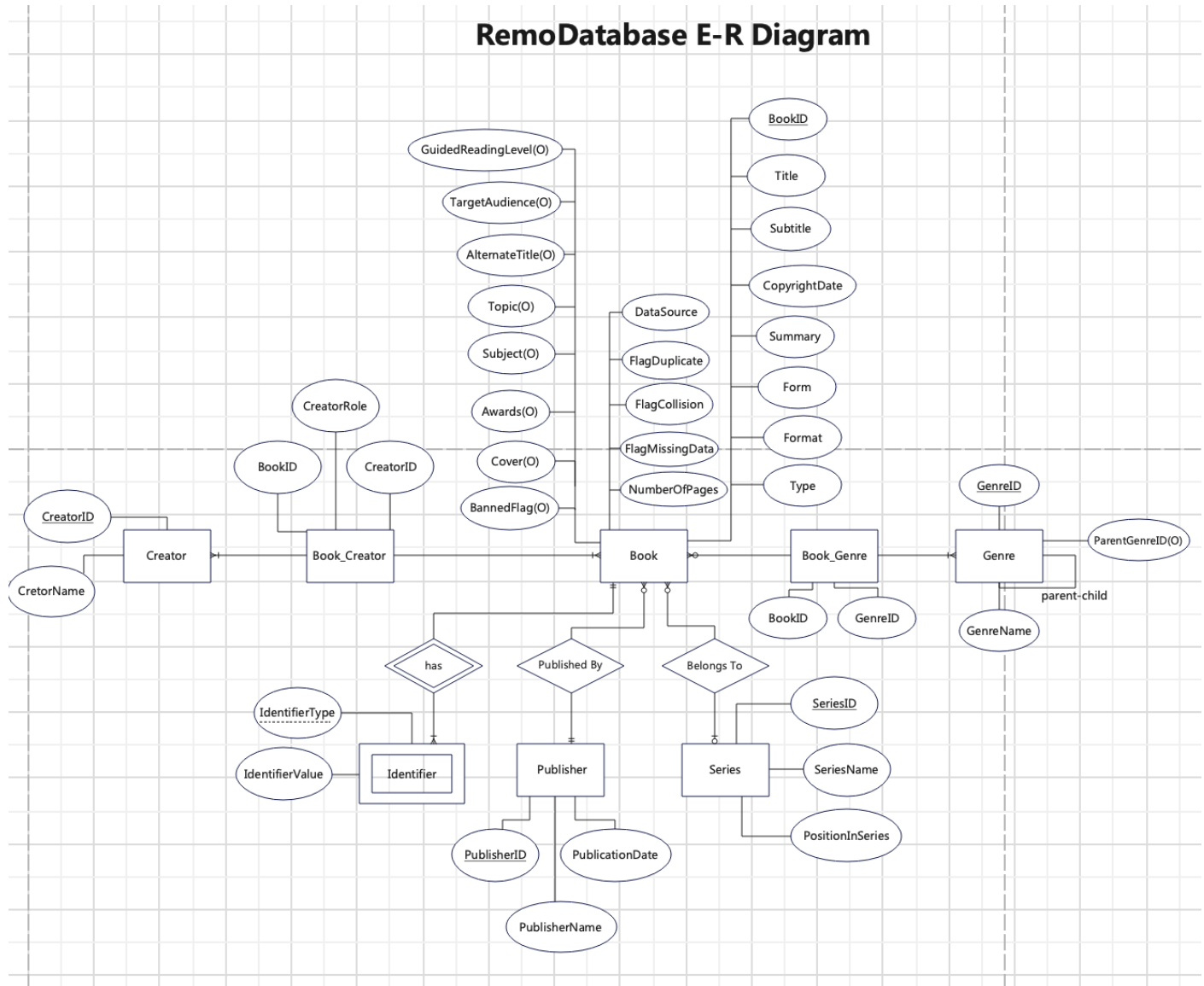


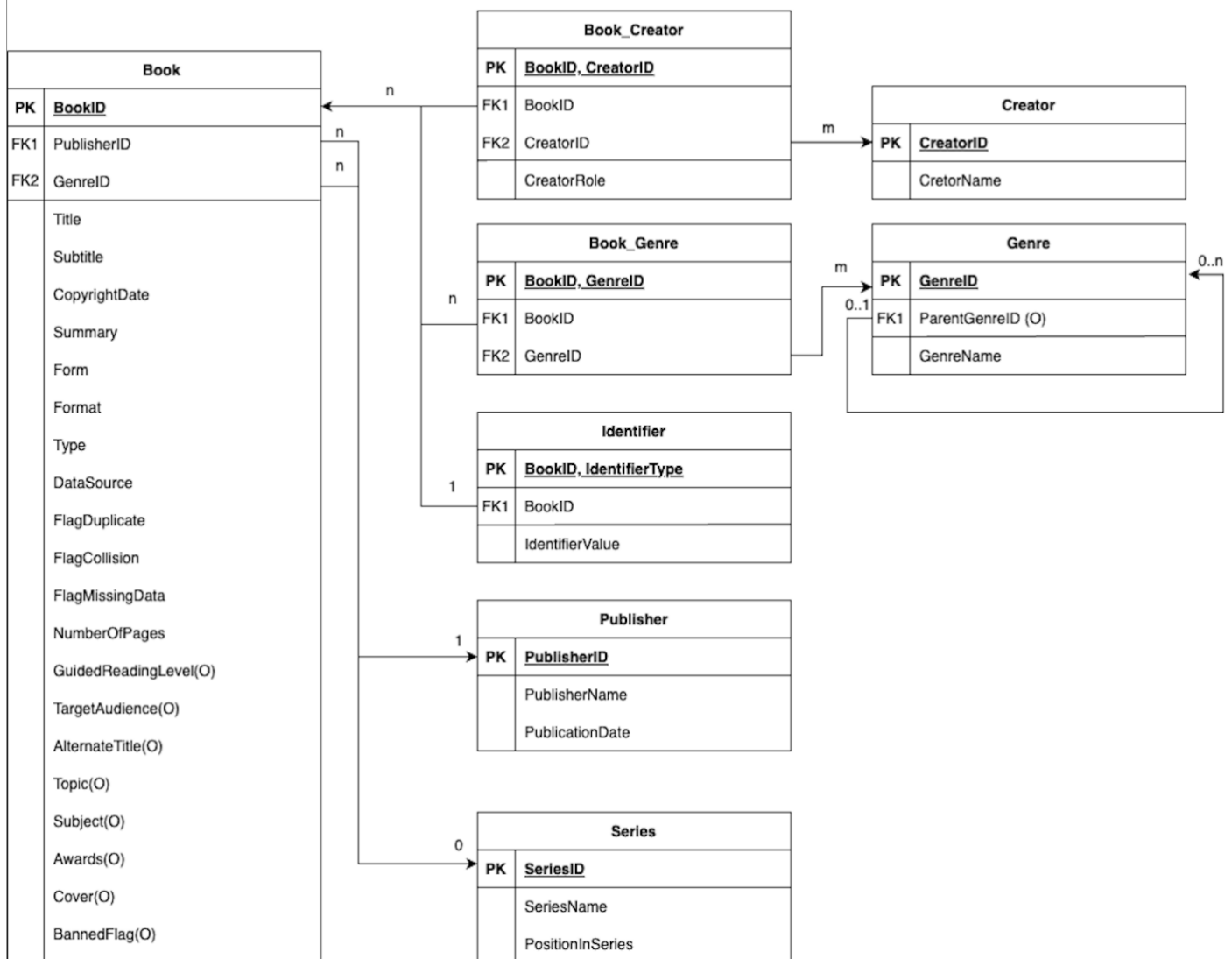
CS5200 Final Project Milestone 0 - Diagrams

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E-R Diagram and Schema



RemoDatabase Schema



1. Entities and Attributes

1) Book

- Primary Key:

BookID: Unique identifier for each book.

- Foreign Keys:

PublisherID: References Publisher.PublisherID.

GenreID: References Genre.GenreID.

- Attributes:

Title: Title of the book.

Subtitle: Subtitle of the book.

CopyrightDate: Date of copyright.

Summary: Summary or synopsis of the book.

Form: Type of book format (e.g., Graphic Novel, Picturebook).

Format: Format of the book (e.g., Paperback, Audiobook).

Type: Fiction, Nonfiction, or Blended.

- Optional Attributes:

DataSource, FlagDuplicate, FlagCollision, FlagMissingData, NumberOfPages, GuidedReadingLevel, TargetAudience, AlternateTitle, Topic, Subject, Awards, Cover, BannedFlag.

2) Creator

- Primary Key:

CreatorID: Unique identifier for each creator.

- Attributes:

CreatorName: Name of the creator (e.g., author, illustrator).

3) Book_Creator (Associative Entity)

- Primary Key:

Composite key consisting of BookID and CreatorID.

- Foreign Keys:

BookID: References Book.BookID.

CreatorID: References Creator.CreatorID.

- Attributes:

CreatorRole: Role of the creator (e.g., author, editor).

4) Genre

- Primary Key:

GenreID: Unique identifier for each genre.

- Foreign Key:

ParentGenreID (Optional): Self-referencing foreign key to indicate hierarchical genre structure, referencing Genre.GenreID.

- Attributes:

GenreName: Name of the genre.

5) Book_Genre (Associative Entity)

- Primary Key:

Composite key consisting of BookID and GenreID.

- Foreign Keys:

BookID: References Book.BookID.

GenreID: References Genre.GenreID.

6) Identifier(Weak Entity)

- Primary Key:

Composite key consisting of BookID and IdentifierType.

- Foreign Key:

BookID: References Book.BookID.

- Attributes:

IdentifierType: Type of identifier, e.g., ISBN or AISN.

IdentifierValue: Value of the identifier.

7) Publisher

- Primary Key:

PublisherID: Unique identifier for each publisher.

- Attributes:

PublisherName: Name of the publisher.

PublicationDate: Date of publication.

8) Series

- Primary Key:

SeriesID: Unique identifier for each series.

- Attributes:

SeriesName: Name of the series.

PositionInSeries: Position of the book within the series (e.g., #1, #2).

2. Relationships and Cardinalities

- **Book - Publisher:** 1:1 Relationship (Mandatory on Book side)

- A Book must have one Publisher, and each Publisher may publish multiple books.
- Cardinality: Book (n) to Publisher (1).

- **Book - Creator:** Many-to-Many Relationship through Book_Creator
 - Each Book can have multiple Creators, and each Creator can contribute to multiple books.
 - Relationship table Book_Creator includes BookID and CreatorID as foreign keys.
- **Book - Genre:** Many-to-Many Relationship through Book_Genre
 - Each Book can belong to multiple Genres, and each Genre can be associated with multiple books.
 - Relationship table Book_Genre includes BookID and GenreID as foreign keys.
- **Genre (Self-Referencing):** 0..n to 0..1 Relationship
 - Each Genre can have zero or more subgenres (children), and each subgenre has one optional parent genre.
 - In Genre, ParentGenreID references GenreID, showing a hierarchical relationship.
- **Book - Identifier:** 1: n Relationship
 - Each Book must have at least one Identifier (such as ISBN) but can have multiple identifiers.
 - Identifier table includes BookID as a foreign key.
- **Book - Series:** 0:1 Relationship
 - Each Book can optionally belong to one Series, and each Series can contain multiple books.
 - SeriesID in Book references Series.SeriesID.

Flowchart of interactions with user

