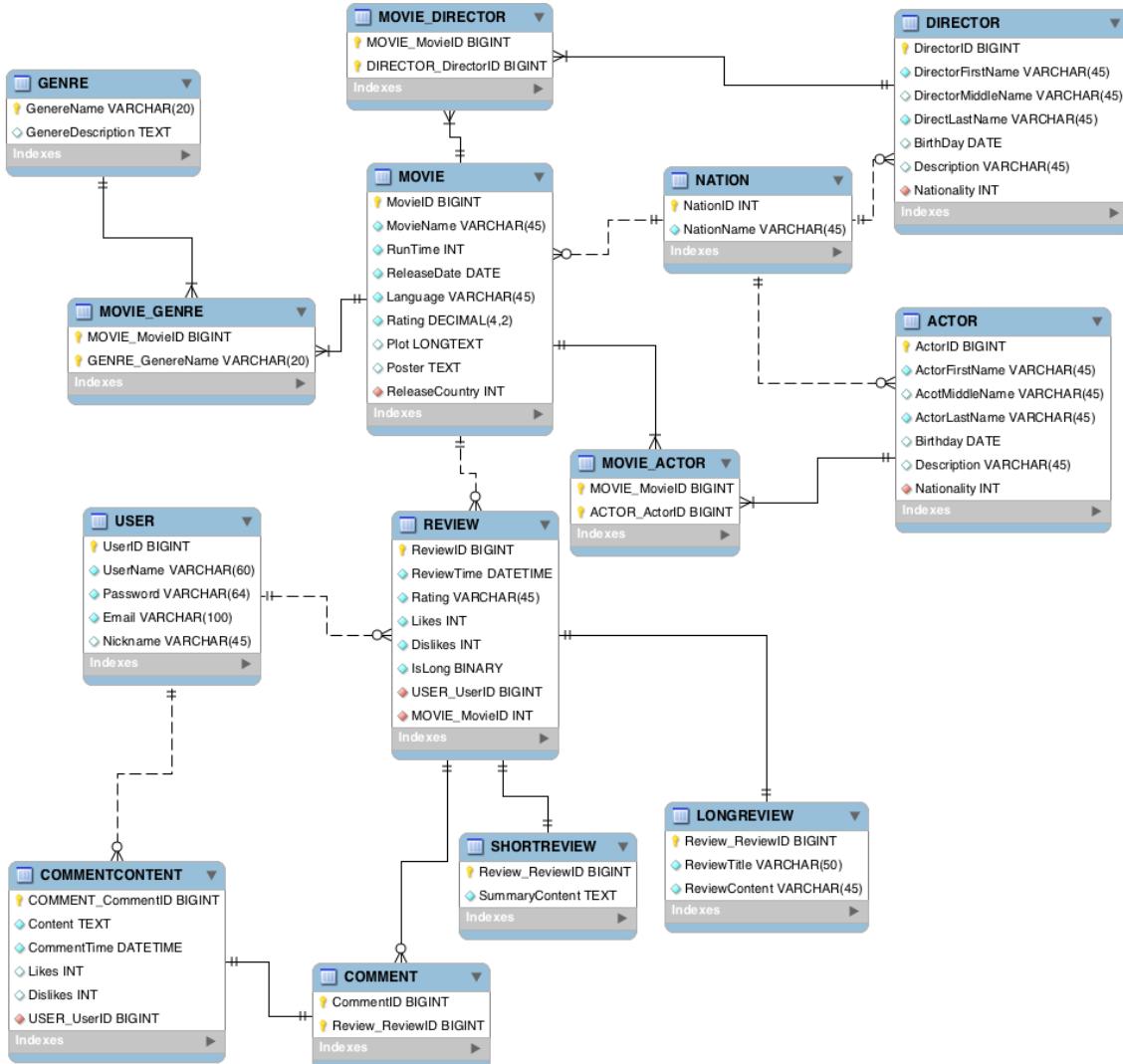


❖ Online Movie Rating Website

- A Convert this data model to a database design. Specify tables, primary keys, and foreign keys.

This database design was drawn using the MySQL Workbench. Note that primary keys (gold key symbol), foreign keys (red diamond), NULL status (white diamond is NULL, blue diamond is NOT NULL), and data types are shown. Maximum and minimum cardinalities and identifying or nonidentifying relationships are also indicated in the diagram.



The E-R Crow's Foot model above is based on the following data:

All N:M relationships are transformed to be intersection table in the graph above.

RELATIONSHIP			CARDINALITY [Blue = Inferable]	
PARENT	CHILD	TYPE	MAX	MIN
MOVIE	GENRE	Weak	N:M	M-M
MOVIE	DIRECTOR	Weak	N:M	O-M
MOVIE	ACTOR	Weak	N:M	O-M
NATION	MOVIE	Strong	1:N	M-O
NATION	DIRECTOR	Strong	1:N	M-O
NATION	ACTOR	Strong	1:N	M-O
REVIEW	SHORTREVIEW	ID-Dependent	1:1	M-M
REVIEW	LONGREVIEW	ID-Dependent	1:1	M-M
USER	REVIEW	Strong	1:N	M-O
MOVIE	REVIEW	Strong	1:N	M-O
USER	COMMENT	Strong	1:N	M-O
REVIEW	COMMENT	Weak	1:N	M-O

GENRE - Table

Name: GENRE Schema: classmate

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
GenereName	VARCHAR(20)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
GenereDescr...	TEXT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<click to edit>

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

MOVIE_GENRE - Table

Name: MOVIE_GENRE Schema: classmate

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
MOVIE_MovieID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
GENRE_GenreName	VARCHAR(20)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					

<click to edit>

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

MOVIE_DIRECTOR - Table

Name: MOVIE_DIRECTOR Schema: classmate

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
MOVIE_MovieID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
DIRECTOR_DIRECTORID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					

<click to edit>

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

MOVIE - Table

Name: MOVIE Schema: class

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
MovieID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
MovieName	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RunTime	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ReleaseDate	DATE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Language	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rating	DECIMAL(4,2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Plot	LONGTEXT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Poster	TEXT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ReleaseCountry	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

DIRECTOR - Table

Name: DIRECTOR Schema: clas

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
DirectorID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
DirectorFirst...	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DirectorMidd...	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DirectLastName	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BirthDay	DATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Description	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nationality	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

ACTOR - Table

Name: ACTOR Schema: clas

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
ActorID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ActorFirstName	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ActorMiddleN...	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ActorLastName	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Birthday	DATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Description	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nationality	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

MOVIE_ACTOR – Table

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
MOVIE_MovieID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
ACTOR_ActorID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

NATION – Table

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
NationID	INT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
NationName	VARCHAR(45)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

USER – Table

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
UserID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
UserName	VARCHAR(60)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Password	VARCHAR(64)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Email	VARCHAR(100)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nickname	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

REVIEW - Table

Name: REVIEW Schema: claudia

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
ReviewID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ReviewTime	DATETIME	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rating	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Likes	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
Dislikes	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
IsLong	BINARY	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
USER_UserID	BIGINT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MOVIE_MovieID	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

COMMENT - Table

Name: COMMENT Schema: claudia

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
CommentID	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Review_Revie...	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Content	TEXT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CommentTime	DATETIME	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Likes	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
Dislikes	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
USER_UserID	BIGINT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

SHORTREVIEW - Table

Name: SHORTREVIEW Schema: claudia

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
Review_Revie...	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SummaryCo...	TEXT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

LONGREVIEW – Table

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	Default
Review_Rev...	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
ReviewTitle	VARCHAR(50)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
ReviewContent	VARCHAR(45)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<click to edit>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Columns Indices Foreign Keys Triggers Partitioning Options Inserts Privileges

B *Describe how you have represented weak entities, if any exist.*

- 1) COMMENT is ID-dependent on REVIEW.
- 2) The MOVIE_GENRE, MOVIE_ACTOR, MOVIE_DIRECTOR are weak entities
- 3) SHORTREVIEW and LONGREVIEW is id-dependent on Review

C *Describe how you have represented supertype and subtype entities, if any exist.*

- 1) SHORTREVIEW is subtype of REVIEW.
- 2) LONGREVIEW is subtype of REVIEW.

D *Create a visual representation of your database design as a Crow's Foot E-R diagram similar to the one in Figure 6-37.*

See the E-R diagram for part A above.

E *Document your minimum cardinality enforcement using referential integrity actions for required parents, if any, and the form in Figure 6-28(b) for required children, if any.*

Relationship		Referential Integrity Constraint	Cascading Behavior	
PARENT	CHILD		ON UPDATE	ON DELETE
GENRE	MOVIE_GENRE	GENRE_Genrename in MOVIE_GENRE must exist in GenreName in GENRE	NO	YES
MOVIE	MOVIE_GENRE	MOVIE_MovieID in MOVIE_GENRE must exist in MovieID in MOVIE	NO	YES
DIRECTOR	MOVIE_DIRECTOR	DIRECTOR_DirectorID in MOVIE_DIRECTOR must exist in DirectorID in DIRECTOR	NO	YES
MOVIE	MOVIE_DIRECTOR	MOVIE_MovieID in MOVIE_DIRECTOR must exist in MovieID in MOVIE	NO	YES
ACTOR	MOVIE_ACTOR	ACTOR_ActorID in MOVIE_ACTOR must exist in ActorID in ACTOR	NO	YES
MOVIE	MOVIE_ACTOR	MOVIE_MovieID in MOVIE_ACTOR must exist in MovieID in MOVIE	NO	YES
NATION	MOVIE	ReleaseCountry in MOVIE must exist in NationID in NATION	YES	NO
NATION	ACTOR	Nationality in Actor must exist in NationID in NATION	YES	NO
NATION	DIRECTOR	Nationality in DIRECTOR must exist in NationID in NATION	YES	NO

MOVIE	REVIEW	MOVIE_MovieID in REVIEW must exist in MovieID in MOVIE	NO	NO
USER	REVIEW	USER_UserID in REVIEW must exist in UserID in USER	NO	NO
REVIEW	SHORTREVIEW	REVIEW_ReviewID in SHORTREVIEW must exist in ReviewID in REVIEW	YES	YES
REVIEW	LONGREVIEW	REVIEW_ReviewID in LONGREVIEW must exist in ReviewID in LONGREVIE	YES	YES
USER	COMMENT	USER_UserID in COMMENT must exist in UserID in USER	YES	NO
REVIEW	COMMENT	REVIEW_ReviewID in COMMENT must exist in ReviewID in REVIEW	YES	YES