Industry Theme: Business
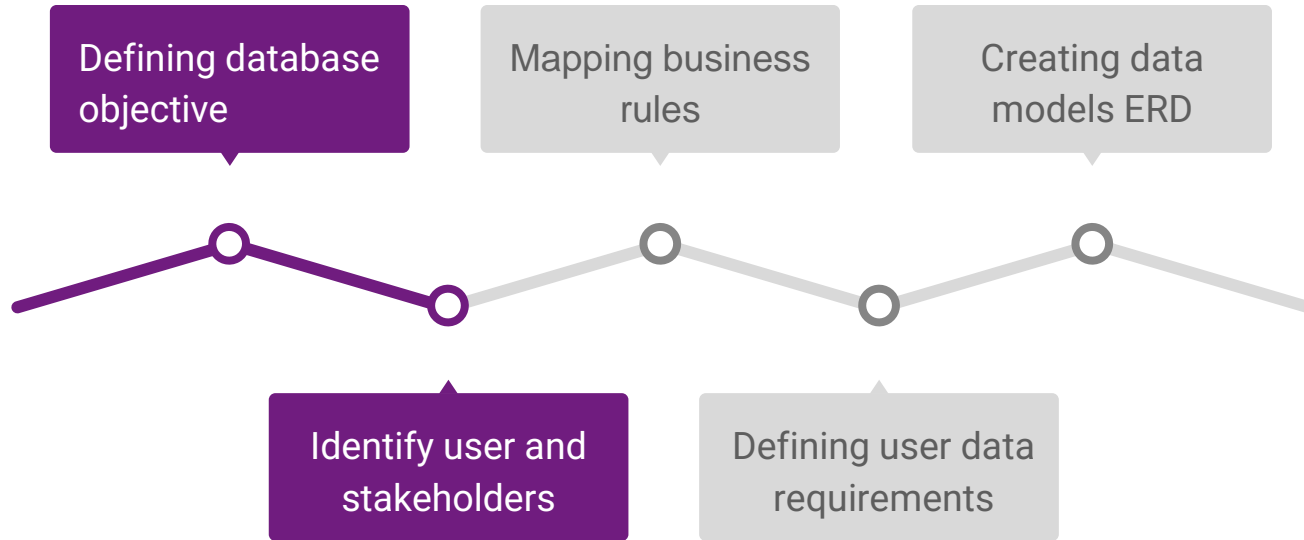
<u>Online Bookstore Database</u>

Alternative Assessment 1- Database WIA2001
Amir Firdaus Bin Abdul Hadi
17204620/2

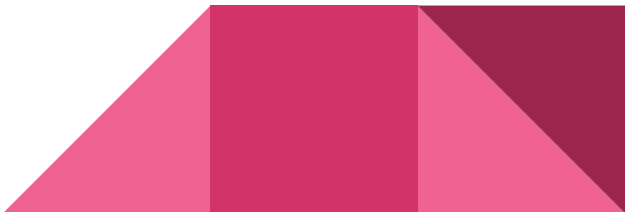# Database Design Process

Defining database objective

Mapping business rules

Creating data models ERD

Identify user and stakeholders

Defining user data requirements

Business Rules

01 — One customer can buy many books

02 — One book can have many authors

03 — One publisher can publish many books

04 — One customer must have at least one address and one payment information.

05 — One customer can put many orders in one order cart.

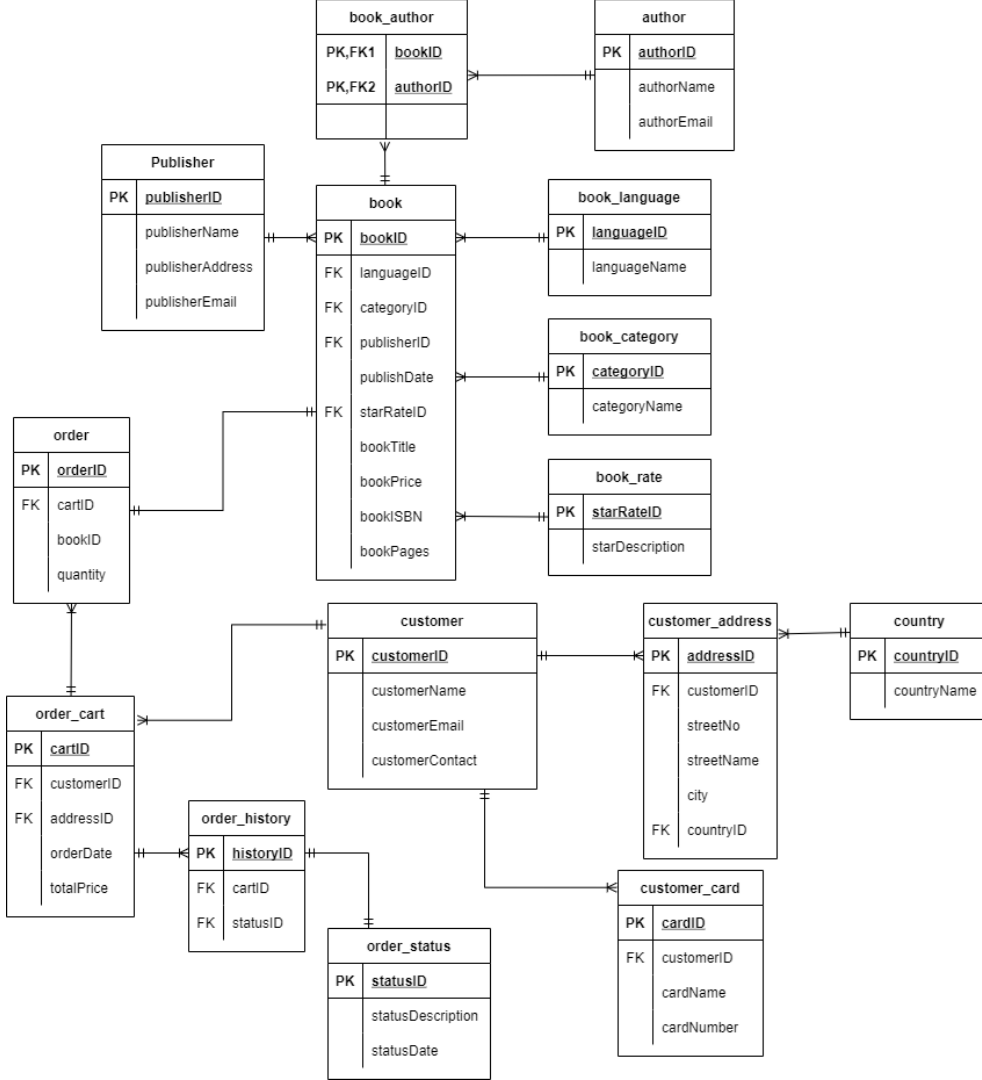**06** — Eachbooks have its own category and ratings.

Entity Relationship Diagram ERD

<u>Tables and attributes</u>

- **book** (bookID, languageID, categoryID, bookTitle, bookPages, bookISBN, publisherID, publishDate, starRateID, bookPrice)
- **book_language** (languageID, languageName)
- **book_category** (categoryID, categoryName)
- **book_rate** (starRateID, starDescription)
- **book_author** (bookID, authorID)
- **author** (authorID, authorName, authorEmail)
- **publisher** (publisherID, publisherName, publisherAddress, publisherEmail)
- **customer** (customerID, customerName, customerEmail, customerContact)
- **customer_address** (addressID, customerID, streetNo, streetName, city, country_id)
- **country** (countryID, countryName)
- **customer_card** (cardID, customerID, cardName, cardNumber)
- **order** (orderID, bookID, quantity)
- **order_cart** (cartID, orderDate, customerID, addressID, totalPrice)
- **order_history**(historyID, cartID, statusID)
- **order_status** (statusID, statusDescription, statusDate)

Entity Relationship Diagram ERD

book_author

PK,FK1	bookID
PK,FK2	authorID

author

PK	authorID
	authorName
	authorEmail

Publisher

PK	publisherID
	publisherName
	publisherAddress
	publisherEmail

book

PK	bookID
FK	languageID
FK	categoryID
FK	publisherID
	publishDate
FK	starRateID
	bookTitle
	bookPrice
	bookISBN
	bookPages

book_language

PK	languageID
	languageName

book_category

PK	categoryID
	categoryName

book_rate

PK	starRateID
	starDescription

order

PK	orderID
FK	cartID
	bookID
	quantity

order_cart

PK	cartID
FK	customerID
FK	addressID
	orderDate
	totalPrice

order_history

PK	historyID
FK	cartID
FK	statusID

customer

PK	customerID
	customerName
	customerEmail
	customerContact

customer_address

PK	addressID
FK	customerID
	streetNo
	streetName
	city
FK	countryID

country

PK	countryID
	countryName

order_status

PK	statusID
	statusDescription
	statusDate

customer_card

PK	cardID
FK	customerID
	cardName
	cardNumber

Sample SQL Queries

01

Display book title, its price and ratings where the rating is 4 and above.

```
SELECT book.bookTitle, book.bookPrice,
book_rate.starDescription
FROM book JOIN book_rate
ON book.starRateID = book_rate.starRateID
WHERE starRateID >= 4;
```

02

Display all book title under 'Mystery' category and pages more than 100 pages.

```
SELECT book.bookTitle, book.bookPages,
FROM book JOIN book_category ON
book.categoryID = category.categoryID
WHERE category.categoryName ='Mystery' AND
book.bookPages > 100;
```

03

Display customer name and email that bought books with a total exceeding RM300.

```
SELECT customer.customerName,
customer.customerEmail
FROM customer JOIN order_cart
ON customer.customerID = order_cart.customerID
WHERE order_cart.totalPrice >= 300;
```

Thanks!