

Screaming Beckers: Daniel Stanev, Harry Tran

Dr. Eric Becker

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Entity and Relation Dictionaries

Entity Dictionary:

Weak Entity: Audiobook

Description:

Some books have an audiobook format that be rented out digitally

Attributes:

- Book_Length, TIME

Weak Entity: Bank_Account

Description:

Bank account owned by a person in the database

Attributes:

Surrogate Key: Routing_Num

- Routing_Num, INT

Entity: Book

Description:

Subclass of media, a book available to be rented out

Attributes:

Primary Key: Media_ID

- Author, VARCHAR(32)
- ISBN, INT

Entity: Clerk

Description:

Subclass of Employee, reserved for people checking in and out books

Attributes:

Primary Key: Person_ID

- Register_No, INT

Entity: Customer:

Description:

Subclass of person, reserved for customers of the library

Attributes:

Primary Key: Person_ID, INT

- Num_Borrowed, INT

Entity: Employee

Description:

Subclass of person, reserved for people employed by the library

Attributes:

- Primary Key: Person_ID, INT
- Salary, INT

Entity: Media

Description:

A piece of media available to be rented out at the library

Attributes:

Primary Key: Media_ID

- Genre, VARCHAR(32)
- Title, VARCHAR(100)
- Media_ID, INT
- Stock
 - Total_Stock, INT
 - Available_Stock, INT

Entity: Movie

Description:

Subclass of media, a DVD available to be rented out

Attributes:

Primary Key: Media_ID

- Movie_Length, TIME
- Production_Co, VARCHAR(32)

Entity: Music

Description:

Subclass of media, a music disk available to be rented out

Attributes:

Primary Key: Media_ID

- Artist, VARCHAR(32)
- Album, VARCHAR(32)
- Song_Length, TIME

Entity: Person

Description:

Any human entered into the database for any reason

Attributes:

- Primary Key: Person_ID, INT
- Person_ID, Int
- Name:
 - First_Name, VARCHAR(32)
 - Last_Name, VARCHAR(32)
- Address:
 - Street_Address, VARCHAR(100)
 - City, VARCHAR(20)
 - State, VARCHAR(2)

Entity: Publisher

Description:

The company that has published any given media in the database

Attributes:

Primary Key: Co_ID

- Co_Name, VARCHAR (100)
- Co_ID, INT

Weak Entity: Schedule

Description;

Entity that tracks which of 14 weekly shifts an employee works and their wage

Attributes:

- Shifts, VARBINARY(14)
- Wage, INT

Entity: Supervisor

Description:

Subclass of Employee, reserved for supervisors of employees

Attributes:

Primary Key: Person_ID, INT

Department, VARCHAR(32)

Subordinates, VARCHAR(1000)

Entity: Volunteer

Description:

Subclass of Employee, reserved for people volunteering at the library

Attributes:

- Primary Key: Person_ID
- Court_Mandated, BOOLEAN
- Department, VARCHAR(32)

Relation Dictionary:

Relationship: Borrows

Description:

The act of a customer borrowing a piece of media

Entities: Customer, Media

Cardinality: *: * (many-to-many)

Participation: Partial : Partial

Relationship: Has

Description:

The relationship of a person having a bank account

Entities: Person, Bank_Account

Cardinality: 1:1 (one-to-one)

Participation: Partial : Partial

Relationship: Has_Format

Description:

Books may be available as an audiobook

Entities: Book, Audiobook

Cardinality: 1:1 (one-to-one)

Participation: Partial : Total

Relationship: Publishes

Description:

Each publisher publishes some media

Entities: Publisher, Media

Cardinality: 1:* (one-to-many)

Participation: Total : Total

Relationship: Supervises

Description:

Every supervisor supervises some employees

Entities: Supervisor, Employee

Cardinality: 1:* (one-to-many)

Participation: Total : Total

Relationship: Works

Description:

Every employee works their schedule

Entities: Employee, Schedule

Cardinality: 1:1 (one-to-one)

Participation: Total : Total