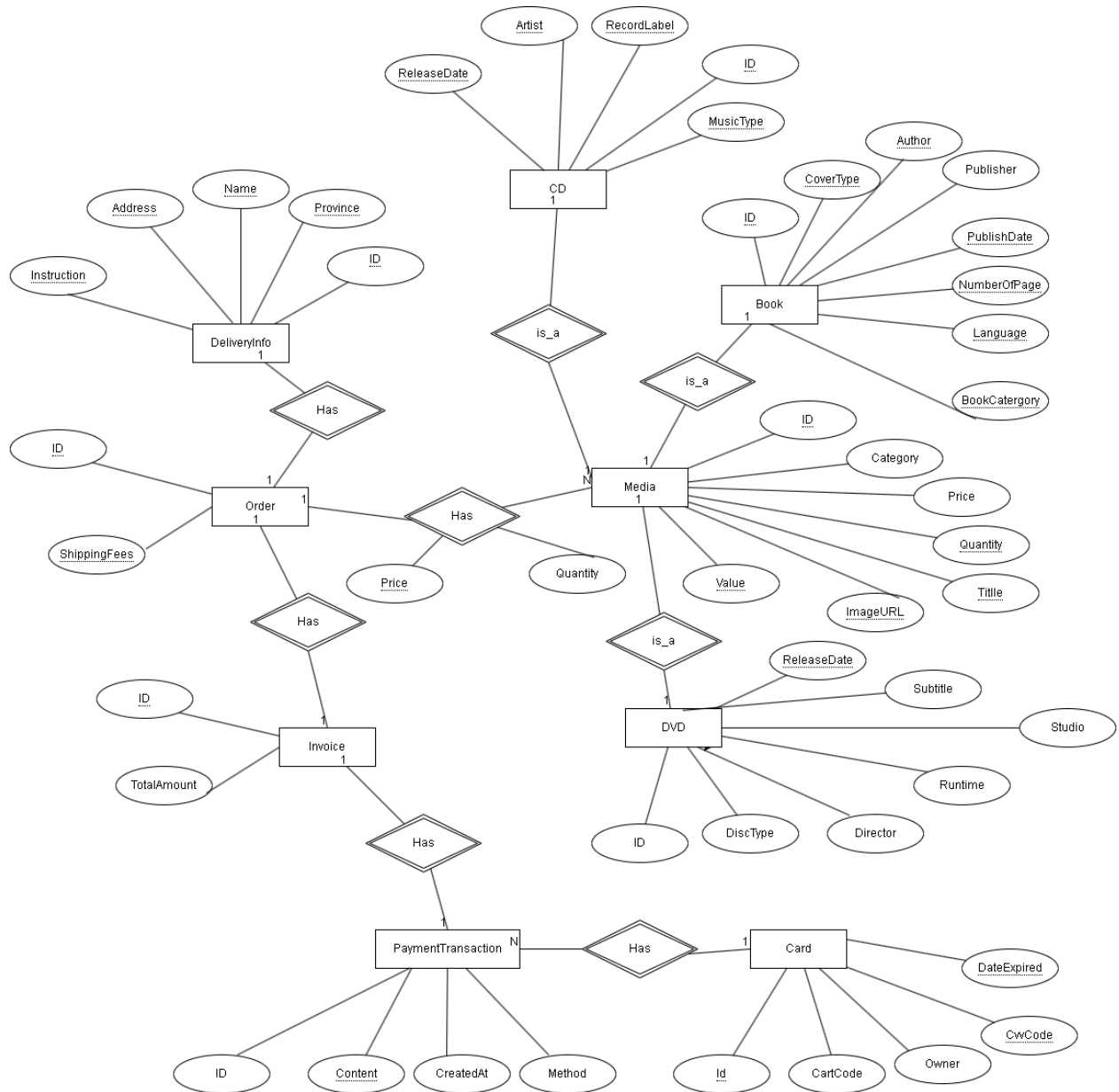
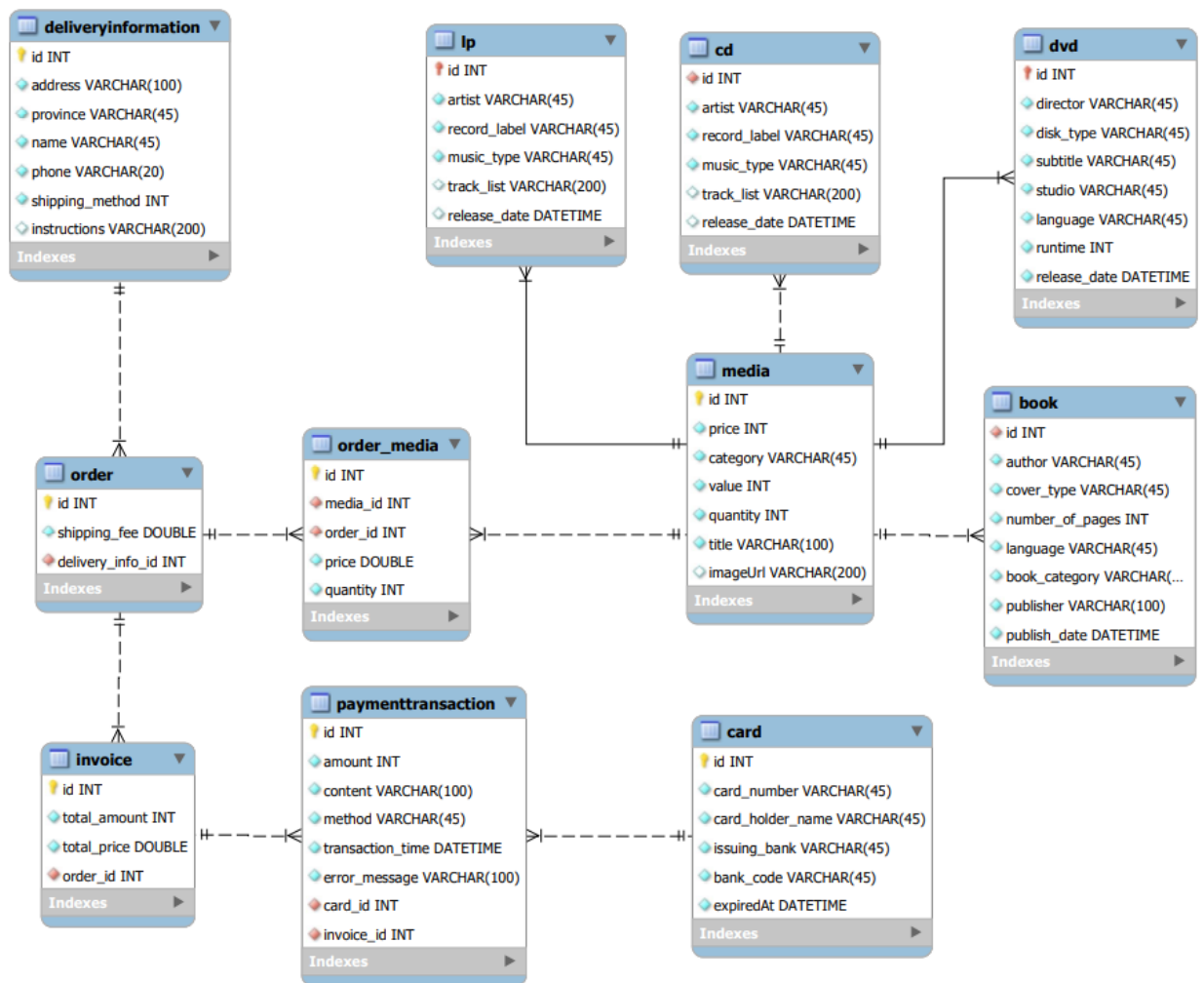


## 1. Conceptual data model: Entity-Relation Diagram (ERD)



## 2. Logical data model: Database Design Diagram



### 3. Physical data model:

#### 3.1. Table DeliveryInformation

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2			address	VARCHAR(100)	Yes	Delivery address
3			province	VARCHAR(45)	Yes	Provinces
4			name	VARCHAR(45)	Yes	Receiver name
5			phone	VARCHAR(20)	Yes	Contact number
6			shipping_method	INT	Yes	Shipping Method (normal: 0, rush: 1)
7			instructions	VARCHAR(200)	No	Delivery Instructions

### 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 type (CD, DVD, Book, LP)
4			value	INT	Yes	Product value
5			quantity	INT	Yes	Number of products
6			title	VARCHAR(100)	Yes	Product name
7			imageUrl	VARCHAR(200)	No	Product image path

### 3.3. Table CD

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1		x	id	INT	Yes	ID, same ID of Media of which category is CD
2			artist	VARCHAR(45)	Yes	Artist's name
3			record_label	VARCHAR(45)	Yes	Record Label
4			music_type	VARCHAR(45)	Yes	Music genres
5			track_list	VARCHAR(200)	No	Track list songs
6			release_date	DATETIME	No	Release Date

### 3.4. Table Book

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1		x	id	INT	Yes	ID, same ID of Media of which category is Book
2			author	VARCHAR(45)	Yes	Author's name
3			cover_type	VARCHAR(45)	Yes	Cover Type
4			number_of_pages	INT	Yes	Page number
5			language	VARCHAR(45)	Yes	Language
6			book_category	VARCHAR(45)	Yes	Type of Book
7			publisher	VARCHAR(100)	Yes	Publishing house
8			publish_date	DATETIME	Yes	Date of publishing

### 3.5. Table DVD

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1		x	id	INT	Yes	ID, same ID of Media of which category is DVD
2			director	VARCHAR(45)	Yes	Director's name
3			disk_type	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			release_date	DATETIME	Yes	Release Date

### 3.6. Table LP

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1		x	id	INT	Yes	ID, same ID of Media of which category is LP
2			artist	VARCHAR(45)	Yes	Artist's name
3			record_label	VARCHAR(45)	Yes	Record Label
4			music_type	VARCHAR(45)	Yes	Music genres
5			track_list	VARCHAR(200)	Yes	Track list songs
6			release_date	DATETIME	Yes	Release Date

### 3.7. Table Order

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2			shipping_fee	DOUBLE	Yes	Shipping fee
		x	delivery_info_id	INT	Yes	Delivery Information ID

### 3.8. Table Order\_Media

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2		x	media_id	VARCHAR(100)	Yes	Media ID
3		x	order_id	VARCHAR(45)	Yes	Order ID
4			price	DOUBLE	Yes	Selling price
5			quantity	INT	Yes	Number of ordered item

### 3.9. Table Invoice

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2			total_amount	INT	Yes	Totals of items
3			total_price	DOUBLE	Yes	Total of price (include VAT)
4		x	order_id	INT	Yes	Order ID

### 3.10. Table PaymentTransaction

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2			amount	DOUBLE	Yes	Transaction Money
3			content	VARCHAR(100)	Yes	Transaction contents
4			method	VARCHAR(45)	Yes	Payment Methods
5			transaction_time	DATETIME	Yes	Date of creation a transaction
6			error_message	VARCHAR(100)	Yes	Message of error
7		x	card_id	INT	Yes	ID of used card
8		x	invoice_id	INT	Yes	Invoice ID

### 3.11. Table Card

STT	PK	FK	Column Name	Data Type	Mandatory	Description
1	x		id	INT	Yes	ID, auto increment
2			card_number	VARCHAR(45)	Yes	Card Number of customer
3			card_holder_name	VARCHAR(45)	Yes	Card holders
4			issuing_bank	VARCHAR(45)	Yes	Bank's name
5			bank_code	VARCHAR(45)	Yes	Bank Code
6			expiredAt	DATETIME	Yes	Expire Date

## 4. Database Script from Logical Data Model

```
CREATE DATABASE "aims" /*!40100 DEFAULT CHARACTER SET utf8mb4 COLLATE utf8mb4_0900_ai_ci
*/ /*!80016 DEFAULT ENCRYPTION='N' */;
```

```
CREATE TABLE "deliveryinformation" (
  "id" int NOT NULL AUTO_INCREMENT,
  "address" varchar(100) NOT NULL,
  "province" varchar(45) NOT NULL,
  "name" varchar(45) NOT NULL,
  "phone" varchar(20) NOT NULL,
  "shipping_method" int NOT NULL,
  "instructions" varchar(200) DEFAULT NULL,
  PRIMARY KEY ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE "media" (
  "id" int NOT NULL AUTO_INCREMENT,
  "price" int NOT NULL,
  "category" varchar(45) NOT NULL,
  "value" int NOT NULL,
  "quantity" int NOT NULL,
  "title" varchar(100) NOT NULL,
  "imageUrl" varchar(200) DEFAULT NULL,
  PRIMARY KEY ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE "book" (
  "id" int NOT NULL,
  "author" varchar(45) NOT NULL,
  "cover_type" varchar(45) NOT NULL,
  "number_of_pages" int NOT NULL,
  "language" varchar(45) NOT NULL,
  "book_category" varchar(45) NOT NULL,
  "publisher" varchar(100) NOT NULL,
  "publish_date" datetime NOT NULL,
  KEY "media_book_idx" ("id"),
  CONSTRAINT "fk_media_book" FOREIGN KEY ("id") REFERENCES "media" ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE "cd" (
  "id" int NOT NULL,
  "artist" varchar(45) NOT NULL,
  "record_label" varchar(45) NOT NULL,
  "music_type" varchar(45) NOT NULL,
  "track_list" varchar(200) DEFAULT NULL,
  "release_date" datetime DEFAULT NULL,
  KEY "media_cd_idx" ("id"),
  CONSTRAINT "fk_media_cd" FOREIGN KEY ("id") REFERENCES "media" ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE "dvd" (
  "id" int NOT NULL,
```



```

"director" varchar(45) NOT NULL,
"disk_type" varchar(45) NOT NULL,
"subtitle" varchar(45) NOT NULL,
"studio" varchar(45) NOT NULL,
"language" varchar(45) NOT NULL,
"runtime" int NOT NULL,
"release_date" datetime NOT NULL,
PRIMARY KEY ("id"),
CONSTRAINT "fk_dvd_media" FOREIGN KEY ("id") REFERENCES "media" ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;

CREATE TABLE "lp" (
  "id" int NOT NULL,
  "artist" varchar(45) NOT NULL,
  "record_label" varchar(45) NOT NULL,
  "music_type" varchar(45) NOT NULL,
  "track_list" varchar(200) DEFAULT NULL,
  "release_date" datetime DEFAULT NULL,
  PRIMARY KEY ("id"),
  CONSTRAINT "fk_lp_media" FOREIGN KEY ("id") REFERENCES "media" ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;

CREATE TABLE "card" (
  "id" int NOT NULL AUTO_INCREMENT,
  "card_number" varchar(45) NOT NULL,
  "card_holder_name" varchar(45) NOT NULL,
  "issuing_bank" varchar(45) NOT NULL,
  "bank_code" varchar(45) NOT NULL,
  "expiredAt" datetime NOT NULL,
  PRIMARY KEY ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;

CREATE TABLE "order" (
  "id" int NOT NULL,
  "shipping_fee" double NOT NULL,
  "delivery_info_id" int NOT NULL,
  PRIMARY KEY ("id"),
  KEY "fk_order_delivery_idx" ("delivery_info_id"),
  CONSTRAINT "fk_order_delivery" FOREIGN KEY ("delivery_info_id") REFERENCES
"deliveryinformation" ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;

CREATE TABLE "order_media" (
  "id" int NOT NULL AUTO_INCREMENT,
  "media_id" int NOT NULL,
  "order_id" int NOT NULL,
  "price" double NOT NULL,
  "quantity" int NOT NULL,
  PRIMARY KEY ("id"),
  KEY "fk_order_media_media_idx" ("media_id"),
  KEY "fk_order_media_order_idx" ("order_id"),
  CONSTRAINT "fk_order_media_media" FOREIGN KEY ("media_id") REFERENCES "media" ("id"),
  CONSTRAINT "fk_order_media_order" FOREIGN KEY ("order_id") REFERENCES "order" ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;

CREATE TABLE "invoice" (
  "id" int NOT NULL,
  "total_amount" int NOT NULL,

```

```

    "total_price" double NOT NULL,
    "order_id" int NOT NULL,
    PRIMARY KEY ("id"),
    KEY "fk_invoice_order_idx" ("order_id"),
    CONSTRAINT "fk_invoice_order" FOREIGN KEY ("order_id") REFERENCES "order" ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;

CREATE TABLE "paymenttransaction" (
    "id" int NOT NULL AUTO_INCREMENT,
    "amount" int NOT NULL,
    "content" varchar(100) NOT NULL,
    "method" varchar(45) NOT NULL,
    "transaction_time" datetime NOT NULL,
    "error_message" varchar(100) NOT NULL,
    "card_id" int NOT NULL,
    "invoice_id" int NOT NULL,
    PRIMARY KEY ("id"),
    KEY "fk_payment_card_idx" ("card_id"),
    KEY "fk_payment_invoice_idx" ("invoice_id"),
    CONSTRAINT "fk_payment_card" FOREIGN KEY ("card_id") REFERENCES "card" ("id"),
    CONSTRAINT "fk_payment_invoice" FOREIGN KEY ("invoice_id") REFERENCES "invoice" ("id")
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;

```