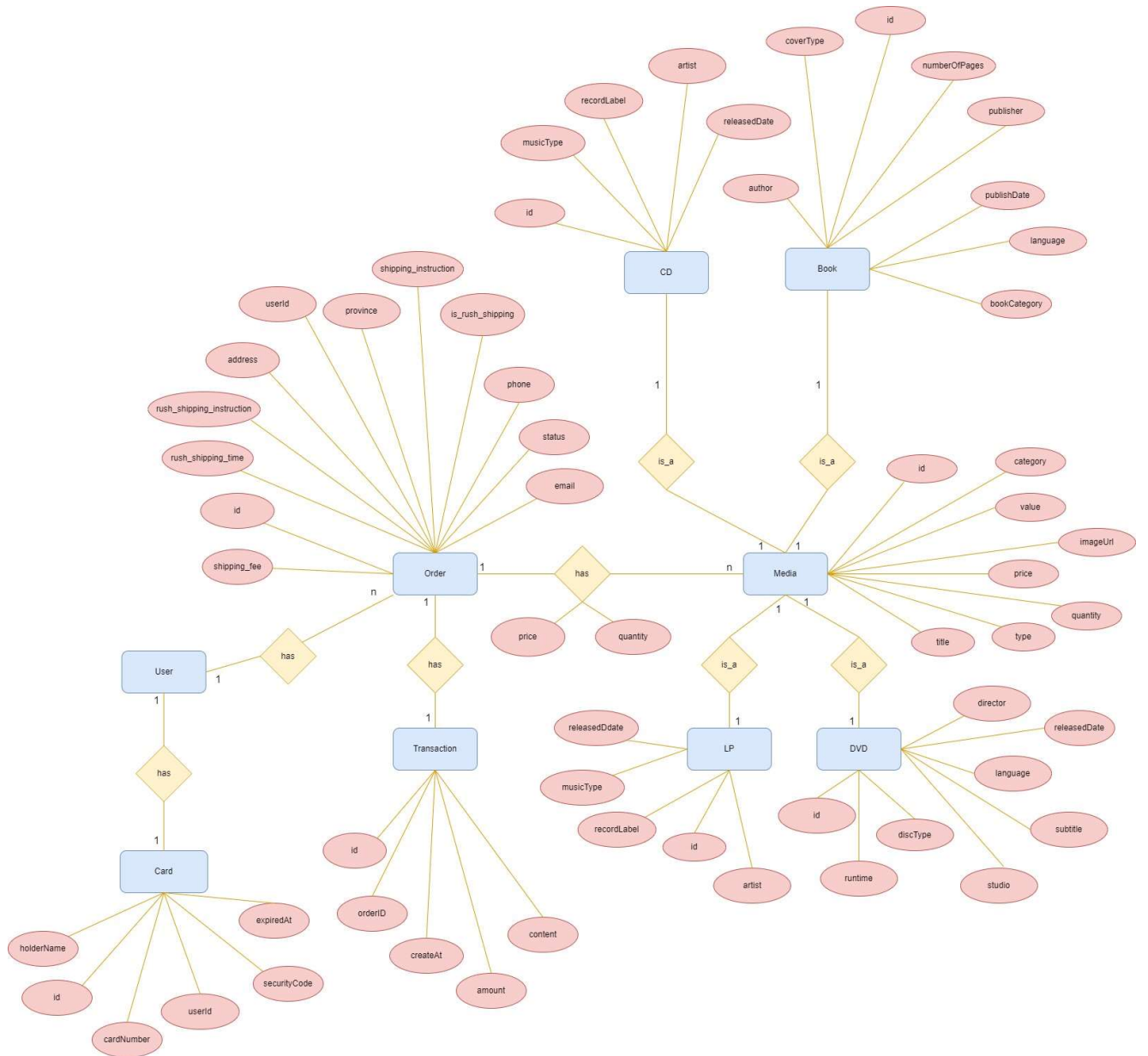
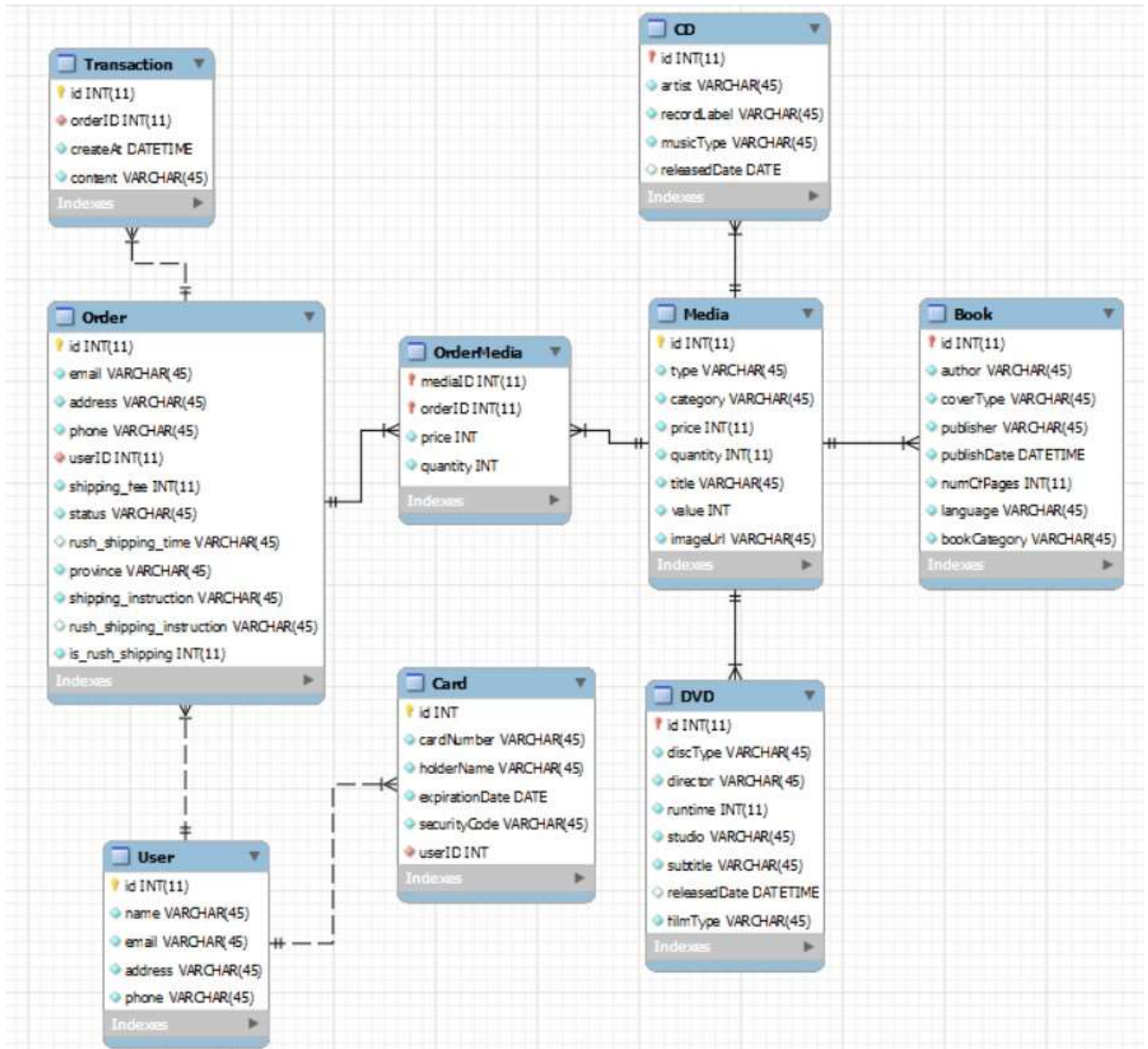


## 1. Conceptual data model: Entity-Relation Diagram (ERD)



## 2. Logical data model: Database Design Diagram



### 3. Physical data model:

#### 3.1. Table User

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2			name	VARCHAR(45)	Yes	User name
3			email	VARCHAR(45)	Yes	User email
4			address	VARCHAR(45)	Yes	User address
5			phone	VARCHAR(45)	Yes	User contact number

#### 3.2. Table Media

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2			price	INT	Yes	Current price
3			category	VARCHAR(45)	Yes	Media category (story, pop, adventure)
4			value	INT	Yes	Product value
5			quantity	INT	Yes	Number of products
6			title	VARCHAR(45)	Yes	Product name
7			imageUrl	VARCHAR(45)	No	Product image path
8			type	VARCHAR(45)	Yes	Media type (CD, DVD, Book, LP)

### 3.3. Table CD

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x	x	id	INT	Yes	ID, same ID of Media of which type is CD
2			artist	VARCHAR(45)	Yes	Artist's name
3			recordLabel	VARCHAR(45)	Yes	Record Label
4			musicType	VARCHAR(45)	Yes	Music genres
6			releasedDate	DATETIME	No	Release Date

### 3.4. Table Book

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x	x	id	INT	Yes	ID, same ID of Media of which type is Book
2			author	VARCHAR(45)	Yes	Author's name
3			coverType	VARCHAR(45)	Yes	Cover Type
4			numberOfPages	INT	Yes	Page number
5			language	VARCHAR(45)	Yes	Language
6			bookCategory	VARCHAR(45)	Yes	Type of Book
7			publisher	VARCHAR(45)	Yes	Publishing house
8			publishDate	DATETIME	Yes	Date of publishing

### 3.5. Table DVD

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x	x	id	INT	Yes	ID, same ID of Media of which type is DVD
2			director	VARCHAR(45)	Yes	Director's name
3			discType	VARCHAR(45)	Yes	Disc Type
4			subtitle	VARCHAR(45)	Yes	Subtitles
5			studio	VARCHAR(45)	Yes	Manufacturer
6			language	VARCHAR(45)	Yes	Language
7			runtime	INT	Yes	Duration
8			releasedDate	DATETIME	No	Release Date

### 3.6. Table LP

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x	x	id	INT	Yes	ID, same ID of Media of which type is LP
2			artist	VARCHAR(45)	Yes	Artist's name
3			recordLabel	VARCHAR(45)	Yes	Record Label
4			musicType	VARCHAR(45)	Yes	Music genres
6			releasedDate	DATETIME	No	Release Date

### 3.7. Table Order

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2			email	VARCHAR(45)	Yes	User's email
3			address	VARCHAR(45)	Yes	User's address
4			phone	VARCHAR(45)	Yes	User's phone number
5		x	userID	INT	Yes	User ID
6			shipping_fee	INT	Yes	Shipping fee
7			status	VARCHAR(45)	Yes	Order status(Chờ duyệt, Đã duyệt, Đã từ chối)
8			rush_shipping_time	VARCHAR(45)	No	Rush shipping time
9			province	VARCHAR(45)	Yes	Province
10			shipping_instruction	VARCHAR(45)	Yes	Instruction of shipping
11			rush_shipping_instruction	VARCHAR(45)	No	Instruction of rush shipping
12			is_rush_shipping	INT	Yes	Shipping method

### 3.8. Table OrderMedia

STT	PK	FK	Column Name	Data Type	Mandatory	Description
2	x	x	mediaId	INT	Yes	Media ID
3	x	x	orderId	INT	Yes	Order ID
4			price	INT	Yes	Selling price
5			quantity	INT	Yes	Number of ordered item

### 3.9. Table Transaction

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
3			content	VARCHAR(45)	Yes	Transaction contents
4			amount	INT	Yes	Payment Amount
5			createAt	DATETIME	Yes	Date of creation a transaction
7		x	orderId	INT	Yes	ID of order

### 3.10. Table Card

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment

2			cardNumber	VARCHAR(45)	Yes	Card Number of customer
3			holderName	VARCHAR(45)	Yes	Card holders
4		x	userId	VARCHAR(45)	Yes	User ID
5			securityCode	VARCHAR(45)	Yes	Bank Code
6			expirationDate	DATETIME	Yes	Expire Date

### • Database Script from Logical Data Model

- BEGIN TRANSACTION;
- CREATE TABLE IF NOT EXISTS "Media" (
  - "id" INTEGER NOT NULL,
  - "type" VARCHAR(45) NOT NULL,
  - "category" VARCHAR(45) NOT NULL,
  - "price" INTEGER NOT NULL,
  - "quantity" INTEGER NOT NULL,
  - "title" VARCHAR(45) NOT NULL,
  - "value" INTEGER NOT NULL,
  - "imageUrl" VARCHAR(45) NOT NULL,
  - PRIMARY KEY("id" AUTOINCREMENT)
- );
- CREATE TABLE IF NOT EXISTS "CD" (
  - "id" INTEGER NOT NULL,
  - "artist" VARCHAR(45) NOT NULL,
  - "recordLabel" VARCHAR(45) NOT NULL,
  - "musicType" VARCHAR(45) NOT NULL,
  - "releasedDate" DATE,
  - CONSTRAINT "fk\_cd\_media" FOREIGN KEY("id") REFERENCES "Media"("id"),
  - PRIMARY KEY("id")
- );
- CREATE TABLE IF NOT EXISTS "Book" (
  - "id" INTEGER NOT NULL,
  - "author" VARCHAR(45) NOT NULL,
  - "coverType" VARCHAR(45) NOT NULL,
  - "publisher" VARCHAR(45) NOT NULL,
  - "publishDate" DATETIME NOT NULL,
  - "numOfPages" INTEGER NOT NULL,
  - "language" VARCHAR(45) NOT NULL,
  - "bookCategory" VARCHAR(45) NOT NULL,
  - CONSTRAINT "fk\_book\_media" FOREIGN KEY("id") REFERENCES "Media"("id"),
  - PRIMARY KEY("id" AUTOINCREMENT)



```

);
• CREATE TABLE IF NOT EXISTS "User" (
    "id" INTEGER NOT NULL,
    "name" VARCHAR(45) NOT NULL,
    "email" VARCHAR(45) NOT NULL,
    "address" VARCHAR(45) NOT NULL,
    "phone" VARCHAR(45) NOT NULL,
    PRIMARY KEY("id" AUTOINCREMENT)
);
• CREATE TABLE IF NOT EXISTS "DVD" (
    "id" INTEGER NOT NULL,
    "discType" VARCHAR(45) NOT NULL,
    "director" VARCHAR(45) NOT NULL,
    "runtime" INTEGER NOT NULL,
    "studio" VARCHAR(45) NOT NULL,
    "subtitle" VARCHAR(45) NOT NULL,
    "releasedDate" DATETIME,
    "filmType" VARCHAR(45) NOT NULL,
    CONSTRAINT "fk_dvd_media" FOREIGN KEY("id") REFERENCES
"Media"("id"),
    PRIMARY KEY("id")
);
• CREATE TABLE IF NOT EXISTS "OrderMedia" (
    "mediaID" INTEGER NOT NULL,
    "orderID" INTEGER NOT NULL,
    "price" INTEGER NOT NULL,
    "quantity" INTEGER NOT NULL,
    CONSTRAINT "fk_ordermedia_media" FOREIGN KEY("mediaID")
REFERENCES "Media"("id"),
    CONSTRAINT "fk_ordermedia_order" FOREIGN KEY("orderID")
REFERENCES "Order"("id"),
    PRIMARY KEY("mediaID", "orderID")
);
• CREATE TABLE IF NOT EXISTS "Transaction" (
    "id" INTEGER NOT NULL,
    "orderID" INTEGER NOT NULL,
    "createAt" DATETIME NOT NULL,
    "content" VARCHAR(45) NOT NULL,
    CONSTRAINT "fk_transaction_order" FOREIGN KEY("orderID")
REFERENCES "Order"("id"),
    PRIMARY KEY("id" AUTOINCREMENT)
);
• CREATE TABLE IF NOT EXISTS "Card" (
    "id" INTEGER NOT NULL,
    "cardNumber" VARCHAR(45) NOT NULL,
    "holderName" VARCHAR(45) NOT NULL,
    "expirationDate" DATE NOT NULL,
    "securityCode" VARCHAR(45) NOT NULL,
    "userID" INTEGER NOT NULL,
    CONSTRAINT "fk_card_user" FOREIGN KEY("userID") REFERENCES
"User"("id"),

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        PRIMARY KEY("id")
    );

```

- CREATE TABLE IF NOT EXISTS "Order" (
 "id" INTEGER NOT NULL,
 "email" VARCHAR(45) NOT NULL,
 "address" VARCHAR(45) NOT NULL,
 "phone" VARCHAR(45) NOT NULL,
 "userID" INTEGER NOT NULL,
 "shipping\_fee" INTEGER NOT NULL,
 "status" VARCHAR(45),
 "rush\_shipping\_time" VARCHAR(45),
 "province" VARCHAR(45) NOT NULL,
 "shipping\_instruction" VARCHAR(45),
 "rush\_shipping\_instruction" VARCHAR(45),
 "is\_rush\_shipping" INTEGER,
 CONSTRAINT "fk\_order\_user" FOREIGN KEY("userID") REFERENCES
 "User"("id"),
 PRIMARY KEY("id" AUTOINCREMENT)
 );
- INSERT INTO "Media" VALUES
 (38, 'book', 'story', 32, 12, 'book2', 29, 'assets/images/book/book2.jpg'
 ');
- INSERT INTO "Media" VALUES
 (39, 'book', 'adventure', 21, 2, 'book9', 20, 'assets/images/book/book9.
 jpg');
- INSERT INTO "Media" VALUES
 (40, 'book', 'adventure', 73, 11, 'book10', 69, 'assets/images/book/book
 10.jpg');
- INSERT INTO "Media" VALUES
 (41, 'book', 'story', 66, 2, 'book6', 62, 'assets/images/book/book6.jpg'
 );
- INSERT INTO "Media" VALUES
 (42, 'cd', 'pop', 24, 6, 'cd7', 20, 'assets/images/cd/cd7.jpg');
- INSERT INTO "Media" VALUES
 (43, 'book', 'story', 50, 7, 'book12', 44, 'assets/images/book/book12.jp
 g');
- INSERT INTO "Media" VALUES
 (44, 'book', 'story', 57, 10, 'book4', 53, 'assets/images/book/book4.jpg
 ');
- INSERT INTO "Media" VALUES
 (45, 'cd', 'pop', 66, 8, 'cd3', 60, 'assets/images/cd/cd3.jpg');
- INSERT INTO "Media" VALUES
 (46, 'book', 'bussiness', 79, 17, 'book1', 72, 'assets/images/book/book1
 .jpg');
- INSERT INTO "Media" VALUES
 (47, 'dvd', 'cartoon', 82, 1, 'dvd12', 78, 'assets/images/dvd/dvd12.jpg'
 );
- INSERT INTO "Media" VALUES
 (48, 'book', 'science', 25, 10, 'book3', 22, 'assets/images/book/book3.j
 pg');

- INSERT INTO "Media" VALUES (49,'dvd','science fiction',75,3,'dvd10',74,'assets/images/dvd/dvd10.jpg');
- INSERT INTO "Media" VALUES (50,'book','bussiness',26,4,'book11',19,'assets/images/book/book11.jpg');
- INSERT INTO "Media" VALUES (51,'dvd','action',61,18,'dvd11',52,'assets/images/dvd/dvd11.jpg');
- INSERT INTO "Media" VALUES (52,'cd','rock',40,4,'cd4',35,'assets/images/cd/cd4.jpg');
- INSERT INTO "Media" VALUES (53,'dvd','action',70,16,'dvd9',60,'assets/images/dvd/dvd9.jpg');
- INSERT INTO "Media" VALUES (54,'dvd','romance',47,19,'dvd2',39,'assets/images/dvd/dvd2.jpg');
- INSERT INTO "Media" VALUES (55,'cd','pop',74,6,'cd2',71,'assets/images/cd/cd2.jpg');
- INSERT INTO "Media" VALUES (56,'cd','rock',70,20,'cd1',60,'assets/images/cd/cd1.jpg');
- INSERT INTO "Media" VALUES (57,'book','adventure',38,2,'book8',36,'assets/images/book/book8.jpg');
- INSERT INTO "Media" VALUES (58,'dvd','cartoon',55,13,'dvd3',51,'assets/images/dvd/dvd3.jpg');
- INSERT INTO "Media" VALUES (59,'dvd','action',28,1,'dvd6',26,'assets/images/dvd/dvd6.jpg');
- INSERT INTO "Media" VALUES (60,'dvd','romance',38,17,'dvd4',33,'assets/images/dvd/dvd4.jpg');
- INSERT INTO "Media" VALUES (61,'cd','pop',42,15,'cd12',38,'assets/images/cd/cd12.jpg');
- INSERT INTO "Media" VALUES (62,'book','bussiness',34,15,'book5',29,'assets/images/book/book5.jpg');
- INSERT INTO "Media" VALUES (63,'cd','ballad',99,4,'cd5',92,'assets/images/cd/cd5.jpg');
- INSERT INTO "Media" VALUES (64,'cd','pop',38,10,'cd8',32,'assets/images/cd/cd8.jpg');
- INSERT INTO "Media" VALUES (65,'cd','classic',37,10,'cd6',31,'assets/images/cd/cd6.jpg');
- INSERT INTO "Media" VALUES (66,'book','bussiness',93,15,'book7',88,'assets/images/book/book7.jpg');
- INSERT INTO "Media" VALUES (67,'cd','classic',25,5,'cd9',23,'assets/images/cd/cd9.jpg');
- INSERT INTO "Media" VALUES (68,'dvd','romance',71,4,'dvd5',64,'assets/images/dvd/dvd5.jpg');

- INSERT INTO "Media" VALUES  
(69, 'cd', 'pop', 97, 17, 'cd10', 89, 'assets/images/cd/cd10.jpg');
- INSERT INTO "Media" VALUES  
(70, 'dvd', 'romance', 47, 19, 'dvd8', 37, 'assets/images/dvd/dvd8.jpg')  
;
- INSERT INTO "Media" VALUES (71, 'dvd', 'science  
fiction', 95, 11, 'dvd1', 92, 'assets/images/dvd/dvd1.jpg');
- INSERT INTO "Media" VALUES  
(72, 'dvd', 'action', 23, 9, 'dvd7', 16, 'assets/images/dvd/dvd7.jpg');
- INSERT INTO "Media" VALUES  
(73, 'cd', 'classic', 28, 3, 'cd11', 20, 'assets/images/cd/cd11.jpg');
- CREATE INDEX IF NOT EXISTS "OrderMedia.fk\_ordermedia\_order\_idx"  
ON "OrderMedia" (  
    "orderID"  
)  
);
- CREATE INDEX IF NOT EXISTS "Transaction.fk\_transaction\_order\_idx"  
ON "Transaction" (  
    "orderID"  
)  
);
- CREATE INDEX IF NOT EXISTS "Card.fk\_card\_user\_idx" ON "Card" (  
    "userID"  
)  
);
- CREATE INDEX IF NOT EXISTS "Order.fk\_order\_user\_idx" ON "Order" (  
    "userID"  
)  
);
- COMMIT;