
guardian
jActorAadharCard int
aadharCard int
name varchar
phone int
production
adSerialNo int
actorAadharCard int
directorAadharCard int
productName varchar
brandName varchar
signingDate timestamp
productionCost numeric
product
name varchar
brandName varchar
description varchar
price numeric
director
aadharCard int
joinDate timestamp
salary int
supervisorAadharCard int
actor
aadharCard int
experience numeric
height int
weight int
juniorActor
aadharCard int
phone
aadharCard int
phoneNo int
person
aadharCard int
name varchar
accountNo int
gender varchar(1)
DOB timestamp
age int
brand
brandName varchar
pocEmail varchar
pocPhone numeric
prefers
actorAadharCard int
brandName varchar
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2 NF And 3 NF

To convert 1NF into 2NF the following changes were introduced:

- The name and phone attributes of guardian were moved to a different relation because they were partially dependent on aadharCard

To convert 2NF into 3NF no changes were required.