KATHMANDU UNIVERSITY
Department of Computer Science and Engineering

Database Management System
COMP 232

Lab 2 Report

Submitted By

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Date: 20-02-2022
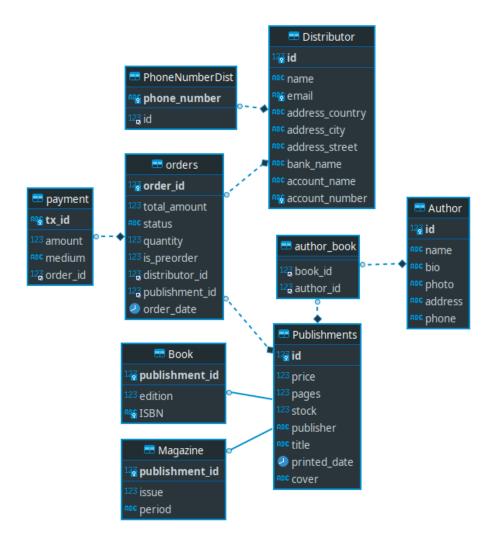
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Figure 1: Database ER Diagram

Chapter 1

DDL Scripts

1.1 Creating the tables

```
CREATE TABLE Author
(
        id int UNIQUE NOT NULL auto_increment,
        name varchar(30),
        bio varchar(255),
        photo varchar(255),
        address varchar(255),
        phone varchar(255) UNIQUE ,
        primary key (id)
)


-- Create supertype table publishment. Magazine and Book to
    be the weak entity to inherit
-- publishments.
CREATE TABLE Publishments
(
        id int NOT NULL UNIQUE AUTO_INCREMENT,
        price double,
        pages int,
        stock int,
        publisher varchar(255),
        title varchar(255),
        printed_date date,
        cover varchar(255),
        primary key (id)
)


-- Since book and magazine are the weak entiry, they don't
    have primary key
```

```
-- rather they depend on the id or publishment.
CREATE TABLE Book
(
        publishment_id int UNIQUE,
        edition double,
        ISBN varchar(50) NOT NULL UNIQUE,
        foreign key (publishment_id) REFERENCES Publishments
            (id) ON DELETE CASCADE
)

CREATE TABLE Magazine
(
        publishment_id int UNIQUE,
        issue double NOT NULL,
        period varchar(20) default 'Monthly',
        foreign key (publishment_id) references Publishments
            (id) ON DELETE CASCADE
)

-- Creating table for distributor.
-- Since we have one multi valued attribute, ie phone
    number. We have no they than
-- creating a separate table to store phone number.
CREATE TABLE Distributor
(
        id int NOT NULL UNIQUE auto_increment,
        name varchar(50) NOT NULL,
        email varchar(50) NOT NULL UNIQUE,
        address_country varchar(50) NOT NULL,
        address_city varchar(50) NOT NULL,
        address_street varchar(100) NOT NULL,
        bank_name varchar(100),
        account_name varchar(50),
        account_number varchar(50) UNIQUE,
        primary key (id)
)

CREATE TABLE PhoneNumberDist
(
        id int,
        phone_number varchar(10) NOT NULL UNIQUE,
        FOREIGN KEY (id) REFERENCES Distributor(id) ON
            DELETE CASCADE
)

-- now the relation entity
CREATE TABLE orders
(
        order_id int NOT NULL UNIQUE auto_increment,
        total_amount double NOT NULL,
```

```
        status varchar(50) DEFAULT 'Placed',
        quantity int NOT NULL,
        is_preorder bool DEFAULT FALSE,
        distributor_id int NOT NULL,
        publishment_id int NOT NULL,
        PRIMARY KEY(order_id),
        FOREIGN KEY(distributor_id) REFERENCES Distributor(
            id),
        FOREIGN KEY(publishment_id) REFERENCES Publishments(
            id)
)

ALTER TABLE orders ADD order_date date;

-- Spearate table for payment which is a composite
    attribute for order
CREATE TABLE payment
(
        tx_id varchar(50) NOT NULL UNIQUE,
        amount double NOT NULL,
        medium varchar(50) NOT NULL,
        order_id int,
        PRIMARY KEY(tx_id),
        FOREIGN KEY(order_id) REFERENCES orders(order_id)
)


CREATE TABLE author_book
(
        book_id int NOT NULL,
        author_id int NOT NULL,
        FOREIGN KEY(book_id) REFERENCES Publishments(id),
        FOREIGN KEY(author_id) REFERENCES Author(id)
)
```

1.2 Populating data

```
-- Adding Random Author Data

INSERT INTO Author (name,bio,photo,address,phone) VALUES
(
        'Aayush Paudel',
        'Good Writer.',
        'https://hatrabbits.com/wp-content/uploads/2017/01/
            random.jpg',
        'Kathmandu',
        '9876543210'
),
```

```
(
        'Aayush Aryal',
        'Hero Writer',
        'https://hatrabbits.com/wp-content/uploads/2017/01/
            random.jpg',
        'Footpath',
        '0123456789'
),
(
        'Sushant Adhikari',
        'Chill Writer',
        'https://hatrabbits.com/wp-content/uploads/2017/01/
            random.jpg',
        'Pokhara',
        '0123498765'
),
(
        'Aayush Marasini',
        'Hot Writer',
        'https://hatrabbits.com/wp-content/uploads/2017/01/
            random.jpg',
        'Kathmandu',
        '0912345678'
)


-- Insert random book data

INSERT INTO Publishments (price,pages,stock,publisher,title
    ,printed_date,cover) VALUES
(
        600.00,
        100,
        1000,
        'Manjari Publications',
        'Bagwat Gita',
         NOW(),
        'https://pbs.twimg.com/profile_images
            /1202979137184354305/yKvAZsT3_400x400.jpg'
),

INSERT INTO Book (publishment_id,edition,ISBN) VALUES
(
        LAST_INSERT_ID(),
        1,
        '1234567'
)

INSERT INTO Publishments (price,pages,stock,publisher,title
    ,printed_date,cover) VALUES
```

```
(
        12050.00,
        100,
        1000,
        'Manjari Publications',
        'University Physics',
         NOW(),
        'https://pbs.twimg.com/profile_images
            /1202979137184354305/yKvAZsT3_400x400.jpg'
)

INSERT INTO Book (publishment_id,edition,ISBN) VALUES
(
        LAST_INSERT_ID(),
        3,
        '6585645'
)


-- Insert Magazine Data

-- Insert random book data

INSERT INTO Publishments (price,pages,stock,publisher,title
    ,printed_date,cover) VALUES
(
        100.00,
        10,
        1000,
        'Manjari Publications',
        'Time Magazine',
         NOW(),
        'https://pbs.twimg.com/profile_images
            /1202979137184354305/yKvAZsT3_400x400.jpg'
)

INSERT INTO Magazine (publishment_id,issue) VALUES
(
        LAST_INSERT_ID(),
        2
)

INSERT INTO Publishments (price,pages,stock,publisher,title
    ,printed_date,cover) VALUES
(
        120.00,
        20,
        5000,
        'Manjari Publications',
        'Times India Magazine',
```

```
         NOW(),
        'https://pbs.twimg.com/profile_images
            /1202979137184354305/yKvAZsT3_400x400.jpg'
)

INSERT INTO Magazine (publishment_id,issue,period) VALUES
(
        LAST_INSERT_ID(),
        2,
        'Annual'
)


-- Adding Data in Distributor Tables

INSERT INTO Distributor (name,email,address_country,
    address_city,address_street,bank_name,account_name,
    account_number) VALUES
(
        'Mero Link Pvt Ltd',
        'merolink@gmail.com',
        'Nepal',
        'Dhulikhel',
        'Vandol',
        'NIC Asia Bank',
        'Mero Link Pvt Ltd',
        '110020094023403'
)

INSERT INTO Distributor (name,email,address_country,
    address_city,address_street,bank_name,account_name,
    account_number) VALUES
(
        'Tech Himalaya Pvt Ltd',
        'techhimalaya28@gmail.com',
        'Nepal',
        'Bharatpur',
        'Shamichowk',
        'Everest Asia Bank',
        'Tech Himalaya Software Solutions Pvt Ltd',
        '110020094023567'
)

-- Inserting Distributor Phone Numbers in PhoneNumberDist
    Tables

INSERT INTO PhoneNumberDist VALUES
(
        2,
        '9869698962'
```

```
),
(
        2,
        '9865383233'
),
(
        1,
        '9845144428'
),
(
        1,
        '9865383246'
)

-- Assignning Authors to a book
INSERT INTO author_book VALUES (1,1)
INSERT INTO author_book VALUES (1,2)
INSERT INTO author_book VALUES (2,3)
INSERT INTO author_book VALUES (2,4)

-- Creating Orders

order_id int NOT NULL UNIQUE auto_increment,
        total_amount double NOT NULL,
        status varchar(50) DEFAULT 'Placed',
        quantity int NOT NULL,
        is_preorder bool DEFAULT FALSE,
        distributor_id int NOT NULL,
        publishment_id

INSERT INTO orders(total_amount,status,quantity,is_preorder
    ,distributor_id,publishment_id,order_date) VALUES
(
        2000,
        'Paid',
        4,
        TRUE,
        1,
        1,
        '1980-12-17'
)

INSERT INTO orders(total_amount,status,quantity,is_preorder
    ,distributor_id,publishment_id,order_date) VALUES
(
        12050,
        'Unpaid',
        1,
        FALSE,
        2,
```

```
        2,
        NOW()
)

-- Doing Payments
tx_id varchar(50) NOT NULL UNIQUE,
        amount double NOT NULL,
        medium varchar(50) NOT NULL,
        order_id int,

INSERT INTO payment VALUES
(
        'ds656uhajdh',
        2000.00,
        'Bank Transfer',
        1
)
```

1.3   Queries

1.3.1   Find the name of all published books.

1.3.2   Find the name of all books published before 2000.

1.3.3   Get the details of the books written by a particular author.

1.3.4   Find the name of all weekly publications.

1.3.5   Find the name of pre-ordered books.

1.3.6   Get the details of all publications with the name starting with an 'A'.

1.3.7   Find all the orders for a particular book. The result must be sorted based on the order date.

Chapter 2

Pattern Matching