Assignment

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Library Maragement System with Advanced Quely apabilities Develop with a database to manage library; inventory, borrowing records, member details and staff assignments. Requirements: give Design tables for books, Members Borrowing records, staff and fines with Constraints to ensure data consulency, write stored procedure for borrowing, refurning book and alcolating eventues fires use trigger to update book write complex SOL queries for generating members borrowing history, popular book reports and ordance to a book list give metiating

Conceptial ER diagram: This diagram arthres the entities and their basic relationship, with out facusing on database attributes or specific implomentation. Books book-id(pk) > | Member-id (pk) istaff_d(pk) ISBN name 1 name 1 Contact-into author I member hip-stabs genre. (Contact-info) I data-joined dra_hived 1 1 Fines Member-shaff borrow_id (pk) ifine -id (PK) member Lid (FK) membel-id(FK) 1 borrow-id(FK) staff-id (FK)! book-id (FK) over due-days borrow-data fire-amount doc_data return-date fine-amount.

This diagram refines the conceptual model by adding specific attributes and specifying Primary and frozeigh keys.

[Books] [Members] [Borrowsia Result

Books
| Members
| book-id (PK) | Member-id (PK) | K
| ISBN | Name
| title | Confect-info
| author | membership status |
| genre | data joined |

Borrowing Records

| borrow-id (PK)

| member-id (FK)

| book-id (FK)

| borrow-date

| doe-date

| veturn-data

| fine-amount.

| fire-id(pk) |
| borrow-id(Fk) |
| averable -days |
| five-amount |
| staff - id(pk) |
| name |
| role |
| date-hired |

Physial Ex diagram:

In the physical ER diagram, we follow on how the entitles will be implemented in a velational database. This includes detailed specification for each table, including primary and foreigh keys and any constraints such as NOTN or unique.

Books 7 Members Borrowing Records borrow-id INT (PK member-id ZNT (PK) & book-id ZNT(PK) + membel-id ZNT (FK) Name VARCHAR (255) 1 TSBN WARCHAR (13) (unique) book-id zn7 (FK) Contact-infor VarchAR (255 borrow-dete (Date) title VARCHAR (255) rembel ships tatus ENOM (achie, iraty reform Date author VARCHAR (251) date joined genic VARCHAR (100) availability ENUM ("available") fine-id ZNI (PK) borrow-id ZNT (FK) Overdue-day (INT)

| Fine amount Decimal (1012) |

| Staff
|- | Staff-id ZNT (PK)
| rame VARCHAR (255) |

| Vale trum (librarian, assistant)
| contact-into (varchar (25)
| date-hired DATE.]

1. Create Tables:

CREATE TABLE Books (

Book ID INT PRIMARY Key

Title VARCHAR(100),

Author ID INT,

Genre VARCHAR (50),

published your (INT);

(opiesAvailable INT,

FOREZGN Key (Author ZD) REFERENCES Author (Author ZD) 1101/11-d-408, 1-01-6205, 1/11) to

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esperat long to don that a rule;

STELLE Newfor , now, richt, Title, lange Due

31 JR. T. Tolkeni wild hadail

CREATE TABLE Authors (

Atthor ZD INT PRIMARY Key

NAME VARCHAR (100),

Country VARCHAR(50) SELECT rember there rembers throils Body Title local.

"(reak Table loans

close been on somes tender to have render Loan 20 INT PRIMARY Key,

Member ID ZNT,

Loan Date DATAE,

DUE DATE DATE,

RETURNDAK DATE,

FOREIGN Key (BOOK ZD) REFERENCES BOOKS (BOOK ZD),

FORFIGH Key (member 10) REF-ERENCES Member (member 20)

Insert Data sample:

Insert INTO Author (Author ID, Name, Country) Values (1, '7. K. Rashing! 'United Kingdom'),
(2, 'Cheorge orwell, lunited Kingdom'), (3, - JR. P. - Tolkien', 'United Kingdom').

InsERT INTO Member (Member 20, NAME, Addres, Phone, Email, Membership Date) Values (1, Alice Johnson: 123 Maple street!, 1234567890: alice@example.com 202346 Insert into loans (Loan 20, Book 10, Member 20, loan Date, Due Date, Return Date Values (1,1,1, 2024-10-1, 2024-6-15/NUL),

ONEYES:-SILECT THE bear, published year, Copies Available From Books

WHERE Copies Available >0;

SELECT Member. Name, members. Email, Books. Title, Loans. Loansate, loans. are Date

from members

Join Loans on Members member 20-loans member 20

Join books on Loans book ID=Books. Book 20.

WHERE Loans, Return Date is NULL;

SELECT Members. Name, Books. Title, loans. Due Dat

From loans Join Member on Loans. Member 20 - Member. Member 20 Join Books on Loans. Book 7D= Books, Book 20

WHERE Coars. On hum Oate 25 NOVI AND TOOMS. DUR DATE ();