## Library Database Management System: SQL Codes

## CIS 9340 URA 24041

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**Final Relations & Respective Insert Statements:**

1. **Librarian (Employee\_ID, First\_Name, Last\_Name, Job\_Title)**

**SQL Query:**

**Creating Table:**

CREATE TABLE Librarian (

Employee\_ID NUMBER NOT NULL,

First\_Name VARCHAR(30),

Last\_Name VARCHAR(30),

Job\_Title VARCHAR(30),

CONSTRAINT pk\_Librarian PRIMARY KEY (Employee\_ID)

)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Librarian

VALUES (116789, ‘Jasmine’, ‘Xu', ‘Librarian’)

**Row-2:**

INSERT INTO Librarian

VALUES (116790, ‘Akhila’, ‘Pamukuntla', ‘IT Help Desk’)

1. **Book\_Loan (Loan\_ID, Date\_Loan\_Start, Date\_Loan\_Due, Employee\_ID (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Book\_Loan (

Loan\_ID NUMBER NOT NULL,

Date\_Loan\_Start DATE,

Date\_Loan\_Due DATE,

Employee\_ID NUMBER NOT NULL,

CONSTRAINT pk\_Book\_Loan PRIMARY KEY (Loan\_ID)

)

**Adding Foreign Key:**

ALTER TABLE Book\_Loan

ADD CONSTRAINT fk1\_Book\_Loan FOREIGN KEY (Employee\_ID) REFERENCES Librarian ( Employee\_ID)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Book\_Loan

VALUES (1112, #6/8/2020#, #6/20/2020#, 136792)

**Row-2:**

INSERT INTO Book\_Loan

VALUES (2039, #7/14/2020#, #7/28/2020#, 186797)

1. **Member (Member\_ID, Email\_ID (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Member (

Member\_ID NUMBER NOT NULL,

Email\_ID VARCHAR(40) NOT NULL,

CONSTRAINT pk\_Member\_ID PRIMARY KEY (Member\_ID)

)

**Adding Foreign Key:**

ALTER TABLE Member

ADD CONSTRAINT fk1\_Member FOREIGN KEY (Email\_ID) REFERENCES Member\_Info ( Email\_ID)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Member

VALUES (967594, [‘stendulkar@gmail.com’](mailto:‘stendulkar@gmail.com’))

**Row-2:**

INSERT INTO Member

VALUES (967595, [‘virat\_kohli@hotmail.com](mailto:‘virat_kohli@hotmail.com)’)

1. **Member\_Info (Email\_ID ,First\_Name, Last\_Name, Phone\_Number, Member\_Status)**

**SQL Query:**

**Creating Table:**

CREATE TABLE Member\_Info (

Email\_ID VARCHAR(40) NOT NULL,

First\_Name VARCHAR(30) ,

Last\_Name VARCHAR(30),

Phone\_Number NUMBER ,

Member\_Status VARCHAR(10),

CONSTRAINT pk\_Member\_Info PRIMARY KEY (Email\_ID)

)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Member\_Info

VALUES ([‘andy\_bernard@cornell.edu’](mailto:‘andy_bernard@cornell.edu’), ‘Andy’, ‘Bernard’, 5168399595, ‘Active’)

**Row-2:**

INSERT INTO Member\_Info

VALUES ([‘angela.sprinkles@gmail.com](mailto:‘angela.sprinkles@gmail.com)’, ‘Angela’, ‘Martin’, 5168575744, ‘Active’)

1. **Member\_Book\_Loan (Member\_ID (FK), Loan\_ID (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Member\_Book\_Loan (

Loan\_ID NUMBER NOT NULL,

Member\_ID NUMBER NOT NULL,

CONSTRAINT pk\_Member\_Book\_Loan PRIMARY KEY (Loan\_ID, Member\_ID)

)

**Adding Foreign Key-1:**

ALTER TABLE Member\_Book\_Loan

ADD CONSTRAINT fk1\_Member\_Book\_Loan FOREIGN KEY (Loan\_ID) REFERENCES Book\_Loan (Loan\_ID)

**Adding Foreign Key-2:**

ALTER TABLE Member\_Book\_Loan

ADD CONSTRAINT fk2\_Member\_Book\_Loan FOREIGN KEY (Member\_ID) REFERENCES Member (Member\_ID)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Member\_Book\_Loan

VALUES (1112, 967594)

**Row-2:**

INSERT INTO Member\_Book\_Loan

VALUES (8989, 967594)

1. **Book\_Overdue (Overdue\_ID, Return\_Date, Fine\_Per\_Day, Loan\_ID (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Book\_Overdue (

Overdue\_ID VARCHAR(10) NOT NULL,

Return\_Date DATE ,

Fine\_Per\_Day NUMBER ,

Loan\_ID NUMBER NOT NULL,

CONSTRAINT pk\_Book\_Overdue PRIMARY KEY (Overdue\_ID)

)

**Adding Foreign Key:**

ALTER TABLE Book\_Overdue

ADD CONSTRAINT fk1\_Book\_Overdue FOREIGN KEY (Loan\_ID) REFERENCES Book\_Loan (Loan\_ID)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Book\_Overdue

VALUES (‘OD-001’, #5/27/2020#, 0.5, 9454)

**Row-2:**

INSERT INTO Book\_Overdue

VALUES (‘OD-002’, #1/3/2021#, 0.5, 9454)

1. **Book\_Return (Return\_ID, Date\_Loan\_Due, Loan\_ID (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Book\_Return (

Return\_ID NUMBER NOT NULL,

Date\_Loan\_Due DATE ,

Loan\_ID NUMBER NOT NULL,

CONSTRAINT pk\_Book\_Return PRIMARY KEY (Return\_ID)

)

**Adding Foreign Key:**

ALTER TABLE Book\_Return

ADD CONSTRAINT fk1\_Book\_Return FOREIGN KEY (Loan\_ID) REFERENCES Book\_Loan (Loan\_ID)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Book\_Return

VALUES (10000, #9/30/2020#, 5753)

**Row-2:**

INSERT INTO Book\_Return

VALUES (10001, #2/10/2021#, 3948)

1. **Book\_Copy (Loan\_ID (FK), Copy\_ID (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Book\_Copy (

Loan\_ID NUMBER NOT NULL,

Copy\_ID NUMBER NOT NULL,

CONSTRAINT pk\_Book\_Copy PRIMARY KEY (Loan\_ID, Copy\_ID)

)

**Adding Foreign Key-1:**

ALTER TABLE Book\_Copy

ADD CONSTRAINT fk1\_Book\_Copy FOREIGN KEY (Loan\_ID) REFERENCES Book\_Loan (Loan\_ID)

**Adding Foreign Key-2:**

ALTER TABLE Book\_Copy

ADD CONSTRAINT fk2\_Book\_Copy FOREIGN KEY (Copy\_ID) REFERENCES Copy (Copy\_ID)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Book\_Copy

VALUES (1112, 1233)

**Row-2:**

INSERT INTO Book\_Copy

VALUES (2039, 1237)

1. **Copy (Copy\_ID, Book\_location, Loan\_ID (FK), ISBN (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Copy (

Copy\_ID NUMBER NOT NULL,

Book\_Location VARCHAR(10),

Loan\_ID NUMBER NOT NULL,

ISBN NUMBER NOT NULL,

CONSTRAINT pk\_Copy PRIMARY KEY (Copy\_ID)

)

**Adding Foreign Key-1:**

ALTER TABLE Copy

ADD CONSTRAINT fk1\_Copy FOREIGN KEY (Loan\_ID) REFERENCES Book\_Loan (Loan\_ID)

**Adding Foreign Key-2:**

ALTER TABLE Copy

ADD CONSTRAINT fk2\_Copy FOREIGN KEY (ISBN) REFERENCES Book (ISBN)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Copy

VALUES (1232, ‘A0’, 3879, 9780553296983)

**Row-2:**

INSERT INTO Copy

VALUES (1233, ‘A1’, 1112, 9780553052435)

1. **Genre\_Type (Genre\_ID, Genre, Sub\_Genre, Language)**

**SQL Query:**

**Creating Table:**

CREATE TABLE Genre\_Type (

Genre\_ID NUMBER(10) NOT NULL,

Sub\_Genre VARCHAR(20),

Genre VARCHAR(20),

Language VARCHAR (20),

CONSTRAINT pk\_Genre\_Type PRIMARY KEY (Genre\_ID)

)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Genre\_Type

VALUES (3847, ‘Non-Fiction', ‘Science’, ‘English’)

**Row-2:**

INSERT INTO Genre\_Type

VALUES (6711, ‘Fiction', ‘History’, ‘English’)

1. **Publisher (Publisher\_ID, Publishing\_House, Country)**

**SQL Query:**

**Creating Table:**

CREATE TABLE Publisher (

Publisher\_ID NUMBER NOT NULL,

Publishing\_House VARCHAR(30),

Country VARCHAR(10),

CONSTRAINT pk\_Publisher PRIMARY KEY (Publisher\_ID)

)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Publisher

VALUES (1013, ‘Simon & Schuster’, ‘USA’)

**Row-2:**

INSERT INTO Publisher

VALUES (1026, ‘Modern Library’, ‘USA’)

1. **Book (ISBN, Price, Format, Publication\_Date, Title, Genre\_ID (FK), Publisher\_ID (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Book (

ISBN NUMBER NOT NULL,

Price NUMBER,

Format VARCHAR(10),

Publication\_Date DATE,

Title VARCHAR(40),

Genre\_ID NUMBER NOT NULL,

Publisher\_ID NUMBER NOT NULL,

CONSTRAINT pk\_Book PRIMARY KEY (ISBN)

)

**Adding Foreign Key-1:**

ALTER TABLE Book

ADD CONSTRAINT fk1\_Book FOREIGN KEY (Genre\_ID) REFERENCES Genre\_Type (Genre\_ID)

**Adding Foreign Key-2:**

ALTER TABLE Book

ADD CONSTRAINT fk2\_Book FOREIGN KEY (Publisher\_ID) REFERENCES Publisher (Publisher\_ID)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Book

VALUES (9780060188702, 9.99, ‘Softcover', #5/23/2004#, ‘Don Quixote’, 7854, 3746)

**Row-2:**

INSERT INTO Book

VALUES (9780060850524, 11.54, ‘Hardcover', #4/15/2005#, ‘Brave New World’, 7001, 4536)

1. **Author (Author\_ID, First\_Name, Last\_Name, Country)**

**SQL Query:**

**Creating Table:**

CREATE TABLE Author (

Author\_ID VARCHAR(10) NOT NULL,

First\_Name VARCHAR(30),

Last\_Name VARCHAR(30),

Country VARCHAR(30),

CONSTRAINT pk\_Author PRIMARY KEY (Author\_ID)

)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Author

VALUES (‘A1072’, ‘Fyodor’, ‘Dostoevsky’, ‘Russia’)

**Row-2:**

INSERT INTO Author

VALUES ('A1162', ‘Charles’, ‘Dickens’, ‘UK’)

1. **Book\_Author (ISBN (FK), Author\_ID (FK))**

**SQL Query:**

**Creating Table:**

CREATE TABLE Book\_Author (

Author\_ID VARCHAR(10) NOT NULL,

ISBN NUMBER NOT NULL,

CONSTRAINT pk\_Book\_Author PRIMARY KEY (Author\_ID, ISBN)

)

**Adding Foreign Key-1:**

ALTER TABLE Book\_Author

ADD CONSTRAINT fk1\_Book\_Author FOREIGN KEY (Author\_ID) REFERENCES Author (Author\_ID)

**Adding Foreign Key-2:**

ALTER TABLE Book\_Author

ADD CONSTRAINT fk2\_Book\_Author FOREIGN KEY (ISBN) REFERENCES Book (ISBN)

**Inserting Data for Testing Purpose:**

**Row-1:**

INSERT INTO Book\_Author

VALUES (‘A1072’, 9781593080815)

**Row-2:**

INSERT INTO Book\_Author

VALUES ('A1162', 9780141439600)