Abstract

The library management system is a project aimed at creating a computerized system to preserve all the library's daily work. There are many features in this project that are typically not included in common library management systems, such as a user can fully control facility the whole system. We used Enhanced Entity Relationship (EER) Diagram to design this database. Therefore, we were able to expand whole system with new technology. We used MS SQL Server to create this database project. in this project we introduced new triggers, view statements, user define functions and store procedure statements for efficient control. our project is being built to help library staff manage the library in the best possible way and minimize human efforts as well.

Table of contents

Section 01

1.1. Introduction

1.2. Project Objectives

1.3 Scope of the project

1.4. Data Requirements

1.5. Enhanced Entity Relationship (EER) Diagram

1.6. Assumptions

1.7. Relationships- Cardinality

1.8. Relational Mapping

1.9. Data Normalization

1.10. Data Dictionary

Section 02

2.1. Tables and Constrains

2.2. Database Diagram

2.3. Tables- Sample records

Section 03

3.1. Trigger Statements

3.2. View Statements

3.3. Function Statements

3.4. Procedure Statements

Section 04

4.1. Critical Evaluation

4.2. Future Implementations

References

1.1. Introduction

The management system of the project library is based on a database system that monetizes all library transactions. Using a computerized system. Microsoft SQL server was used to create this database system. We used Enhanced Entity Relationship (EER) Diagram to design this database. Therefore, we were able to expand whole system with new technology. the librarian uses it to control the library where he/she can monitor different transactions such as book issues, book returns, new books added, new students added, etc. The database stores information about its libraries, books, publisher, authors, borrowers, guarantors of borrowers, employees, orders, categories of books, types of borrowers, types of employees, copies of books, loan of books and branch management. This system also involves books and student maintenance modules that will keep track of the students using the library and also a detailed overview of the books that a library contains. There will be no loss of the book record or participant record for this computerized system, which usually occurs while using a non-computerized system. Compared to library systems that are not computerized. we introduced new triggers, view statements, user define functions and store procedure statements for efficient control. our project is being built to help library staff manage the library in the best possible way. all these modules will allow librarians to handle the library more conveniently and in a more productive way.

1.2. Project Objectives

1. To provide users with easy access with user friendly controls.
2. Creation, upgrading or deleting of a database information with providing alert statements.
3. To have entire control over the library service.
4. For expense and time savings.
5. To remove the library operating on paper.
6. To preserve data accuracy.
7. To perform daily routines effectively.

1.3 Scope of the project

The project offers a very straightforward way of managing all library functions and is a complete solution for all libraries. The majority of public libraries still use a manual system. To eliminate manual system issues, we are implementing our computerized system. It will be a terrific one, assist such libraries in accomplishing their everyday tasks.

1.4 Data Requirements

Entities

- Publisher
- Author
- Borrower
  - *Student*
  - *Non-Student*
- Guarantor
- Book
- Loan
- Copy
- Library
  - *Main*
  - *Branch*
- Employee
  - *Permanent*
  - *Temporary*

Attributes

Publisher Entity

- Publisher id
- Publisher name
- Phone number
- Email address
- Publisher address

Author Entity

- Author id
- Author name
- Phone number
- Email address
- Author address

Borrower Entity

- Borrower Id
- Borrower Type
- F Name
- L Name
- Gender
- NIC
- DOB
- Phone number
- Email address

- Home address
- Institute name
- Company name

Student Entity

- Borrower Id
- Institute name

Non-Student Entity

- Borrower Id
- Company name

Guarantor Entity

- Guarantor ID
- F Name
- L Name
- Title
- Gender
- NIC
- DOB
- Phone number
- Email address
- Home address

Book Entity

- ISBN
- Book name
- Title
- Volume
- Book year

Copy Book Entity

- ISBN
- Library Id
- Copy Id
- Price

Loan Entity

- Borrower Id
- Loan Id
- Copy Id
- Issue Date
- Return Date

Library in Entity

- Library Id
- Library name
- Phone number
- Email address
- Library Address

Library Main Entity

- Library Id
- Library Main location

Library Branch Entity

- Library Id
- Library Branch location

Employee Entity

- Employee id
- Employee type
- F name
- L name
- Gender
- NIC
- ETF_no
- Time Duration
- Date of Birth
- Phone number
- Home address

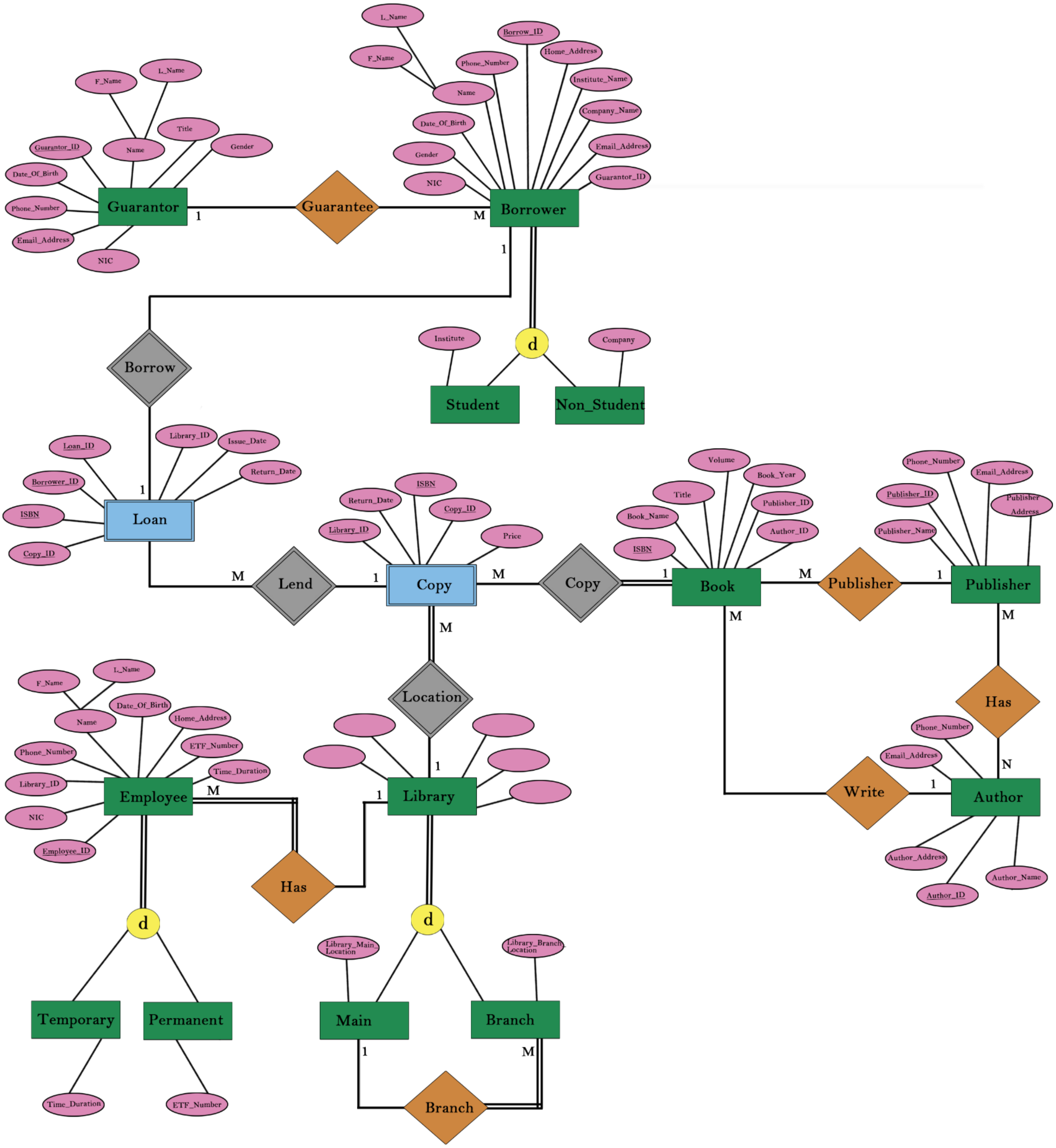
Permanent

- Employee id
- ETF number

Temporary

- Employee id
- Time duration

1.5. Enhanced Entity Relationship (EER) Diagram



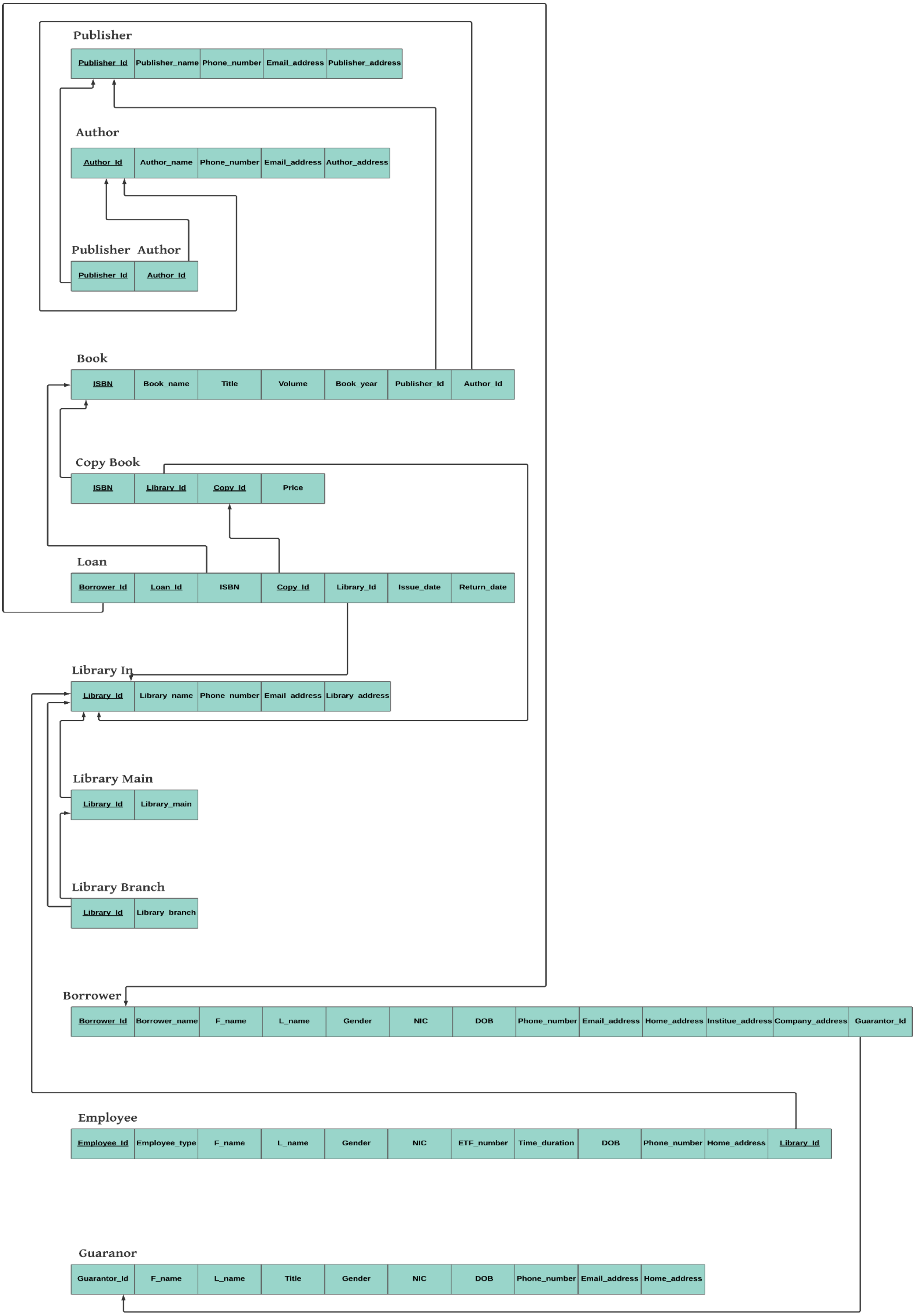
1.6. Assumptions

- In the EER diagram, **Borrower** is a **Student** or **Non-Student.** therefore, I group these 3 entities using disjoint constraint.
- **Library** is a **Main** or **Branch library** therefore, I group these 3 entities using disjoint constraint.
- **Employee** is a **Temporary** or **Permanent** therefore, I group these 3 entities using disjoint constraint.
- One book has many book copies in one library with unique copy number.
- Borrower can borrows many loans.
- One author writes many books.
- Each Employee member are allocated only one Library branch.
- Each borrower can borrow many loans from every library branch.
- Main library can branch many branches.
- Each book is belonged to only one category.
- Phone number is not considered as a multivalued attribute.

1.7. Relationships- Cardinality

- Publisher Publish Book (1:M)
- Author Write Book(1:M)
- Book Copy Copybook (1:M)
- Copy Lend Loan(1:M)
- Borrower Borrow Loan (M: N)
- Guarantor Guarantee Borrower (M: N)
- Copy Location Library (M: 1)
- Library-Main Branch Library Branch (1: M)
- Library Has Employee (1: M)

1.8. Relation Mapping



Publisher

Publisher_Id	Publisher_name	Phone_number	Email_address	Publisher_address

Author

Author_Id	Author_name	Phone_number	Email_address	Author_address

Publisher_Author

Publisher_Id	Author_Id

Book

ISBN	Book_name	Title	Volume	Book_year	Publisher_Id	Author_Id

Copy Book

ISBN	Library_Id	Copy_Id	Price

Loan

Borrower_Id	Loan_Id	ISBN	Copy_Id	Library_Id	Issue_date	Return_date

Library In

Library_Id	Library name	Phone number	Email address	Library address

Library Main

Library_Id	Library_main

Library Branch

Library_Id	Library branch

Borrower

Borrower_Id	Borrower_name	F_name	L_name	Gender	NIC	DOB	Phone_number	Email_address	Home_address	Institue_address	Company_address	Guarantor_Id

Employee

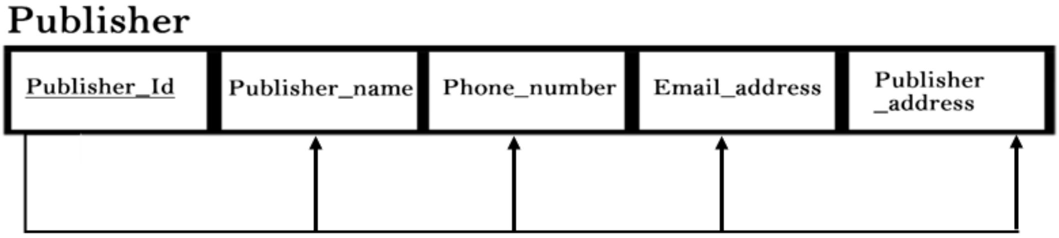
Employee_Id	Employee_type	F_name	L_name	Gender	NIC	ETF_number	Time_duration	DOB	Phone_number	Home_address	Library_Id

Guaranor

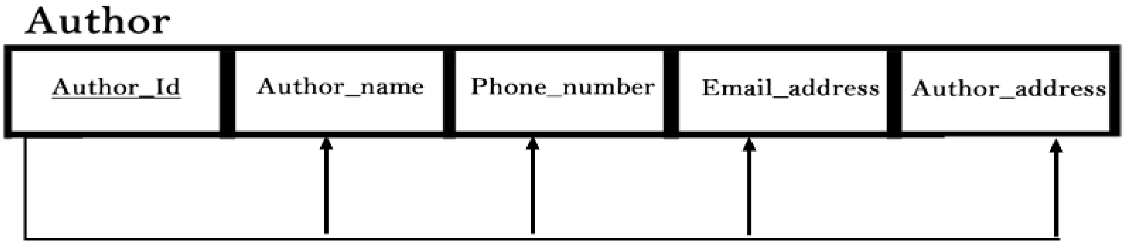
Guarantor_Id	F_name	L_name	Title	Gender	NIC	DOB	Phone_number	Email_address	Home_address

1.9. Data Normalization

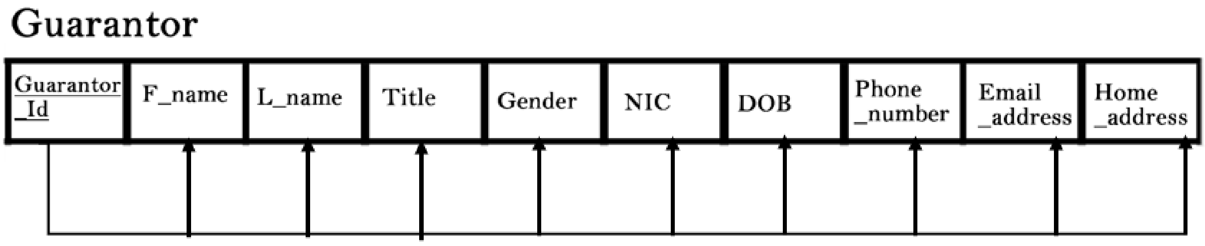
- ❖ This relation is already in 2nd normalize form. There are FD, PD, or no duplicates. Therefore, this relation is 3rd normalize form.



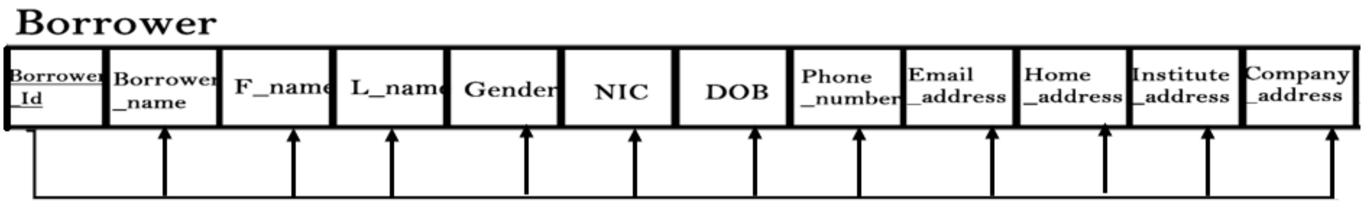
- ❖ This relation is already in 2nd normalize form. There are FD, PD, or no duplicates. Therefore, this relation is 3rd normalize form.



- ❖ This relation is already in 2nd normalize form. There are FD, PD, or no duplicates. Therefore, this relation is 3rd normalize form.



- This relation is already in 2nd normalize form. There are FD, PD, or no duplicates. Therefore, this relation is 3rd normalize form.



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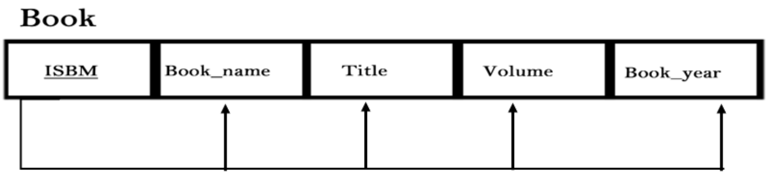

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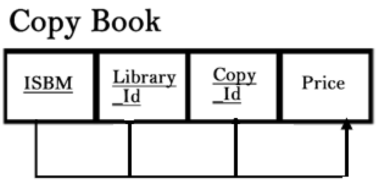

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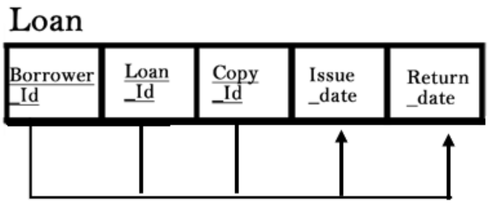
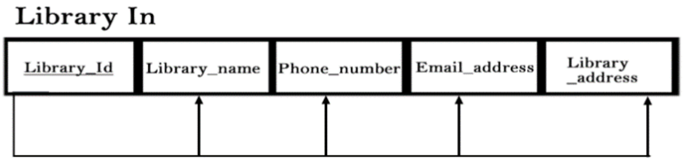
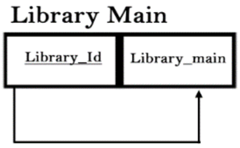


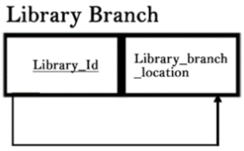
- ❖ This relation is already in 2nd normalize form. There are FD, PD, or no duplicates. Therefore, this relation is 3rd normalize form.



- ❖ This relation is already in 2nd normalize form. There are FD, PD, or no duplicates. Therefore, this relation is 3rd normalize form.



- ❖ This relation is already in 2nd normalize form. There are FD, PD, or no duplicates. Therefore, this relation is 3rd normalize form.



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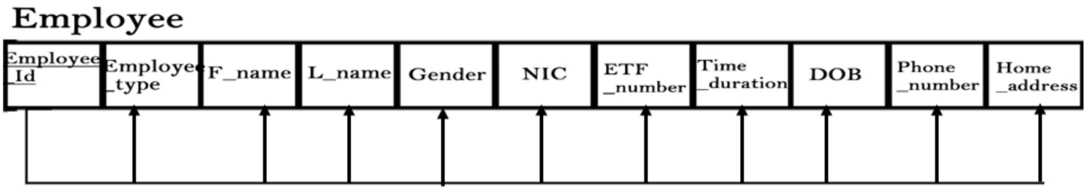


1.10. Data Dictionary

Publisher table

Column name	Data type	Field Size	Constraint
Publisher id	Varchar	5	Primary key
Publisher name	Varchar	25	Not null
Phone number	Varchar	15	Not null
Email address	Varchar	50	Not null
Publisher address	Varchar	100	Not null

Author table

Column name	Data type	Field Size	Constraint
Author id	Varchar	5	Primary key
Author name	Varchar	25	Not null
Phone number	Varchar	15	Not null
Email address	Varchar	50	Not null
Author address	Varchar	100	Not null

Publisher_ Author

Column name	Data type	Field Size	Constraint
Publisher id	Varchar	5	Foreign key, Unique
Author id	Varchar	5	Foreign key, Unique

Book table

Column name	Data type	Field Size	Constraint
ISBN	Varchar	17	Primary key
Book name	Varchar	25	Not null
Title	Varchar	25	Not null
Volume	Varchar	10	Not null
Book year	Varchar	25	Not null
Publisher id	Varchar	5	Foreign key
Author ID	Varchar	5	Foreign key

Library In Table

Column name	Data type	Field Size	Constraint
Library Id	Varchar	5	Primary key
Library name	Varchar	25	Not null
Phone number	Varchar	15	Not null
Email address	Varchar	50	Not null
Library Address	Varchar	100	Not null

Library main

Column name	Data type	Field Size	Constraint
Library Id	Varchar	5	Primary key
Library Main	Varchar	25	Foreign key

Library branch Table

Column name	Data type	Field Size	Constraint
Library Id	Varchar	5	Primary key
Library Branch location	Varchar	25	Foreign key

Guarantor Table

Column name	Data type	Field Size	Constraint
Guarantor ID	Varchar	10	Primary key
F Name	Varchar	25	Not null
L Name	Varchar	25	Not null
Title	Varchar	20	Not null
Gender	Varchar	10	Check, Not Null
NIC	Varchar	20	Not null
DOB	Date		Not null
Phone number	Varchar	15	Not null
Email address	Varchar	50	Not null
Home address	Varchar	100	Not null

Borrower Table

Column name	Data type	Field Size	Constraint
Borrower Id	Varchar	10	Primary key
Borrower Type	Varchar	20	Check, Not Null
F Name	Varchar	25	Not null
L Name	Varchar	25	Not null
Gender	Varchar	10	Check, Not Null
NIC	Varchar	20	Not null
DOB	Date		Not null
Phone number	Varchar	15	Not null
Email address	Varchar	50	Not null
Home address	Varchar	100	Not null
Institute name	Varchar	20	Not null
Company name	Varchar	20	Not null
Guarantor ID	Varchar	10	Foreign key

Copy Book Table

Column name	Data type	Field Size	Constraint
ISBN	Varchar	17	Primary key
Library Id	Varchar	5	Primary key
Copy Id	Varchar	10	Primary key
Price	Varchar	20	Not null

Loan Table

Column name	Data type	Field Size	Constraint
Borrower Id	Varchar	10	Primary key
Loan Id	Varchar	10	Primary key
ISBN	Varchar	17	Foreign key
Copy Id	Varchar	10	Primary key
Library Id	Varchar	5	Foreign key
Issue Date	Date		Not null
Return Date	Date		Not null

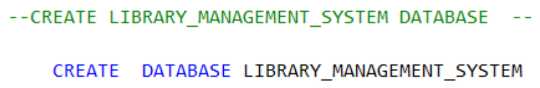
Employee table

Column name	Data type	Field Size	Constraint
Employee id	Varchar	10	Primary key
Employee type	Varchar	20	Check
F name	Varchar	25	Not null
L name	Varchar	25	Not null
Gender	Varchar	10	Check
NIC	Varchar	20	Not null
ETF_no	Varchar	20	Not null
Time Duration	Varchar	20	Not null
Date of Birth	Date		Not null
Phone number	Varchar	15	Not null
Home address	Varchar	100	Not null
Library id	Varchar	5	Foreign key

SECTION 02

2.1. Tables and Constrains

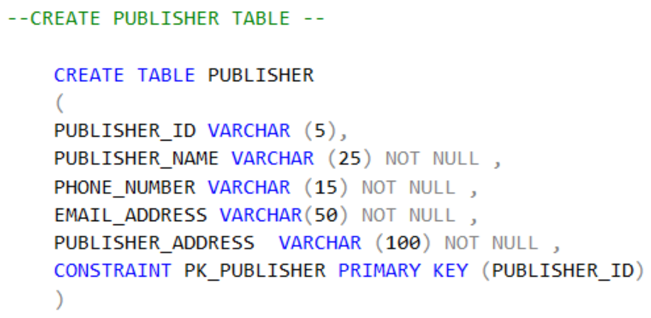
There are 12 tables in this Database.



```
--CREATE LIBRARY_MANAGEMENT_SYSTEM DATABASE  --

    CREATE  DATABASE LIBRARY_MANAGEMENT_SYSTEM
```

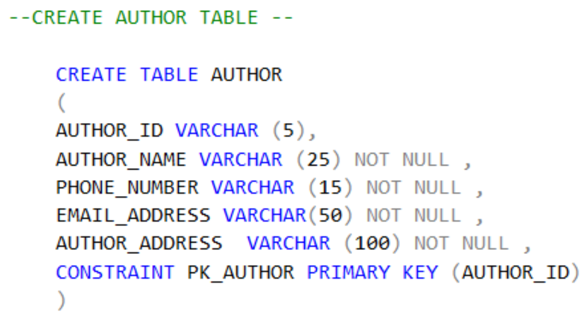
Publisher Table



```
--CREATE PUBLISHER TABLE --

    CREATE TABLE PUBLISHER
    (
    PUBLISHER_ID VARCHAR (5),
    PUBLISHER_NAME VARCHAR (25) NOT NULL ,
    PHONE_NUMBER VARCHAR (15) NOT NULL ,
    EMAIL_ADDRESS VARCHAR(50) NOT NULL ,
    PUBLISHER_ADDRESS  VARCHAR (100) NOT NULL ,
    CONSTRAINT PK_PUBLISHER PRIMARY KEY (PUBLISHER_ID)
    )
```

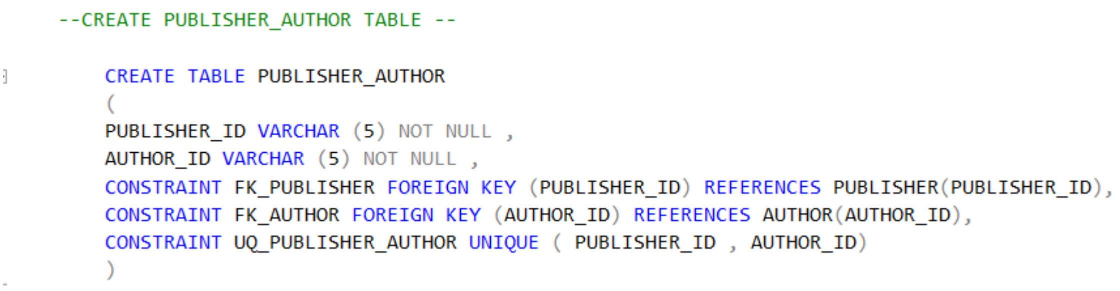
Author Table



```
--CREATE AUTHOR TABLE --

    CREATE TABLE AUTHOR
    (
    AUTHOR_ID VARCHAR (5),
    AUTHOR_NAME VARCHAR (25) NOT NULL ,
    PHONE_NUMBER VARCHAR (15) NOT NULL ,
    EMAIL_ADDRESS VARCHAR(50) NOT NULL ,
    AUTHOR_ADDRESS  VARCHAR (100) NOT NULL ,
    CONSTRAINT PK_AUTHOR PRIMARY KEY (AUTHOR_ID)
    )
```

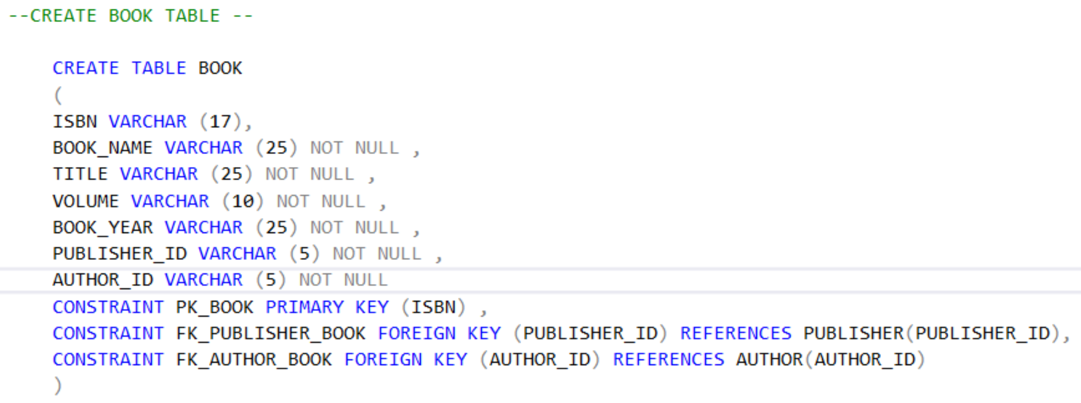
Publisher Author Table



```
--CREATE PUBLISHER_AUTHOR TABLE --

    CREATE TABLE PUBLISHER_AUTHOR
    (
    PUBLISHER_ID VARCHAR (5) NOT NULL ,
    AUTHOR_ID VARCHAR (5) NOT NULL ,
    CONSTRAINT FK_PUBLISHER FOREIGN KEY (PUBLISHER_ID) REFERENCES PUBLISHER(PUBLISHER_ID),
    CONSTRAINT FK_AUTHOR FOREIGN KEY (AUTHOR_ID) REFERENCES AUTHOR(AUTHOR_ID),
    CONSTRAINT UQ_PUBLISHER_AUTHOR UNIQUE ( PUBLISHER_ID , AUTHOR_ID)
    )
```

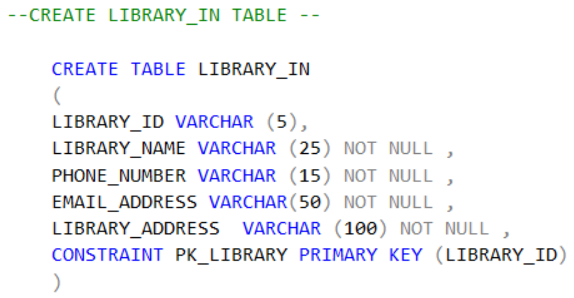
Book Table



```
--CREATE BOOK TABLE --

    CREATE TABLE BOOK
    (
    ISBN VARCHAR (17),
    BOOK_NAME VARCHAR (25) NOT NULL ,
    TITLE VARCHAR (25) NOT NULL ,
    VOLUME VARCHAR (10) NOT NULL ,
    BOOK_YEAR VARCHAR (25) NOT NULL ,
    PUBLISHER_ID VARCHAR (5) NOT NULL ,
    AUTHOR_ID VARCHAR (5) NOT NULL
    CONSTRAINT PK_BOOK PRIMARY KEY (ISBN) ,
    CONSTRAINT FK_PUBLISHER_BOOK FOREIGN KEY (PUBLISHER_ID) REFERENCES PUBLISHER(PUBLISHER_ID),
    CONSTRAINT FK_AUTHOR_BOOK FOREIGN KEY (AUTHOR_ID) REFERENCES AUTHOR(AUTHOR_ID)
    )
```

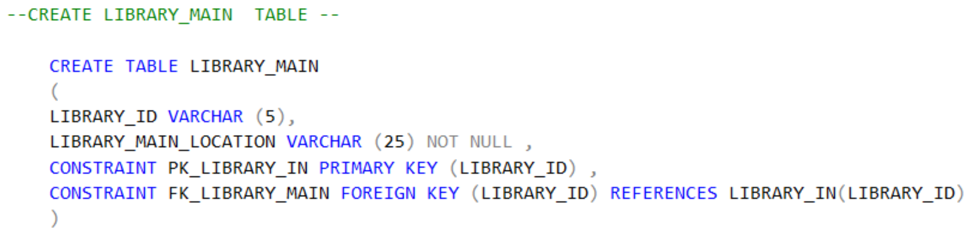
Library In Table



```
--CREATE LIBRARY_IN TABLE --

    CREATE TABLE LIBRARY_IN
    (
    LIBRARY_ID VARCHAR (5),
    LIBRARY_NAME VARCHAR (25) NOT NULL ,
    PHONE_NUMBER VARCHAR (15) NOT NULL ,
    EMAIL_ADDRESS VARCHAR(50) NOT NULL ,
    LIBRARY_ADDRESS  VARCHAR (100) NOT NULL ,
    CONSTRAINT PK_LIBRARY PRIMARY KEY (LIBRARY_ID)
    )
```

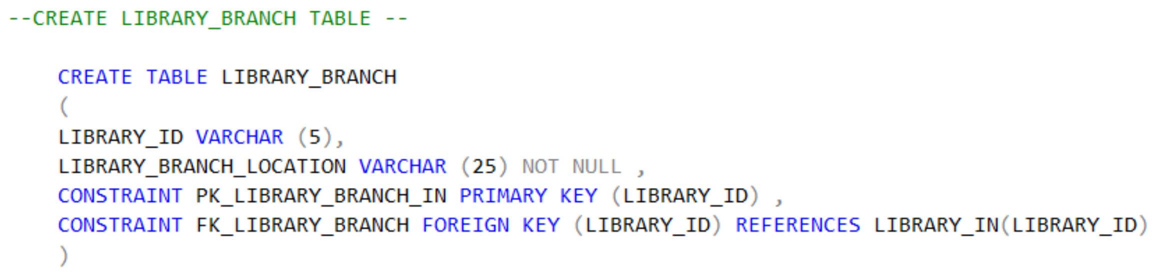
Library Main Table



```
--CREATE LIBRARY_MAIN  TABLE --

    CREATE TABLE LIBRARY_MAIN
    (
    LIBRARY_ID VARCHAR (5),
    LIBRARY_MAIN_LOCATION VARCHAR (25) NOT NULL ,
    CONSTRAINT PK_LIBRARY_IN PRIMARY KEY (LIBRARY_ID) ,
    CONSTRAINT FK_LIBRARY_MAIN FOREIGN KEY (LIBRARY_ID) REFERENCES LIBRARY_IN(LIBRARY_ID)
    )
```

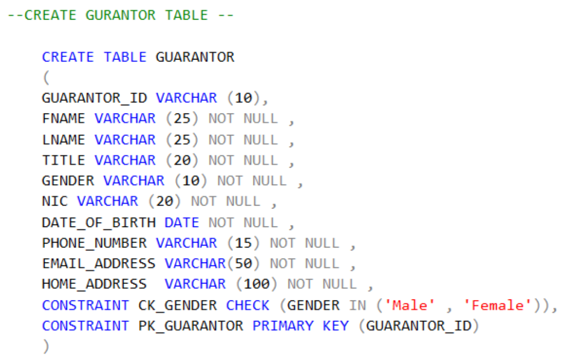
LibrarybranchTable



```
--CREATE LIBRARY_BRANCH TABLE --

    CREATE TABLE LIBRARY_BRANCH
    (
    LIBRARY_ID VARCHAR (5),
    LIBRARY_BRANCH_LOCATION VARCHAR (25) NOT NULL ,
    CONSTRAINT PK_LIBRARY_BRANCH_IN PRIMARY KEY (LIBRARY_ID) ,
    CONSTRAINT FK_LIBRARY_BRANCH FOREIGN KEY (LIBRARY_ID) REFERENCES LIBRARY_IN(LIBRARY_ID)
    )
```

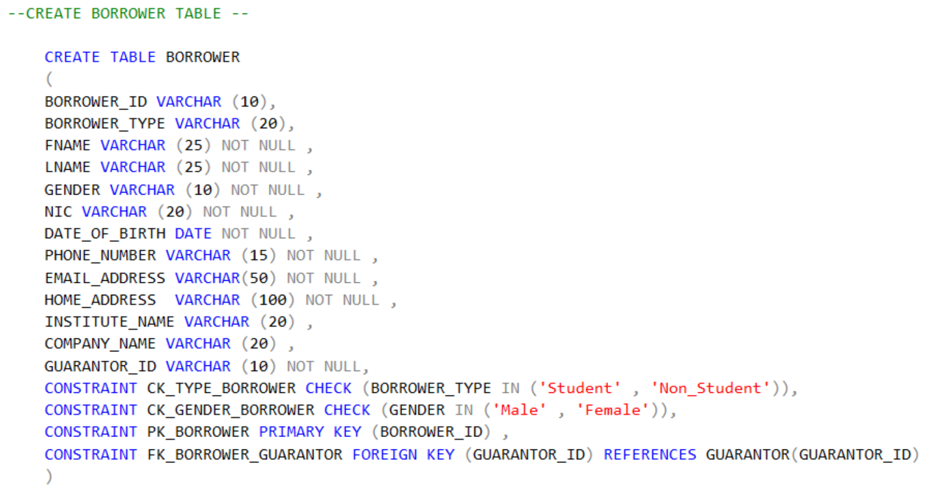
Gurantor Table



```
--CREATE GURANTOR TABLE --

    CREATE TABLE GUARANTOR
    (
    GUARANTOR_ID VARCHAR (10),
    FNAME VARCHAR (25) NOT NULL ,
    LNAME VARCHAR (25) NOT NULL ,
    TITLE VARCHAR (20) NOT NULL ,
    GENDER VARCHAR (10) NOT NULL ,
    NIC VARCHAR (20) NOT NULL ,
    DATE_OF_BIRTH DATE NOT NULL ,
    PHONE_NUMBER VARCHAR (15) NOT NULL ,
    EMAIL_ADDRESS VARCHAR(50) NOT NULL ,
    HOME_ADDRESS  VARCHAR (100) NOT NULL ,
    CONSTRAINT CK_GENDER CHECK (GENDER IN ('Male' , 'Female')),
    CONSTRAINT PK_GUARANTOR PRIMARY KEY (GUARANTOR_ID)
    )
```

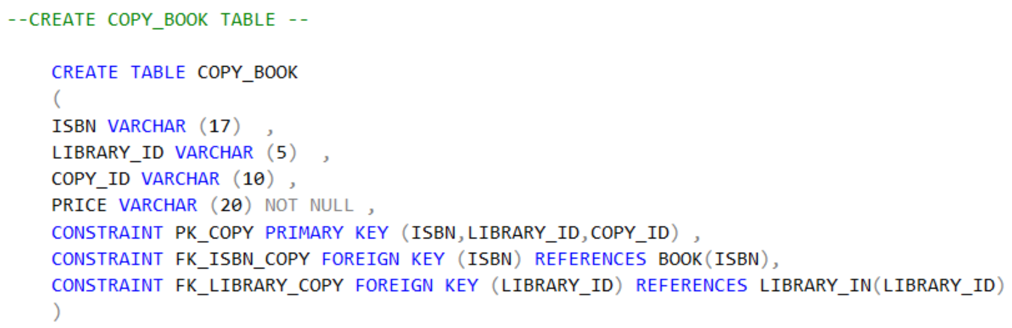
Borrower Table



```
--CREATE BORROWER TABLE --

    CREATE TABLE BORROWER
    (
    BORROWER_ID VARCHAR (10),
    BORROWER_TYPE VARCHAR (20),
    FNAME VARCHAR (25) NOT NULL ,
    LNAME VARCHAR (25) NOT NULL ,
    GENDER VARCHAR (10) NOT NULL ,
    NIC VARCHAR (20) NOT NULL ,
    DATE_OF_BIRTH DATE NOT NULL ,
    PHONE_NUMBER VARCHAR (15) NOT NULL ,
    EMAIL_ADDRESS VARCHAR(50) NOT NULL ,
    HOME_ADDRESS  VARCHAR (100) NOT NULL ,
    INSTITUTE_NAME VARCHAR (20) ,
    COMPANY_NAME VARCHAR (20) ,
    GUARANTOR_ID VARCHAR (10) NOT NULL,
    CONSTRAINT CK_TYPE_BORROWER CHECK (BORROWER_TYPE IN ('Student' , 'Non_Student')),
    CONSTRAINT CK_GENDER_BORROWER CHECK (GENDER IN ('Male' , 'Female')),
    CONSTRAINT PK_BORROWER PRIMARY KEY (BORROWER_ID) ,
    CONSTRAINT FK_BORROWER_GUARANTOR FOREIGN KEY (GUARANTOR_ID) REFERENCES GUARANTOR(GUARANTOR_ID)
    )
```

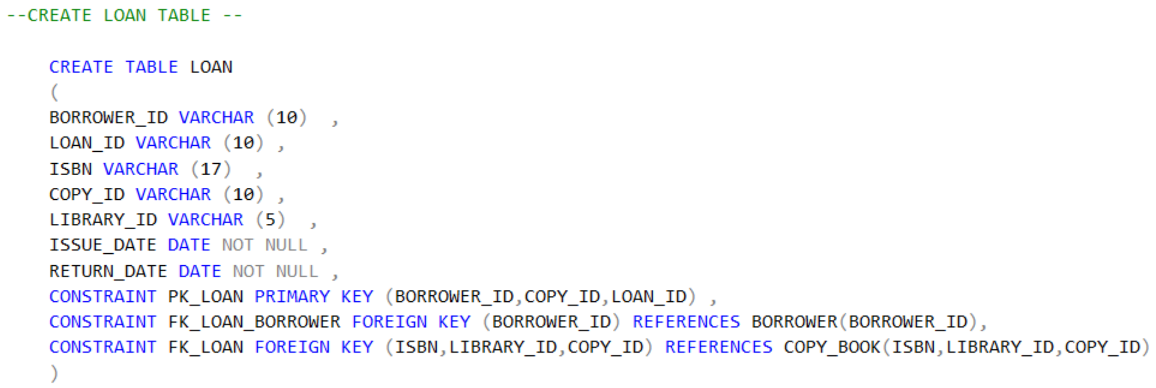
Copy Book Table



```
--CREATE COPY_BOOK TABLE --

    CREATE TABLE COPY_BOOK
    (
    ISBN VARCHAR (17)  ,
    LIBRARY_ID VARCHAR (5)  ,
    COPY_ID VARCHAR (10) ,
    PRICE VARCHAR (20) NOT NULL ,
    CONSTRAINT PK_COPY PRIMARY KEY (ISBN,LIBRARY_ID,COPY_ID) ,
    CONSTRAINT FK_ISBN_COPY FOREIGN KEY (ISBN) REFERENCES BOOK(ISBN),
    CONSTRAINT FK_LIBRARY_COPY FOREIGN KEY (LIBRARY_ID) REFERENCES LIBRARY_IN(LIBRARY_ID)
    )
```

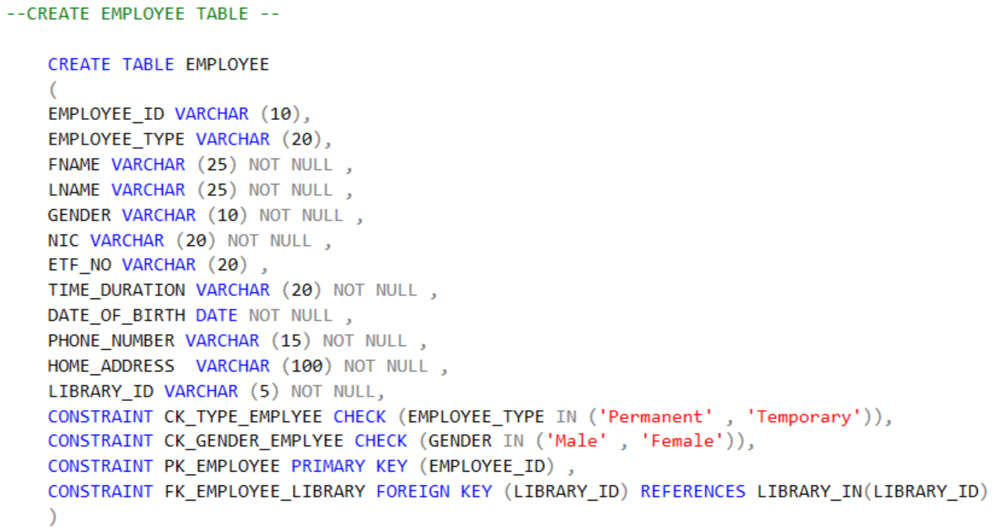
Loan Table



```
--CREATE LOAN TABLE --

    CREATE TABLE LOAN
    (
    BORROWER_ID VARCHAR (10)  ,
    LOAN_ID VARCHAR (10) ,
    ISBN VARCHAR (17)  ,
    COPY_ID VARCHAR (10) ,
    LIBRARY_ID VARCHAR (5)  ,
    ISSUE_DATE DATE NOT NULL ,
    RETURN_DATE DATE NOT NULL ,
    CONSTRAINT PK_LOAN PRIMARY KEY (BORROWER_ID,COPY_ID,LOAN_ID) ,
    CONSTRAINT FK_LOAN_BORROWER FOREIGN KEY (BORROWER_ID) REFERENCES BORROWER(BORROWER_ID),
    CONSTRAINT FK_LOAN FOREIGN KEY (ISBN,LIBRARY_ID,COPY_ID) REFERENCES COPY_BOOK(ISBN,LIBRARY_ID,COPY_ID)
    )
```

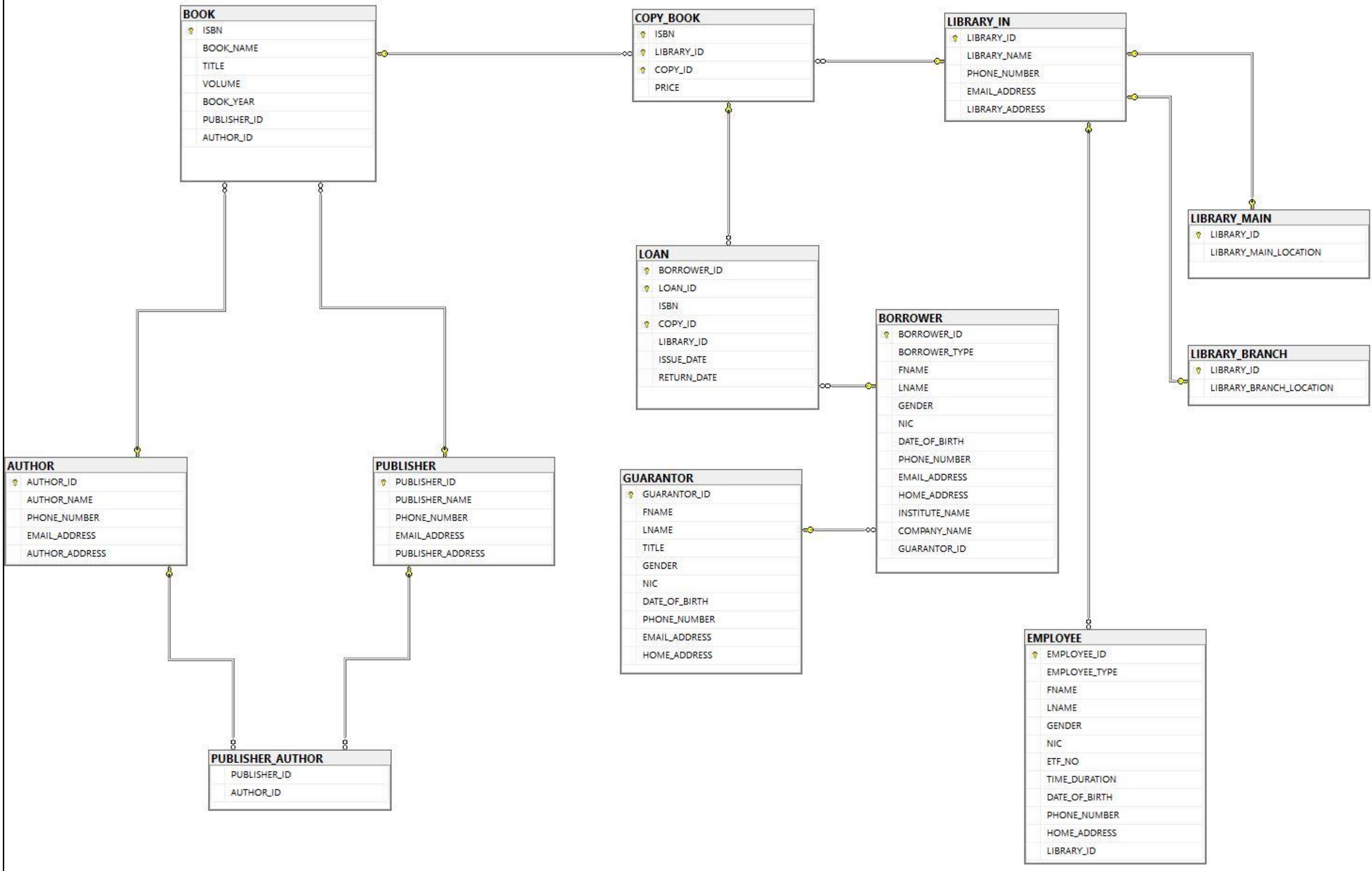
Employee Table



```
--CREATE EMPLOYEE TABLE --

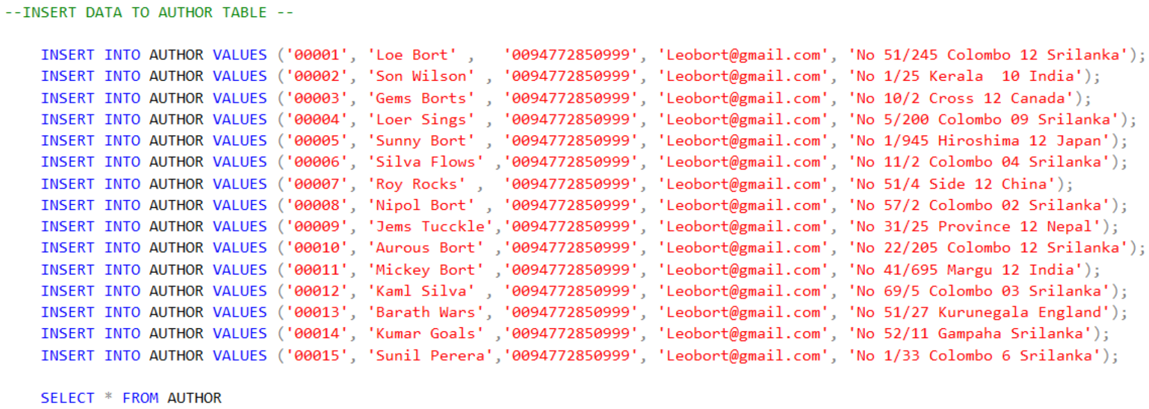
    CREATE TABLE EMPLOYEE
    (
    EMPLOYEE_ID VARCHAR (10),
    EMPLOYEE_TYPE VARCHAR (20),
    FNAME VARCHAR (25) NOT NULL ,
    LNAME VARCHAR (25) NOT NULL ,
    GENDER VARCHAR (10) NOT NULL ,
    NIC VARCHAR (20) NOT NULL ,
    ETF_NO VARCHAR (20) ,
    TIME_DURATION VARCHAR (20) NOT NULL ,
    DATE_OF_BIRTH DATE NOT NULL ,
    PHONE_NUMBER VARCHAR (15) NOT NULL ,
    HOME_ADDRESS  VARCHAR (100) NOT NULL ,
    LIBRARY_ID VARCHAR (5) NOT NULL,
    CONSTRAINT CK_TYPE_EMPLYEE CHECK (EMPLOYEE_TYPE IN ('Permanent' , 'Temporary')),
    CONSTRAINT CK_GENDER_EMPLYEE CHECK (GENDER IN ('Male' , 'Female')),
    CONSTRAINT PK_EMPLOYEE PRIMARY KEY (EMPLOYEE_ID) ,
    CONSTRAINT FK_EMPLOYEE_LIBRARY FOREIGN KEY (LIBRARY_ID) REFERENCES LIBRARY_IN(LIBRARY_ID)
    )
```

2.2 Database Diagram



2.3 Table Sample Records

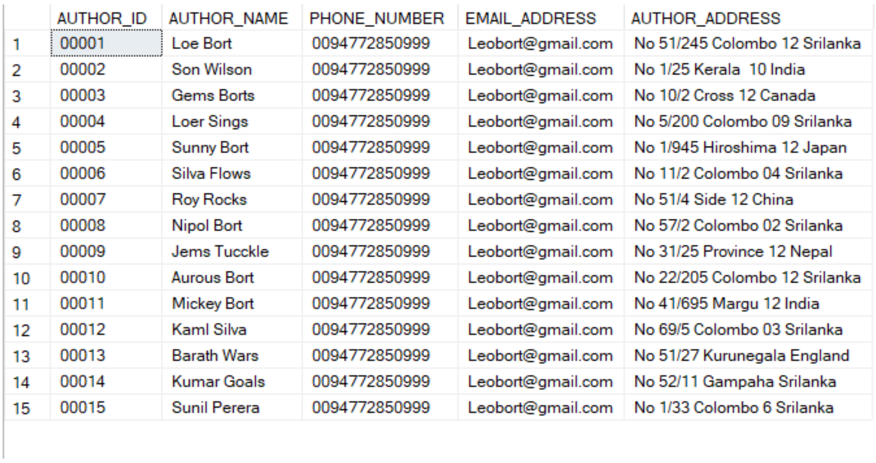
Author Table



```
--INSERT DATA TO AUTHOR TABLE --

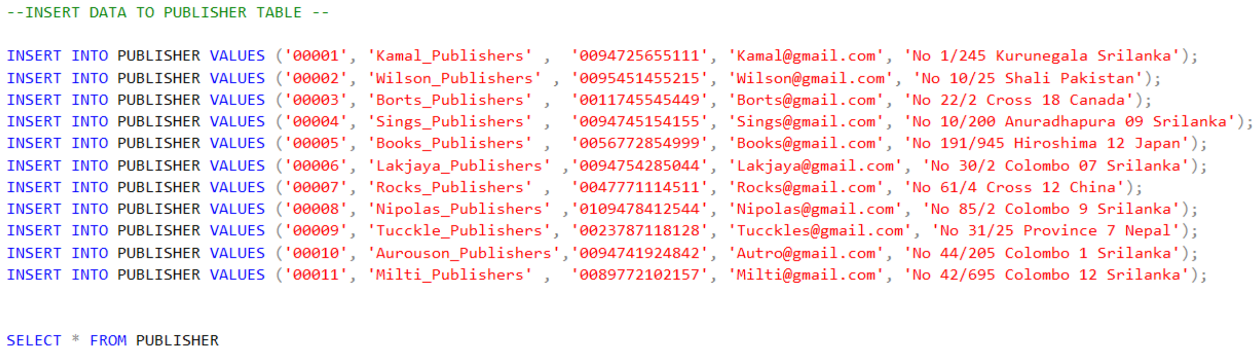
    INSERT INTO AUTHOR VALUES ('00001', 'Loe Bort' ,   '0094772850999', 'Leobort@gmail.com', 'No 51/245 Colombo 12 Srilanka');
    INSERT INTO AUTHOR VALUES ('00002', 'Son Wilson' , '0094772850999', 'Leobort@gmail.com', 'No 1/25 Kerala  10 India');
    INSERT INTO AUTHOR VALUES ('00003', 'Gems Borts' , '0094772850999', 'Leobort@gmail.com', 'No 10/2 Cross 12 Canada');
    INSERT INTO AUTHOR VALUES ('00004', 'Loer Sings' , '0094772850999', 'Leobort@gmail.com', 'No 5/200 Colombo 09 Srilanka');
    INSERT INTO AUTHOR VALUES ('00005', 'Sunny Bort' , '0094772850999', 'Leobort@gmail.com', 'No 1/945 Hiroshima 12 Japan');
    INSERT INTO AUTHOR VALUES ('00006', 'Silva Flows' ,'0094772850999', 'Leobort@gmail.com', 'No 11/2 Colombo 04 Srilanka');
    INSERT INTO AUTHOR VALUES ('00007', 'Roy Rocks' ,  '0094772850999', 'Leobort@gmail.com', 'No 51/4 Side 12 China');
    INSERT INTO AUTHOR VALUES ('00008', 'Nipol Bort' , '0094772850999', 'Leobort@gmail.com', 'No 57/2 Colombo 02 Srilanka');
    INSERT INTO AUTHOR VALUES ('00009', 'Jems Tucckle','0094772850999', 'Leobort@gmail.com', 'No 31/25 Province 12 Nepal');
    INSERT INTO AUTHOR VALUES ('00010', 'Aurous Bort' ,'0094772850999', 'Leobort@gmail.com', 'No 22/205 Colombo 12 Srilanka');
    INSERT INTO AUTHOR VALUES ('00011', 'Mickey Bort' ,'0094772850999', 'Leobort@gmail.com', 'No 41/695 Margu 12 India');
    INSERT INTO AUTHOR VALUES ('00012', 'Kaml Silva' , '0094772850999', 'Leobort@gmail.com', 'No 69/5 Colombo 03 Srilanka');
    INSERT INTO AUTHOR VALUES ('00013', 'Barath Wars', '0094772850999', 'Leobort@gmail.com', 'No 51/27 Kurunegala England');
    INSERT INTO AUTHOR VALUES ('00014', 'Kumar Goals' ,'0094772850999', 'Leobort@gmail.com', 'No 52/11 Gampaha Srilanka');
    INSERT INTO AUTHOR VALUES ('00015', 'Sunil Perera','0094772850999', 'Leobort@gmail.com', 'No 1/33 Colombo 6 Srilanka');

    SELECT * FROM AUTHOR
```



	AUTHOR_ID	AUTHOR_NAME	PHONE_NUMBER	EMAIL_ADDRESS	AUTHOR_ADDRESS
1	00001	Loe Bort	0094772850999	Leobort@gmail.com	No 51/245 Colombo 12 Srilanka
2	00002	Son Wilson	0094772850999	Leobort@gmail.com	No 1/25 Kerala 10 India
3	00003	Gems Borts	0094772850999	Leobort@gmail.com	No 10/2 Cross 12 Canada
4	00004	Loer Sings	0094772850999	Leobort@gmail.com	No 5/200 Colombo 09 Srilanka
5	00005	Sunny Bort	0094772850999	Leobort@gmail.com	No 1/945 Hiroshima 12 Japan
6	00006	Silva Flows	0094772850999	Leobort@gmail.com	No 11/2 Colombo 04 Srilanka
7	00007	Roy Rocks	0094772850999	Leobort@gmail.com	No 51/4 Side 12 China
8	00008	Nipol Bort	0094772850999	Leobort@gmail.com	No 57/2 Colombo 02 Srilanka
9	00009	Jems Tucckle	0094772850999	Leobort@gmail.com	No 31/25 Province 12 Nepal
10	00010	Aurous Bort	0094772850999	Leobort@gmail.com	No 22/205 Colombo 12 Srilanka
11	00011	Mickey Bort	0094772850999	Leobort@gmail.com	No 41/695 Margu 12 India
12	00012	Kaml Silva	0094772850999	Leobort@gmail.com	No 69/5 Colombo 03 Srilanka
13	00013	Barath Wars	0094772850999	Leobort@gmail.com	No 51/27 Kurunegala England
14	00014	Kumar Goals	0094772850999	Leobort@gmail.com	No 52/11 Gampaha Srilanka
15	00015	Sunil Perera	0094772850999	Leobort@gmail.com	No 1/33 Colombo 6 Srilanka

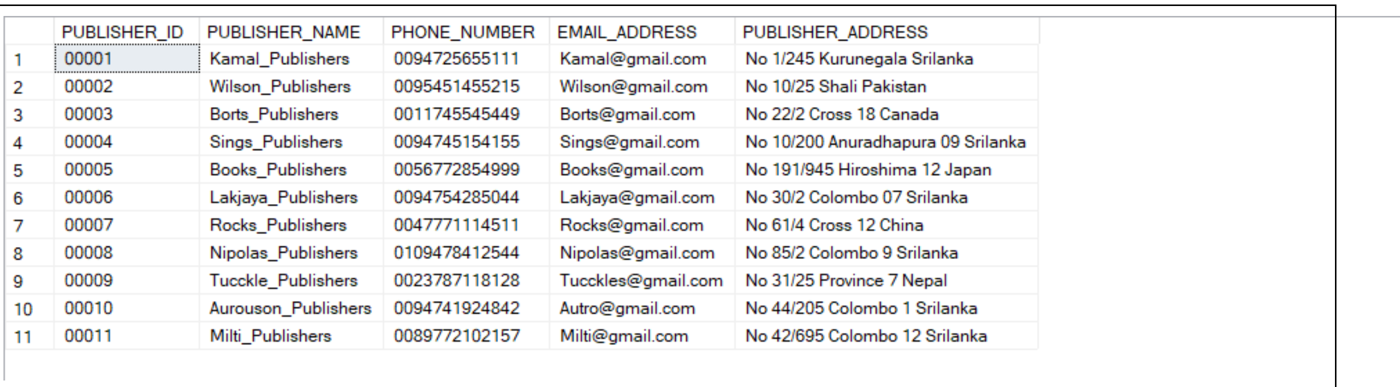
Publisher Table



```
--INSERT DATA TO PUBLISHER TABLE --

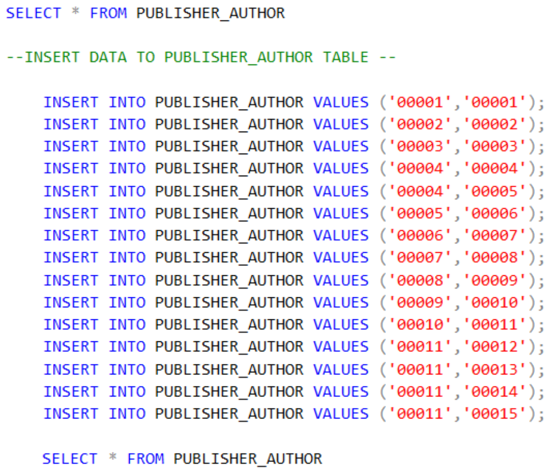
INSERT INTO PUBLISHER VALUES ('00001', 'Kamal_Publishers' ,  '0094725655111', 'Kamal@gmail.com', 'No 1/245 Kurunegala Srilanka');
INSERT INTO PUBLISHER VALUES ('00002', 'Wilson_Publishers' , '0095451455215', 'Wilson@gmail.com', 'No 10/25 Shali Pakistan');
INSERT INTO PUBLISHER VALUES ('00003', 'Borts_Publishers' ,  '0011745545449', 'Borts@gmail.com', 'No 22/2 Cross 18 Canada');
INSERT INTO PUBLISHER VALUES ('00004', 'Sings_Publishers' ,  '0094745154155', 'Sings@gmail.com', 'No 10/200 Anuradhapura 09 Srilanka');
INSERT INTO PUBLISHER VALUES ('00005', 'Books_Publishers' ,  '0056772854999', 'Books@gmail.com', 'No 191/945 Hiroshima 12 Japan');
INSERT INTO PUBLISHER VALUES ('00006', 'Lakjaya_Publishers' ,'0094754285044', 'Lakjaya@gmail.com', 'No 30/2 Colombo 07 Srilanka');
INSERT INTO PUBLISHER VALUES ('00007', 'Rocks_Publishers' ,  '0047771114511', 'Rocks@gmail.com', 'No 61/4 Cross 12 China');
INSERT INTO PUBLISHER VALUES ('00008', 'Nipolas_Publishers' ,'0109478412544', 'Nipolas@gmail.com', 'No 85/2 Colombo 9 Srilanka');
INSERT INTO PUBLISHER VALUES ('00009', 'Tucckle_Publishers', '0023787118128', 'Tuccles@gmail.com', 'No 31/25 Province 7 Nepal');
INSERT INTO PUBLISHER VALUES ('00010', 'Aurouson_Publishers','0094741924842', 'Autro@gmail.com', 'No 44/205 Colombo 1 Srilanka');
INSERT INTO PUBLISHER VALUES ('00011', 'Milti_Publishers' ,  '0089772102157', 'Milti@gmail.com', 'No 42/695 Colombo 12 Srilanka');


SELECT * FROM PUBLISHER
```



	PUBLISHER_ID	PUBLISHER_NAME	PHONE_NUMBER	EMAIL_ADDRESS	PUBLISHER_ADDRESS
1	00001	Kamal_Publishers	0094725655111	Kamal@gmail.com	No 1/245 Kurunegala Srilanka
2	00002	Wilson_Publishers	0095451455215	Wilson@gmail.com	No 10/25 Shali Pakistan
3	00003	Borts_Publishers	0011745545449	Borts@gmail.com	No 22/2 Cross 18 Canada
4	00004	Sings_Publishers	0094745154155	Sings@gmail.com	No 10/200 Anuradhapura 09 Srilanka
5	00005	Books_Publishers	0056772854999	Books@gmail.com	No 191/945 Hiroshima 12 Japan
6	00006	Lakjaya_Publishers	0094754285044	Lakjaya@gmail.com	No 30/2 Colombo 07 Srilanka
7	00007	Rocks_Publishers	0047771114511	Rocks@gmail.com	No 61/4 Cross 12 China
8	00008	Nipolas_Publishers	0109478412544	Nipolas@gmail.com	No 85/2 Colombo 9 Srilanka
9	00009	Tucckle_Publishers	0023787118128	Tucckles@gmail.com	No 31/25 Province 7 Nepal
10	00010	Aurouson_Publishers	0094741924842	Autro@gmail.com	No 44/205 Colombo 1 Srilanka
11	00011	Milti_Publishers	0089772102157	Milti@gmail.com	No 42/695 Colombo 12 Srilanka

Publisher Author Table



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SELECT * FROM PUBLISHER_AUTHOR

--INSERT DATA TO PUBLISHER_AUTHOR TABLE --

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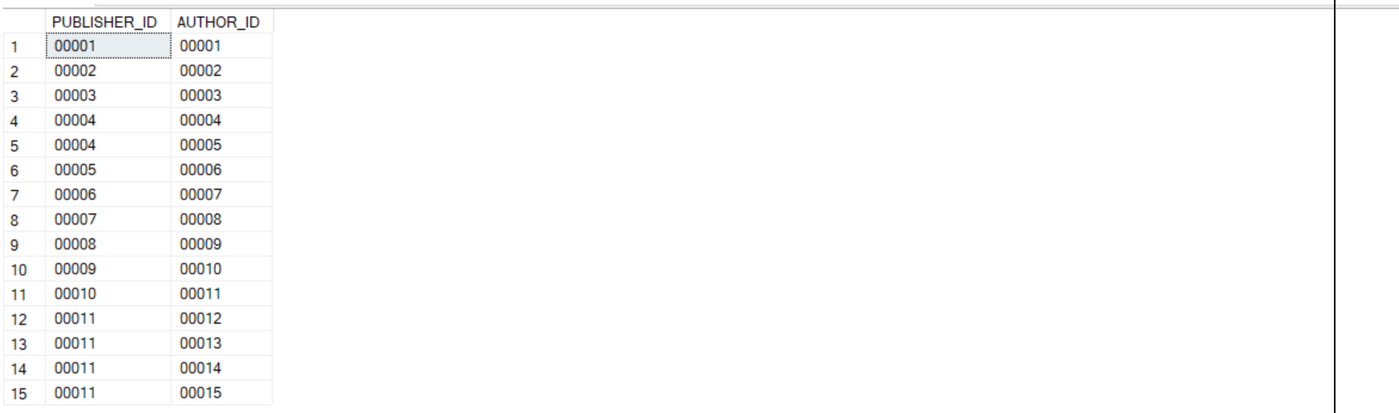
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00002','00002');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00003','00003');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00004','00004');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00004','00005');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00005','00006');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00006','00007');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00007','00008');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00008','00009');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00009','00010');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00010','00011');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00011','00012');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00011','00013');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00011','00014');
    INSERT INTO PUBLISHER_AUTHOR VALUES ('00011','00015');

    SELECT * FROM PUBLISHER_AUTHOR
```



	PUBLISHER_ID	AUTHOR_ID
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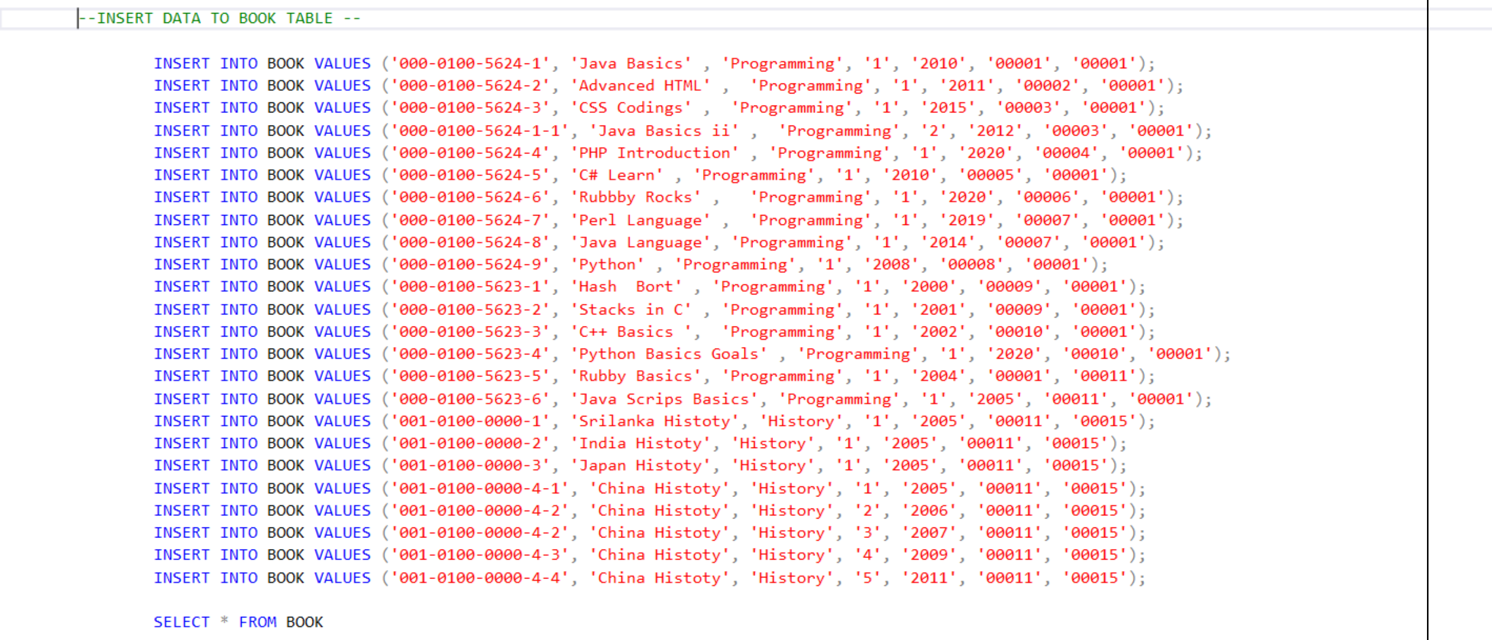
3	00003	00003
4	00004	00004
5	00004	00005
6	00005	00006
7	00006	00007
8	00007	00008
9	00008	00009
10	00009	00010
11	00010	00011
12	00011	00012
13	00011	00013
14	00011	00014
15	00011	00015

Book Table



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--INSERT DATA TO BOOK TABLE --

        INSERT INTO BOOK VALUES ('000-0100-5624-1', 'Java Basics' , 'Programming', '1', '2010', '00001', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-2', 'Advanced HTML' ,  'Programming', '1', '2011', '00002', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-3', 'CSS Codings' ,  'Programming', '1', '2015', '00003', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-1-1', 'Java Basics ii' ,  'Programming', '2', '2012', '00003', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-4', 'PHP Introduction' , 'Programming', '1', '2020', '00004', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-5', 'C# Learn' , 'Programming', '1', '2010', '00005', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-6', 'Rubbby Rocks' ,   'Programming', '1', '2020', '00006', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-7', 'Perl Language' ,  'Programming', '1', '2019', '00007', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-8', 'Java Language', 'Programming', '1', '2014', '00007', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5624-9', 'Python' , 'Programming', '1', '2008', '00008', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5623-1', 'Hash  Bort' , 'Programming', '1', '2000', '00009', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5623-2', 'Stacks in C' , 'Programming', '1', '2001', '00009', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5623-3', 'C++ Basics ',  'Programming', '1', '2002', '00010', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5623-4', 'Python Basics Goals' , 'Programming', '1', '2020', '00010', '00001');
        INSERT INTO BOOK VALUES ('000-0100-5623-5', 'Rubby Basics', 'Programming', '1', '2004', '00001', '00011');
        INSERT INTO BOOK VALUES ('000-0100-5623-6', 'Java Scrips Basics', 'Programming', '1', '2005', '00011', '00001');
        INSERT INTO BOOK VALUES ('001-0100-0000-1', 'Srilanka Histoty', 'History', '1', '2005', '00011', '00015');
        INSERT INTO BOOK VALUES ('001-0100-0000-2', 'India Histoty', 'History', '1', '2005', '00011', '00015');
        INSERT INTO BOOK VALUES ('001-0100-0000-3', 'Japan Histoty', 'History', '1', '2005', '00011', '00015');
        INSERT INTO BOOK VALUES ('001-0100-0000-4-1', 'China Histoty', 'History', '1', '2005', '00011', '00015');
        INSERT INTO BOOK VALUES ('001-0100-0000-4-2', 'China Histoty', 'History', '2', '2006', '00011', '00015');
        INSERT INTO BOOK VALUES ('001-0100-0000-4-2', 'China Histoty', 'History', '3', '2007', '00011', '00015');
        INSERT INTO BOOK VALUES ('001-0100-0000-4-3', 'China Histoty', 'History', '4', '2009', '00011', '00015');
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        SELECT * FROM BOOK
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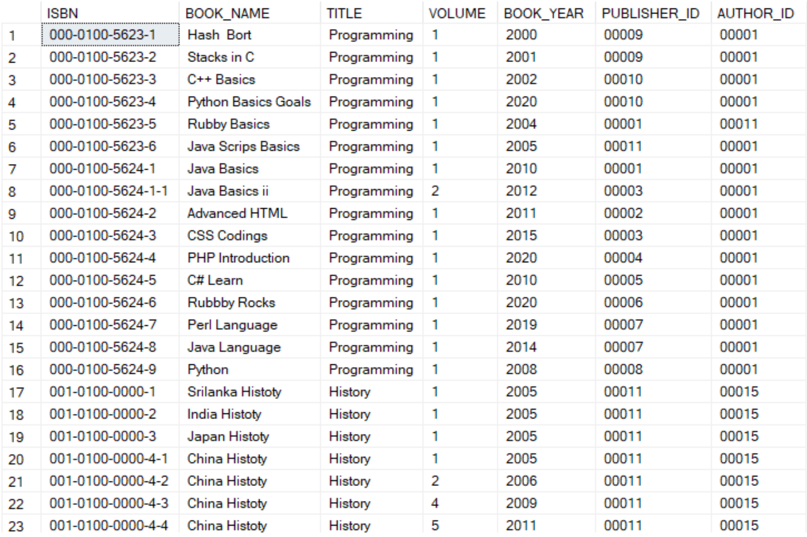
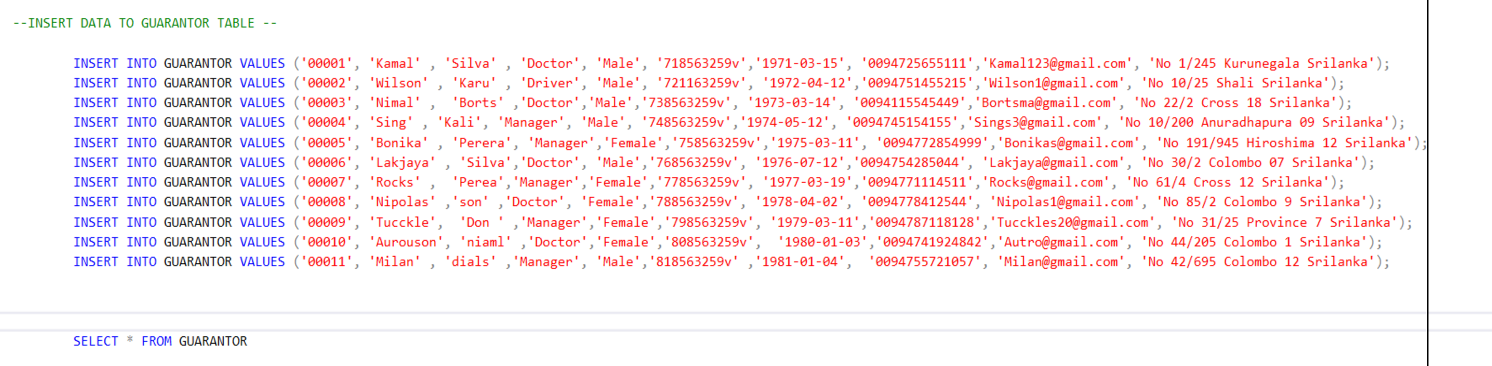
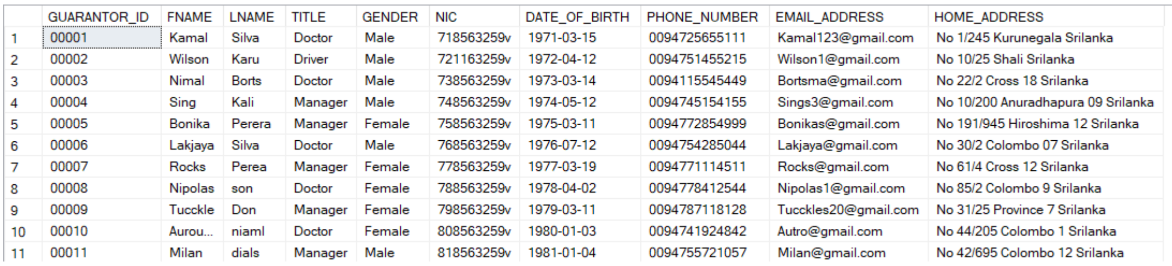


	ISBN	BOOK_NAME	TITLE	VOLUME	BOOK_YEAR	PUBLISHER_ID	AUTHOR_ID
1	000-0100-5623-1	Hash Bort	Programming	1	2000	00009	00001
2	000-0100-5623-2	Stacks in C	Programming	1	2001	00009	00001
3	000-0100-5623-3	C++ Basics	Programming	1	2002	00010	00001
4	000-0100-5623-4	Python Basics Goals	Programming	1	2020	00010	00001
5	000-0100-5623-5	Rubby Basics	Programming	1	2004	00001	00011
6	000-0100-5623-6	Java Scrips Basics	Programming	1	2005	00011	00001
7	000-0100-5624-1	Java Basics	Programming	1	2010	00001	00001
8	000-0100-5624-1-1	Java Basics ii	Programming	2	2012	00003	00001
9	000-0100-5624-2	Advanced HTML	Programming	1	2011	00002	00001
10	000-0100-5624-3	CSS Codings	Programming	1	2015	00003	00001
11	000-0100-5624-4	PHP Introduction	Programming	1	2020	00004	00001
12	000-0100-5624-5	C# Learn	Programming	1	2010	00005	00001
13	000-0100-5624-6	Rubbby Rocks	Programming	1	2020	00006	00001
14	000-0100-5624-7	Perl Language	Programming	1	2019	00007	00001
15	000-0100-5624-8	Java Language	Programming	1	2014	00007	00001
16	000-0100-5624-9	Python	Programming	1	2008	00008	00001
17	001-0100-0000-1	Srilanka Histoty	History	1	2005	00011	00015
18	001-0100-0000-2	India Histoty	History	1	2005	00011	00015
19	001-0100-0000-3	Japan Histoty	History	1	2005	00011	00015
20	001-0100-0000-4-1	China Histoty	History	1	2005	00011	00015
21	001-0100-0000-4-2	China Histoty	History	2	2006	00011	00015
22	001-0100-0000-4-3	China Histoty	History	4	2009	00011	00015
23	001-0100-0000-4-4	China Histoty	History	5	2011	00011	00015

Guarantor Table

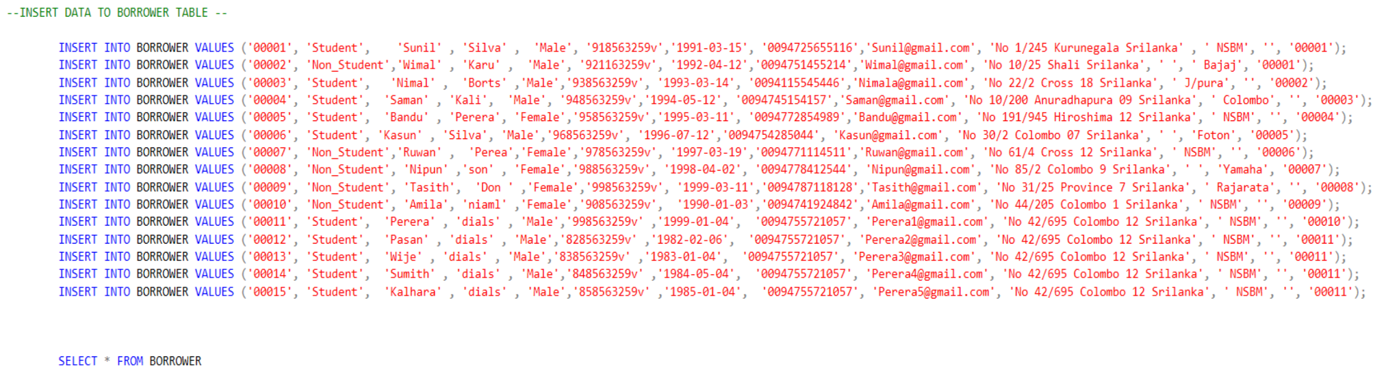


```sql
--INSERT DATA TO GUARANTOR TABLE --

        INSERT INTO GUARANTOR VALUES ('00001', 'Kamal' , 'Silva' , 'Doctor', 'Male', '718563259v','1971-03-15', '0094725655111','Kamal123@gmail.com', 'No 1/245 Kurunegala Srilanka');
        INSERT INTO GUARANTOR VALUES ('00002', 'Wilson' , 'Karu' , 'Driver', 'Male', '721163259v', '1972-04-12','0094751455215','Wilson1@gmail.com', 'No 10/25 Shali Srilanka');
        INSERT INTO GUARANTOR VALUES ('00003', 'Nimal' ,  'Borts' ,'Doctor','Male','738563259v', '1973-03-14', '0094115545449','Bortsma@gmail.com', 'No 22/2 Cross 18 Srilanka');
        INSERT INTO GUARANTOR VALUES ('00004', 'Sing' , 'Kali', 'Manager', 'Male', '748563259v','1974-05-12', '0094745154155','Sings3@gmail.com', 'No 10/200 Anuradhapura 09 Srilanka');
        INSERT INTO GUARANTOR VALUES ('00005', 'Bonika' , 'Perera', 'Manager','Female','758563259v','1975-03-11', '0094772854999','Bonikas@gmail.com', 'No 191/945 Hiroshima 12 Srilanka');
        INSERT INTO GUARANTOR VALUES ('00006', 'Lakjaya' , 'Silva','Doctor', 'Male','768563259v', '1976-07-12','0094754285044', 'Lakjaya@gmail.com', 'No 30/2 Colombo 07 Srilanka');
        INSERT INTO GUARANTOR VALUES ('00007', 'Rocks' ,  'Perea','Manager','Female','778563259v', '1977-03-19','0094771114511','Rocks@gmail.com', 'No 61/4 Cross 12 Srilanka');
        INSERT INTO GUARANTOR VALUES ('00008', 'Nipolas' ,'son' ,'Doctor', 'Female','788563259v', '1978-04-02', '0094778412544', 'Nipolas1@gmail.com', 'No 85/2 Colombo 9 Srilanka');
        INSERT INTO GUARANTOR VALUES ('00009', 'Tucckle',  'Don ' ,'Manager','Female','798563259v', '1979-03-11','0094787118128','Tuccklеs20@gmail.com', 'No 31/25 Province 7 Srilanka');
        INSERT INTO GUARANTOR VALUES ('00010', 'Aurouson', 'niaml' ,'Doctor','Female','808563259v',  '1980-01-03','0094741924842','Autro@gmail.com', 'No 44/205 Colombo 1 Srilanka');
        INSERT INTO GUARANTOR VALUES ('00011', 'Milan' , 'dials' ,'Manager', 'Male','818563259v' ,'1981-01-04',  '0094755721057', 'Milan@gmail.com', 'No 42/695 Colombo 12 Srilanka');


        SELECT * FROM GUARANTOR
```



	GUARANTOR_ID	FNAME	LNAME	TITLE	GENDER	NIC	DATE_OF_BIRTH	PHONE_NUMBER	EMAIL_ADDRESS	HOME_ADDRESS
1	00001	Kamal	Silva	Doctor	Male	718563259v	1971-03-15	0094725655111	Kamal123@gmail.com	No 1/245 Kurunegala Srilanka
2	00002	Wilson	Karu	Driver	Male	721163259v	1972-04-12	0094751455215	Wilson1@gmail.com	No 10/25 Shali Srilanka
3	00003	Nimal	Borts	Doctor	Male	738563259v	1973-03-14	0094115545449	Bortsma@gmail.com	No 22/2 Cross 18 Srilanka
4	00004	Sing	Kali	Manager	Male	748563259v	1974-05-12	0094745154155	Sings3@gmail.com	No 10/200 Anuradhapura 09 Srilanka
5	00005	Bonika	Perera	Manager	Female	758563259v	1975-03-11	0094772854999	Bonikas@gmail.com	No 191/945 Hiroshima 12 Srilanka
6	00006	Lakjaya	Silva	Doctor	Male	768563259v	1976-07-12	0094754285044	Lakjaya@gmail.com	No 30/2 Colombo 07 Srilanka
7	00007	Rocks	Perea	Manager	Female	778563259v	1977-03-19	0094771114511	Rocks@gmail.com	No 61/4 Cross 12 Srilanka
8	00008	Nipolas	son	Doctor	Female	788563259v	1978-04-02	0094778412544	Nipolas1@gmail.com	No 85/2 Colombo 9 Srilanka
9	00009	Tucckle	Don	Manager	Female	798563259v	1979-03-11	0094787118128	Tucckles20@gmail.com	No 31/25 Province 7 Srilanka
10	00010	Aurou...	niaml	Doctor	Female	808563259v	1980-01-03	0094741924842	Autro@gmail.com	No 44/205 Colombo 1 Srilanka
11	00011	Milan	dials	Manager	Male	818563259v	1981-01-04	0094755721057	Milan@gmail.com	No 42/695 Colombo 12 Srilanka

Borrower Table



```sql
--INSERT DATA TO BORROWER TABLE --

        INSERT INTO BORROWER VALUES ('00001', 'Student',    'Sunil' , 'Silva' ,  'Male', '918563259v','1991-03-15', '0094725655116','Sunil@gmail.com', 'No 1/245 Kurunegala Srilanka' , ' NSBM', '', '00001');
        INSERT INTO BORROWER VALUES ('00002', 'Non_Student','Wimal' , 'Karu' ,  'Male', '921163259v', '1992-04-12','0094751455214','Wimal@gmail.com', 'No 10/25 Shali Srilanka', ' ', ' Bajaj', '00001');
        INSERT INTO BORROWER VALUES ('00003', 'Student',   'Nimal' ,  'Borts' ,'Male','938563259v', '1993-03-14', '0094115545446','Nimala@gmail.com', 'No 22/2 Cross 18 Srilanka', ' J/pura', '', '00002');
        INSERT INTO BORROWER VALUES ('00004', 'Student',  'Saman' , 'Kali',  'Male', '948563259v','1994-05-12', '0094745154157','Saman@gmail.com', 'No 10/200 Anuradhapura 09 Srilanka', ' Colombo', '', '00003');
        INSERT INTO BORROWER VALUES ('00005', 'Student',  'Bandu' , 'Perera', 'Female','958563259v','1995-03-11', '0094772854989','Bandu@gmail.com', 'No 191/945 Hiroshima 12 Srilanka', ' NSBM', '', '00004');
        INSERT INTO BORROWER VALUES ('00006', 'Student', 'Kasun' , 'Silva', 'Male','968563259v', '1996-07-12','0094754285044', 'Kasun@gmail.com', 'No 30/2 Colombo 07 Srilanka', ' ', 'Foton', '00005');
        INSERT INTO BORROWER VALUES ('00007', 'Non_Student','Ruwan' ,  'Perea','Female','978563259v', '1997-03-19','0094771114511','Ruwan@gmail.com', 'No 61/4 Cross 12 Srilanka', ' NSBM', '', '00006');
        INSERT INTO BORROWER VALUES ('00008', 'Non_Student', 'Nipun' ,'son' , 'Female','988563259v', '1998-04-02', '0094778412544', 'Nipun@gmail.com', 'No 85/2 Colombo 9 Srilanka', ' ', 'Yamaha', '00007');
        INSERT INTO BORROWER VALUES ('00009', 'Non_Student', 'Tasith',  'Don ' ,'Female','998563259v', '1999-03-11','0094787118128','Tasith@gmail.com', 'No 31/25 Province 7 Srilanka', ' Rajarata', '', '00008');
        INSERT INTO BORROWER VALUES ('00010', 'Non_Student', 'Amila', 'niaml' ,'Female','908563259v',  '1990-01-03','0094741924842','Amila@gmail.com', 'No 44/205 Colombo 1 Srilanka', ' NSBM', '', '00009');
        INSERT INTO BORROWER VALUES ('00011', 'Student',  'Perera' , 'dials' , 'Male','998563259v' ,'1999-01-04',  '0094755721057', 'Perera1@gmail.com', 'No 42/695 Colombo 12 Srilanka', ' NSBM', '', '00010');
        INSERT INTO BORROWER VALUES ('00012', 'Student',  'Pasan' , 'dials' , 'Male','828563259v' ,'1982-02-06',  '0094755721057', 'Perera2@gmail.com', 'No 42/695 Colombo 12 Srilanka', ' NSBM', '', '00011');
        INSERT INTO BORROWER VALUES ('00013', 'Student',  'Wije' , 'dials' , 'Male','838563259v' ,'1983-01-04',  '0094755721057', 'Perera3@gmail.com', 'No 42/695 Colombo 12 Srilanka', ' NSBM', '', '00011');
        INSERT INTO BORROWER VALUES ('00014', 'Student',  'Sumith' , 'dials' , 'Male','848563259v' ,'1984-05-04',  '0094755721057', 'Perera4@gmail.com', 'No 42/695 Colombo 12 Srilanka', ' NSBM', '', '00011');
        INSERT INTO BORROWER VALUES ('00015', 'Student',  'Kalhara' , 'dials' , 'Male','858563259v' ,'1985-01-04',  '0094755721057', 'Perera5@gmail.com', 'No 42/695 Colombo 12 Srilanka', ' NSBM', '', '00011');



        SELECT * FROM BORROWER
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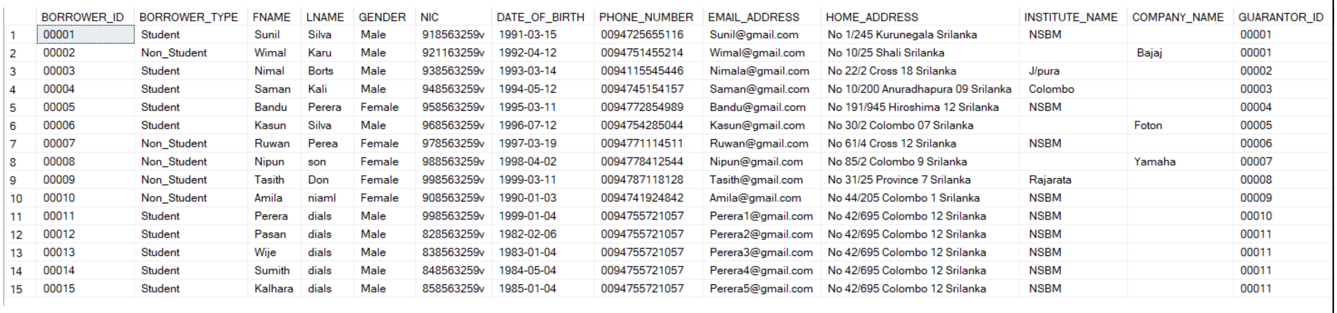
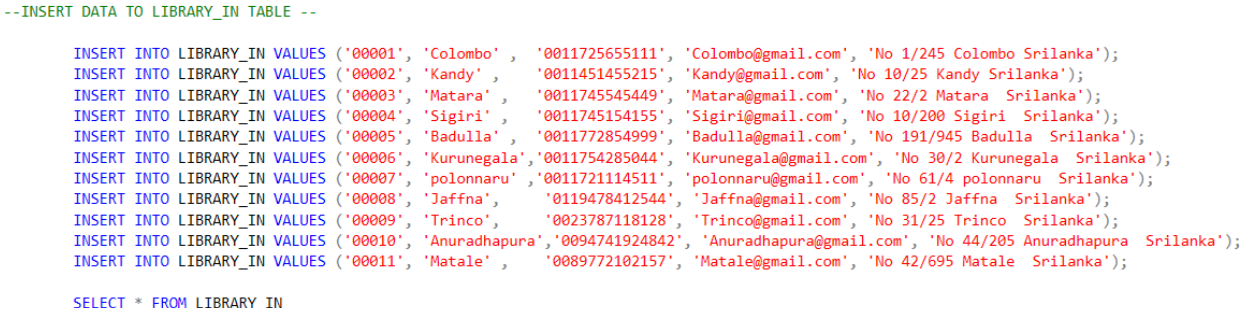


	BORROWER_ID	BORROWER_TYPE	FNAME	LNAME	GENDER	NIC	DATE_OF_BIRTH	PHONE_NUMBER	EMAIL_ADDRESS	HOME_ADDRESS	INSTITUTE_NAME	COMPANY_NAME	GUARANTOR_ID
1	00001	Student	Sunil	Silva	Male	918563259v	1991-03-15	0094725655116	Sunil@gmail.com	No 1/245 Kurunegala Srilanka	NSBM		00001
2	00002	Non_Student	Wimal	Karu	Male	921163259v	1992-04-12	0094751455214	Wimal@gmail.com	No 10/25 Shali Srilanka		Bajaj	00001
3	00003	Student	Nimal	Borts	Male	938563259v	1993-03-14	0094115545446	Nimala@gmail.com	No 22/2 Cross 18 Srilanka	J/pura		00002
4	00004	Student	Saman	Kali	Male	948563259v	1994-05-12	0094745154157	Saman@gmail.com	No 10/200 Anuradhapura 09 Srilanka	Colombo		00003
5	00005	Student	Bandu	Perera	Female	958563259v	1995-03-11	0094772854989	Bandu@gmail.com	No 191/945 Hiroshima 12 Srilanka	NSBM		00004
6	00006	Student	Kasun	Silva	Male	968563259v	1996-07-12	0094754285044	Kasun@gmail.com	No 30/2 Colombo 07 Srilanka		Foton	00005
7	00007	Non_Student	Ruwan	Perea	Female	978563259v	1997-03-19	0094771114511	Ruwan@gmail.com	No 61/4 Cross 12 Srilanka	NSBM		00006
8	00008	Non_Student	Nipun	son	Female	988563259v	1998-04-02	0094778412544	Nipun@gmail.com	No 85/2 Colombo 9 Srilanka		Yamaha	00007
9	00009	Non_Student	Tasith	Don	Female	998563259v	1999-03-11	0094787118128	Tasith@gmail.com	No 31/25 Province 7 Srilanka	Rajarata		00008
10	00010	Non_Student	Amila	niaml	Female	908563259v	1990-01-03	0094741924842	Amila@gmail.com	No 44/205 Colombo 1 Srilanka	NSBM		00009
11	00011	Student	Perera	dials	Male	998563259v	1999-01-04	0094755721057	Perera1@gmail.com	No 42/695 Colombo 12 Srilanka	NSBM		00010
12	00012	Student	Pasan	dials	Male	828563259v	1982-02-06	0094755721057	Perera2@gmail.com	No 42/695 Colombo 12 Srilanka	NSBM		00011
13	00013	Student	Wije	dials	Male	838563259v	1983-01-04	0094755721057	Perera3@gmail.com	No 42/695 Colombo 12 Srilanka	NSBM		00011
14	00014	Student	Sumith	dials	Male	848563259v	1984-05-04	0094755721057	Perera4@gmail.com	No 42/695 Colombo 12 Srilanka	NSBM		00011
15	00015	Student	Kalhara	dials	Male	858563259v	1985-01-04	0094755721057	Perera5@gmail.com	No 42/695 Colombo 12 Srilanka	NSBM		00011

Library in Table



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--INSERT DATA TO LIBRARY_IN TABLE --

        INSERT INTO LIBRARY_IN VALUES ('00001', 'Colombo' ,  '0011725655111', 'Colombo@gmail.com', 'No 1/245 Colombo Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00002', 'Kandy' ,    '0011451455215', 'Kandy@gmail.com', 'No 10/25 Kandy Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00003', 'Matara' ,   '0011745545449', 'Matara@gmail.com', 'No 22/2 Matara  Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00004', 'Sigiri' ,   '0011745154155', 'Sigiri@gmail.com', 'No 10/200 Sigiri  Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00005', 'Badulla' ,  '0011772854999', 'Badulla@gmail.com', 'No 191/945 Badulla  Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00006', 'Kurunegala','0011754285044', 'Kurunegala@gmail.com', 'No 30/2 Kurunegala  Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00007', 'polonnaru' ,'0011721114511', 'polonnaru@gmail.com', 'No 61/4 polonnaru  Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00008', 'Jaffna',     '0119478412544', 'Jaffna@gmail.com', 'No 85/2 Jaffna  Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00009', 'Trinco',     '0023787118128', 'Trinco@gmail.com', 'No 31/25 Trinco  Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00010', 'Anuradhapura','0094741924842', 'Anuradhapura@gmail.com', 'No 44/205 Anuradhapura  Srilanka');
        INSERT INTO LIBRARY_IN VALUES ('00011', 'Matale' ,    '0089772102157', 'Matale@gmail.com', 'No 42/695 Matale  Srilanka');

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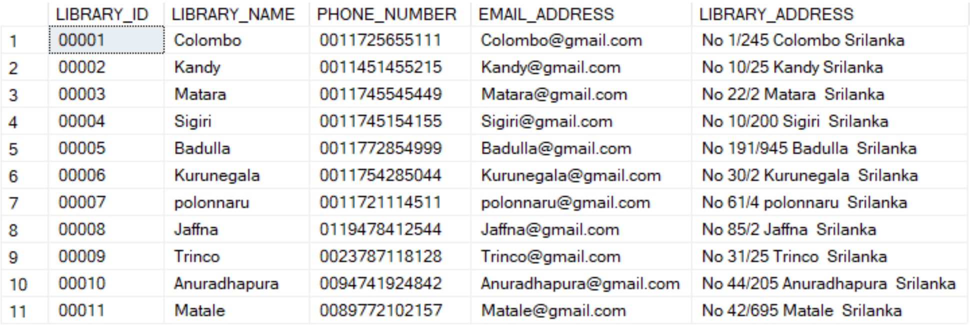
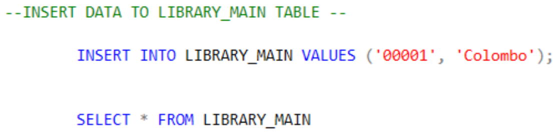


	LIBRARY_ID	LIBRARY_NAME	PHONE_NUMBER	EMAIL_ADDRESS	LIBRARY_ADDRESS
1	00001	Colombo	0011725655111	Colombo@gmail.com	No 1/245 Colombo Srilanka
2	00002	Kandy	0011451455215	Kandy@gmail.com	No 10/25 Kandy Srilanka
3	00003	Matara	0011745545449	Matara@gmail.com	No 22/2 Matara Srilanka
4	00004	Sigiri	0011745154155	Sigiri@gmail.com	No 10/200 Sigiri Srilanka
5	00005	Badulla	0011772854999	Badulla@gmail.com	No 191/945 Badulla Srilanka
6	00006	Kurunegala	0011754285044	Kurunegala@gmail.com	No 30/2 Kurunegala Srilanka
7	00007	polonnaru	0011721114511	polonnaru@gmail.com	No 61/4 polonnaru Srilanka
8	00008	Jaffna	0119478412544	Jaffna@gmail.com	No 85/2 Jaffna Srilanka
9	00009	Trinco	0023787118128	Trinco@gmail.com	No 31/25 Trinco Srilanka
10	00010	Anuradhapura	0094741924842	Anuradhapura@gmail.com	No 44/205 Anuradhapura Srilanka
11	00011	Matale	0089772102157	Matale@gmail.com	No 42/695 Matale Srilanka

Library Main Table



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--INSERT DATA TO LIBRARY_MAIN TABLE --

        INSERT INTO LIBRARY_MAIN VALUES ('00001', 'Colombo');


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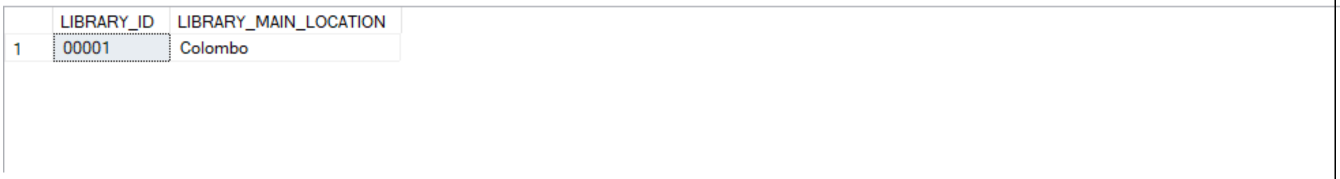
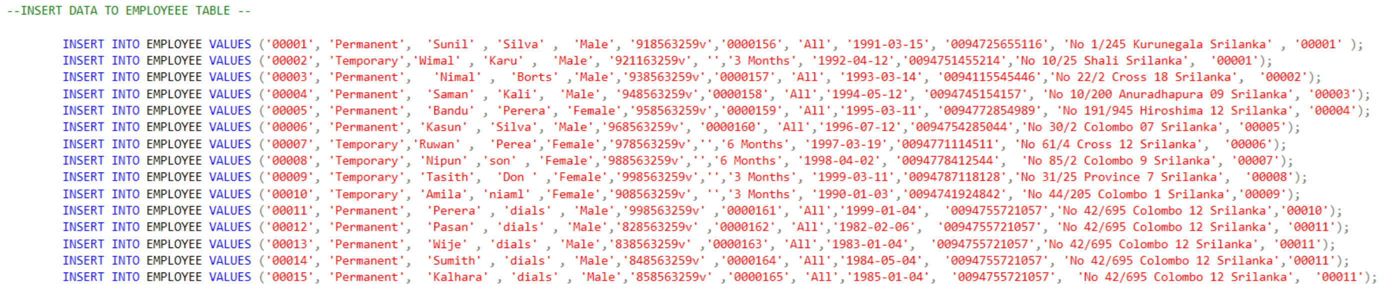


	LIBRARY_ID	LIBRARY_MAIN_LOCATION
1	00001	Colombo

Employee Table



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--INSERT DATA TO EMPLOYEEE TABLE --

        INSERT INTO EMPLOYEE VALUES ('00001', 'Permanent',  'Sunil' , 'Silva' ,  'Male', '918563259v','0000156', 'All', '1991-03-15', '0094725655116', 'No 1/245 Kurunegala Srilanka' , '00001' );
        INSERT INTO EMPLOYEE VALUES ('00002', 'Temporary','Wimal' , 'Karu' ,  'Male', '921163259v', '','3 Months', '1992-04-12','0094751455214','No 10/25 Shali Srilanka',  '00001');
        INSERT INTO EMPLOYEE VALUES ('00003', 'Permanent',   'Nimal' ,  'Borts' ,'Male','938563259v','0000157', 'All', '1993-03-14', '0094115545446','No 22/2 Cross 18 Srilanka',  '00002');
        INSERT INTO EMPLOYEE VALUES ('00004', 'Permanent',  'Saman' , 'Kali',  'Male', '948563259v','0000158', 'All','1994-05-12', '0094745154157', 'No 10/200 Anuradhapura 09 Srilanka', '00003');
        INSERT INTO EMPLOYEE VALUES ('00005', 'Permanent',  'Bandu' , 'Perera', 'Female','958563259v','0000159', 'All','1995-03-11', '0094772854989', 'No 191/945 Hiroshima 12 Srilanka', '00004');
        INSERT INTO EMPLOYEE VALUES ('00006', 'Permanent', 'Kasun' , 'Silva', 'Male','968563259v', '0000160', 'All','1996-07-12','0094754285044','No 30/2 Colombo 07 Srilanka', '00005');
        INSERT INTO EMPLOYEE VALUES ('00007', 'Temporary','Ruwan' ,  'Perea','Female','978563259v','','6 Months', '1997-03-19','0094771114511', 'No 61/4 Cross 12 Srilanka',  '00006');
        INSERT INTO EMPLOYEE VALUES ('00008', 'Temporary', 'Nipun' ,'son' , 'Female','988563259v','','6 Months', '1998-04-02', '0094778412544',  'No 85/2 Colombo 9 Srilanka', '00007');
        INSERT INTO EMPLOYEE VALUES ('00009', 'Temporary', 'Tasith',  'Don ' ,'Female','998563259v','','3 Months', '1999-03-11','0094787118128','No 31/25 Province 7 Srilanka',  '00008');
        INSERT INTO EMPLOYEE VALUES ('00010', 'Temporary', 'Amila', 'niaml' ,'Female','908563259v', '','3 Months', '1990-01-03','0094741924842', 'No 44/205 Colombo 1 Srilanka','00009');
        INSERT INTO EMPLOYEE VALUES ('00011', 'Permanent',  'Perera' , 'dials' , 'Male','998563259v' ,'0000161', 'All','1999-01-04',  '0094755721057','No 42/695 Colombo 12 Srilanka','00010');
        INSERT INTO EMPLOYEE VALUES ('00012', 'Permanent',  'Pasan' , 'dials' , 'Male','828563259v' ,'0000162', 'All','1982-02-06',  '0094755721057', 'No 42/695 Colombo 12 Srilanka', '00011');
        INSERT INTO EMPLOYEE VALUES ('00013', 'Permanent',  'Wije' , 'dials' , 'Male','838563259v' ,'0000163', 'All','1983-01-04',  '0094755721057','No 42/695 Colombo 12 Srilanka', '00011');
        INSERT INTO EMPLOYEE VALUES ('00014', 'Permanent',  'Sumith' , 'dials' , 'Male','848563259v' ,'0000164', 'All','1984-05-04',  '0094755721057', 'No 42/695 Colombo 12 Srilanka','00011');
        INSERT INTO EMPLOYEE VALUES ('00015', 'Permanent',  'Kalhara' , 'dials' , 'Male','858563259v' ,'0000165', 'All','1985-01-04',  '0094755721057',  'No 42/695 Colombo 12 Srilanka',  '00011');
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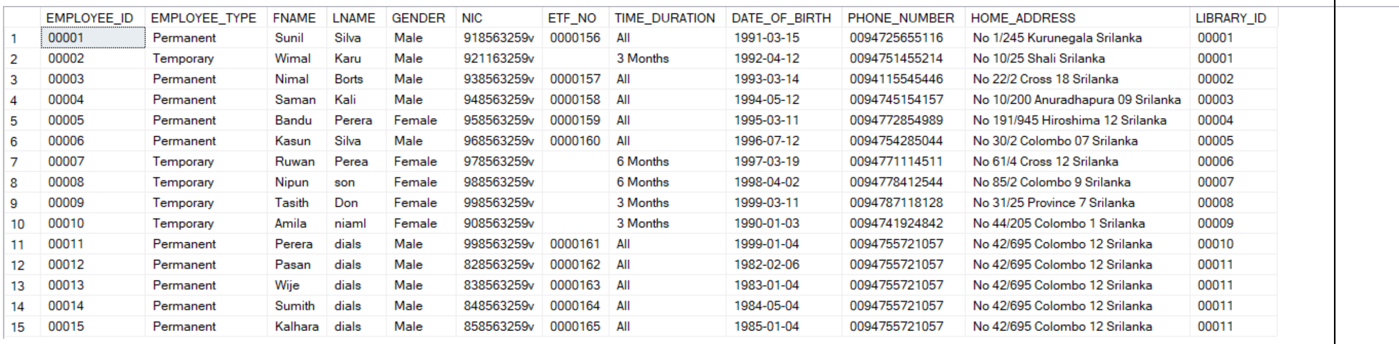

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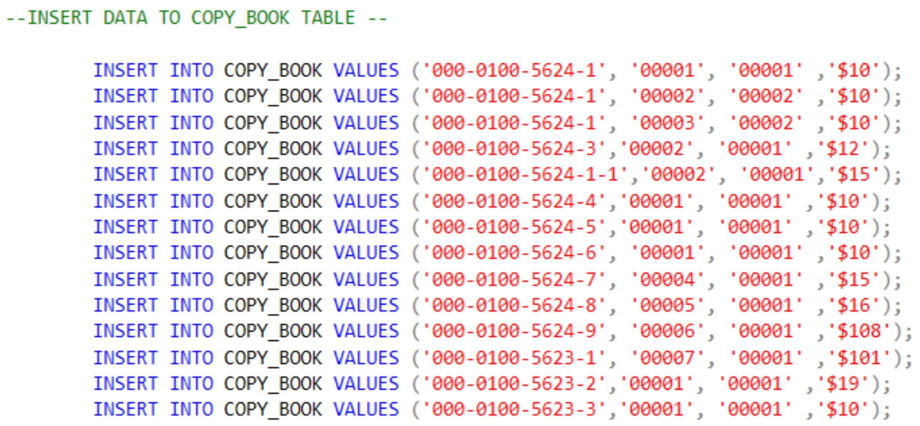
1	00001	Permanent	Sunil	Silva	Male	918563259v	0000156	All	1991-03-15	0094725655116	No 1/245 Kurunegala Srilanka	00001
2	00002	Temporary	Wimal	Karu	Male	921163259v		3 Months	1992-04-12	0094751455214	No 10/25 Shali Srilanka	00001
3	00003	Permanent	Nimal	Borts	Male	938563259v	0000157	All	1993-03-14	0094115545446	No 22/2 Cross 18 Srilanka	00002
4	00004	Permanent	Saman	Kali	Male	948563259v	0000158	All	1994-05-12	0094745154157	No 10/200 Anuradhapura 09 Srilanka	00003
5	00005	Permanent	Bandu	Perera	Female	958563259v	0000159	All	1995-03-11	0094772854989	No 191/945 Hiroshima 12 Srilanka	00004
6	00006	Permanent	Kasun	Silva	Male	968563259v	0000160	All	1996-07-12	0094754285044	No 30/2 Colombo 07 Srilanka	00005
7	00007	Temporary	Ruwan	Perea	Female	978563259v		6 Months	1997-03-19	0094771114511	No 61/4 Cross 12 Srilanka	00006
8	00008	Temporary	Nipun	son	Female	988563259v		6 Months	1998-04-02	0094778412544	No 85/2 Colombo 9 Srilanka	00007
9	00009	Temporary	Tasith	Don	Female	998563259v		3 Months	1999-03-11	0094787118128	No 31/25 Province 7 Srilanka	00008
10	00010	Temporary	Amila	niaml	Female	908563259v		3 Months	1990-01-03	0094741924842	No 44/205 Colombo 1 Srilanka	00009
11	00011	Permanent	Perera	dials	Male	998563259v	0000161	All	1999-01-04	0094755721057	No 42/695 Colombo 12 Srilanka	00010
12	00012	Permanent	Pasan	dials	Male	828563259v	0000162	All	1982-02-06	0094755721057	No 42/695 Colombo 12 Srilanka	00011
13	00013	Permanent	Wije	dials	Male	838563259v	0000163	All	1983-01-04	0094755721057	No 42/695 Colombo 12 Srilanka	00011
14	00014	Permanent	Sumith	dials	Male	848563259v	0000164	All	1984-05-04	0094755721057	No 42/695 Colombo 12 Srilanka	00011
15	00015	Permanent	Kalhara	dials	Male	858563259v	0000165	All	1985-01-04	0094755721057	No 42/695 Colombo 12 Srilanka	00011

Copy Book Table

Copy Book Table



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--INSERT DATA TO COPY_BOOK TABLE --

        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-1', '00001', '00001' ,'$10');
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        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-1', '00003', '00002' ,'$10');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-3','00002', '00001' ,'$12');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-1-1','00002', '00001','$15');
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        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-5','00001', '00001' ,'$10');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-6', '00001', '00001' ,'$10');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-7', '00004', '00001' ,'$15');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-8', '00005', '00001' ,'$16');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5624-9', '00006', '00001' ,'$108');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5623-1', '00007', '00001' ,'$101');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5623-2','00001', '00001' ,'$19');
        INSERT INTO COPY_BOOK VALUES ('000-0100-5623-3','00001', '00001' ,'$10');
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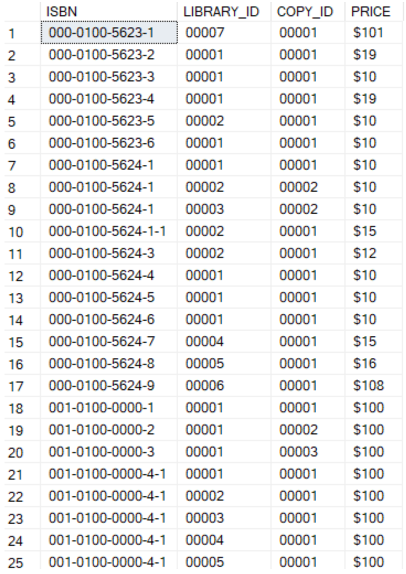

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3	000-0100-5623-3	00001	00001	$10
4	000-0100-5623-4	00001	00001	$19
5	000-0100-5623-5	00002	00001	$10
6	000-0100-5623-6	00001	00001	$10
7	000-0100-5624-1	00001	00001	$10
8	000-0100-5624-1	00002	00002	$10
9	000-0100-5624-1	00003	00002	$10
10	000-0100-5624-1-1	00002	00001	$15
11	000-0100-5624-3	00002	00001	$12
12	000-0100-5624-4	00001	00001	$10
13	000-0100-5624-5	00001	00001	$10
14	000-0100-5624-6	00001	00001	$10
15	000-0100-5624-7	00004	00001	$15
16	000-0100-5624-8	00005	00001	$16
17	000-0100-5624-9	00006	00001	$108
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19	001-0100-0000-2	00001	00002	$100
20	001-0100-0000-3	00001	00003	$100
21	001-0100-0000-4-1	00001	00001	$100
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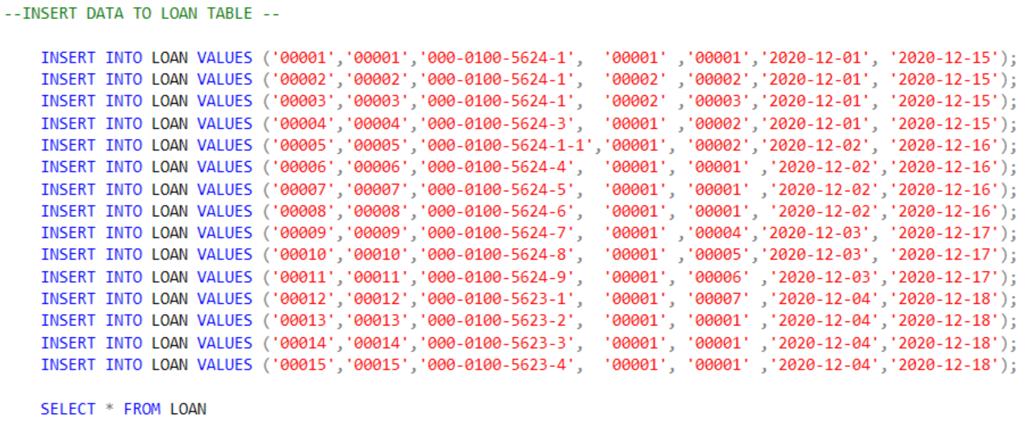
Loan Table



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--INSERT DATA TO LOAN TABLE --

    INSERT INTO LOAN VALUES ('00001','00001','000-0100-5624-1',  '00001' ,'00001','2020-12-01', '2020-12-15');
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    INSERT INTO LOAN VALUES ('00004','00004','000-0100-5624-3',  '00001' ,'00002','2020-12-01', '2020-12-15');
    INSERT INTO LOAN VALUES ('00005','00005','000-0100-5624-1-1','00001', '00002','2020-12-02', '2020-12-16');
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    INSERT INTO LOAN VALUES ('00007','00007','000-0100-5624-5',  '00001', '00001' ,'2020-12-02','2020-12-16');
    INSERT INTO LOAN VALUES ('00008','00008','000-0100-5624-6',  '00001', '00001', '2020-12-02','2020-12-16');
    INSERT INTO LOAN VALUES ('00009','00009','000-0100-5624-7',  '00001' ,'00004','2020-12-03', '2020-12-17');
    INSERT INTO LOAN VALUES ('00010','00010','000-0100-5624-8',  '00001' ,'00005','2020-12-03', '2020-12-17');
    INSERT INTO LOAN VALUES ('00011','00011','000-0100-5624-9',  '00001', '00006' ,'2020-12-03','2020-12-17');
    INSERT INTO LOAN VALUES ('00012','00012','000-0100-5623-1',  '00001', '00007' ,'2020-12-04','2020-12-18');
    INSERT INTO LOAN VALUES ('00013','00013','000-0100-5623-2',  '00001', '00001' ,'2020-12-04','2020-12-18');
    INSERT INTO LOAN VALUES ('00014','00014','000-0100-5623-3',  '00001', '00001' ,'2020-12-04','2020-12-18');
    INSERT INTO LOAN VALUES ('00015','00015','000-0100-5623-4',  '00001', '00001' ,'2020-12-04','2020-12-18');

    SELECT * FROM LOAN
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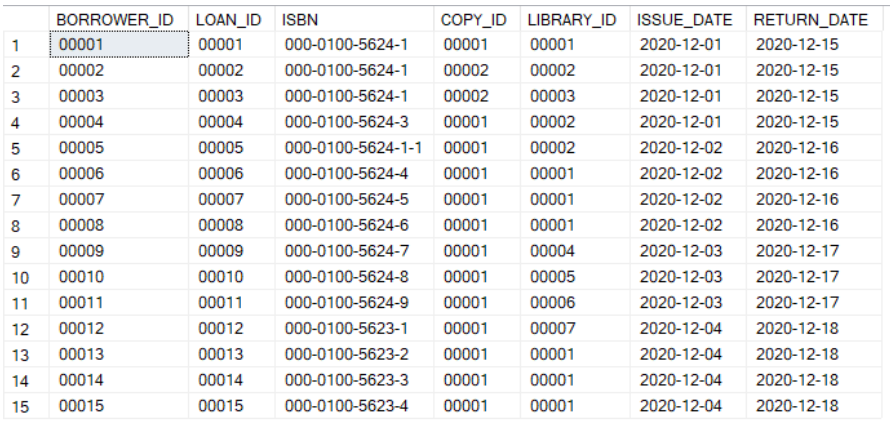

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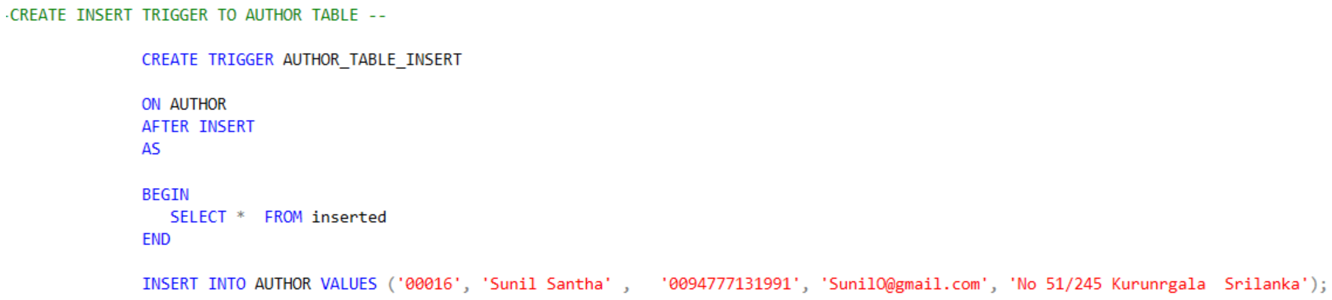
3	00003	00003	000-0100-5624-1	00002	00003	2020-12-01	2020-12-15
4	00004	00004	000-0100-5624-3	00001	00002	2020-12-01	2020-12-15
5	00005	00005	000-0100-5624-1-1	00001	00002	2020-12-02	2020-12-16
6	00006	00006	000-0100-5624-4	00001	00001	2020-12-02	2020-12-16
7	00007	00007	000-0100-5624-5	00001	00001	2020-12-02	2020-12-16
8	00008	00008	000-0100-5624-6	00001	00001	2020-12-02	2020-12-16
9	00009	00009	000-0100-5624-7	00001	00004	2020-12-03	2020-12-17
10	00010	00010	000-0100-5624-8	00001	00005	2020-12-03	2020-12-17
11	00011	00011	000-0100-5624-9	00001	00006	2020-12-03	2020-12-17
12	00012	00012	000-0100-5623-1	00001	00007	2020-12-04	2020-12-18
13	00013	00013	000-0100-5623-2	00001	00001	2020-12-04	2020-12-18
14	00014	00014	000-0100-5623-3	00001	00001	2020-12-04	2020-12-18
15	00015	00015	000-0100-5623-4	00001	00001	2020-12-04	2020-12-18

SECTION 03

3.1. Trigger Statements

❖ Create insert triggers for Author table



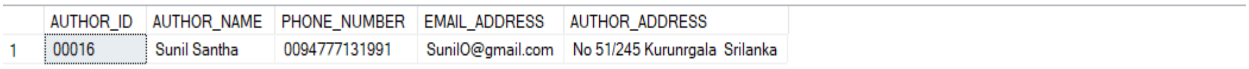
```
-CREATE INSERT TRIGGER TO AUTHOR TABLE --

                CREATE TRIGGER AUTHOR_TABLE_INSERT

                ON AUTHOR
                AFTER INSERT
                AS

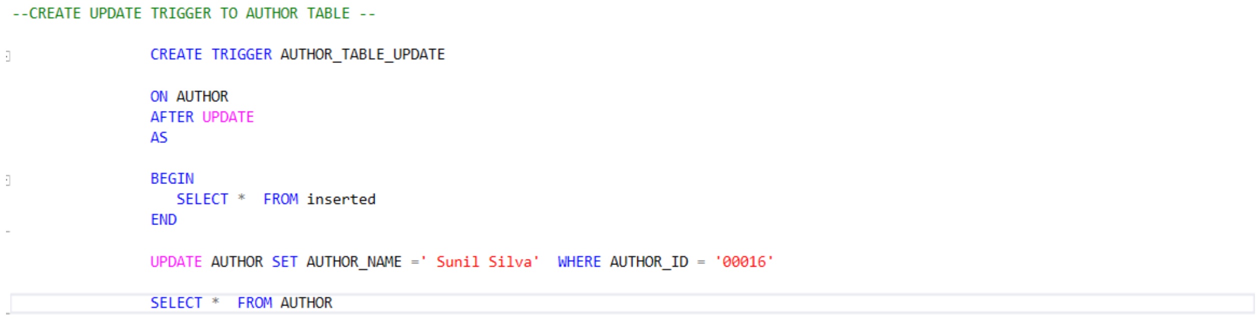
                BEGIN
                   SELECT *  FROM inserted
                END

                INSERT INTO AUTHOR VALUES ('00016', 'Sunil Santha' ,   '0094777131991', 'Sunil0@gmail.com', 'No 51/245 Kurunrgala  Srilanka');
```



	AUTHOR_ID	AUTHOR_NAME	PHONE_NUMBER	EMAIL_ADDRESS	AUTHOR_ADDRESS
1	00016	Sunil Santha	0094777131991	Sunil0@gmail.com	No 51/245 Kurunrgala Srilanka

❖ Create update triggers for Author table



```
--CREATE UPDATE TRIGGER TO AUTHOR TABLE --

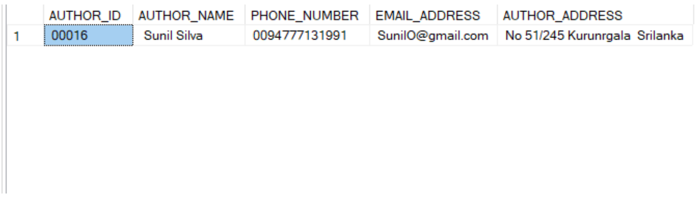
                CREATE TRIGGER AUTHOR_TABLE_UPDATE

                ON AUTHOR
                AFTER UPDATE
                AS

                BEGIN
                   SELECT *  FROM inserted
                END

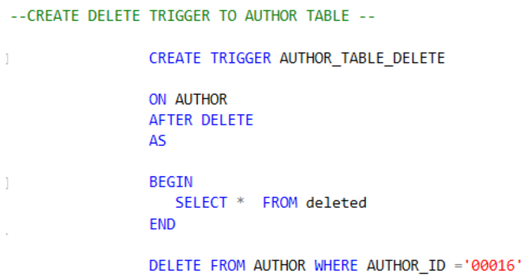
                UPDATE AUTHOR SET AUTHOR_NAME =' Sunil Silva'  WHERE AUTHOR_ID = '00016'

                SELECT *  FROM AUTHOR
```



	AUTHOR_ID	AUTHOR_NAME	PHONE_NUMBER	EMAIL_ADDRESS	AUTHOR_ADDRESS
1	00016	Sunil Silva	0094777131991	Sunil0@gmail.com	No 51/245 Kurunrgala Srilanka

❖ Create insert triggers for Author table



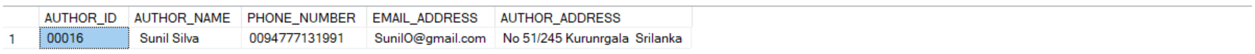
```
--CREATE DELETE TRIGGER TO AUTHOR TABLE --

                CREATE TRIGGER AUTHOR_TABLE_DELETE

                ON AUTHOR
                AFTER DELETE
                AS

                BEGIN
                   SELECT *  FROM deleted
                END

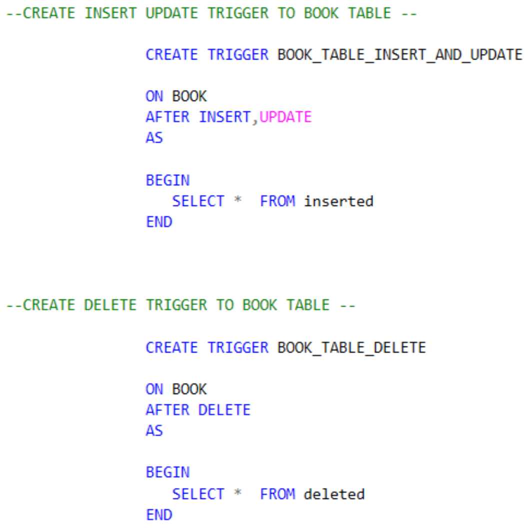
                DELETE FROM AUTHOR WHERE AUTHOR_ID ='00016'
```



	AUTHOR_ID	AUTHOR_NAME	PHONE_NUMBER	EMAIL_ADDRESS	AUTHOR_ADDRESS
1	00016	Sunil Silva	0094777131991	SunilO@gmail.com	No 51/245 Kurunrgala Srilanka

Book Table

❖ Create insert, update, delete triggers for book table



```
--CREATE INSERT UPDATE TRIGGER TO BOOK TABLE --

                CREATE TRIGGER BOOK_TABLE_INSERT_AND_UPDATE

                ON BOOK
                AFTER INSERT,UPDATE
                AS

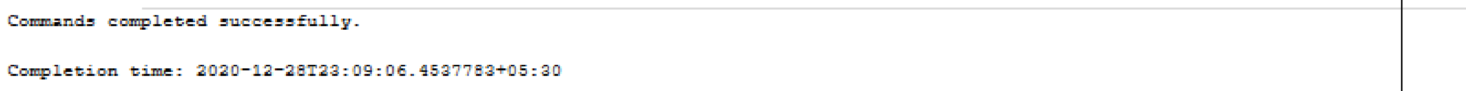
                BEGIN
                   SELECT *  FROM inserted
                END


--CREATE DELETE TRIGGER TO BOOK TABLE --

                CREATE TRIGGER BOOK_TABLE_DELETE

                ON BOOK
                AFTER DELETE
                AS

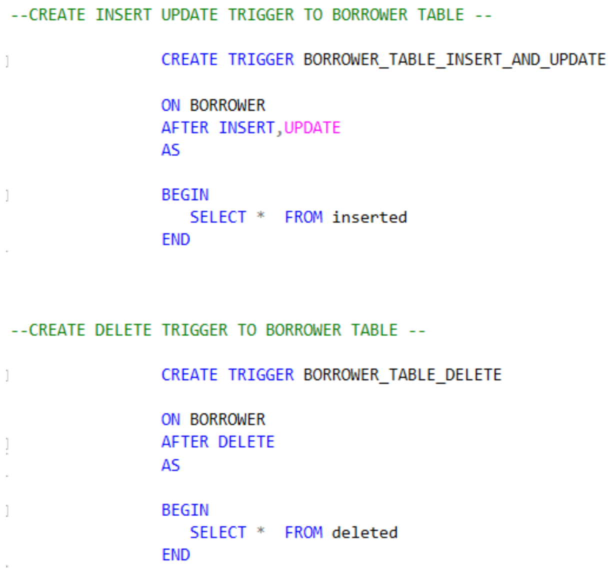
                BEGIN
                   SELECT *  FROM deleted
                END
```



```
Commands completed successfully.

Completion time: 2020-12-28T23:09:06.4537783+05:30
```

❖ Create insert, update, delete triggers for Borrower Table



```
--CREATE INSERT UPDATE TRIGGER TO BORROWER TABLE --

            CREATE TRIGGER BORROWER_TABLE_INSERT_AND_UPDATE

            ON BORROWER
            AFTER INSERT,UPDATE
            AS

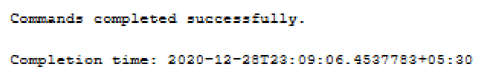
            BEGIN
               SELECT *  FROM inserted
            END


--CREATE DELETE TRIGGER TO BORROWER TABLE --

            CREATE TRIGGER BORROWER_TABLE_DELETE

            ON BORROWER
            AFTER DELETE
            AS

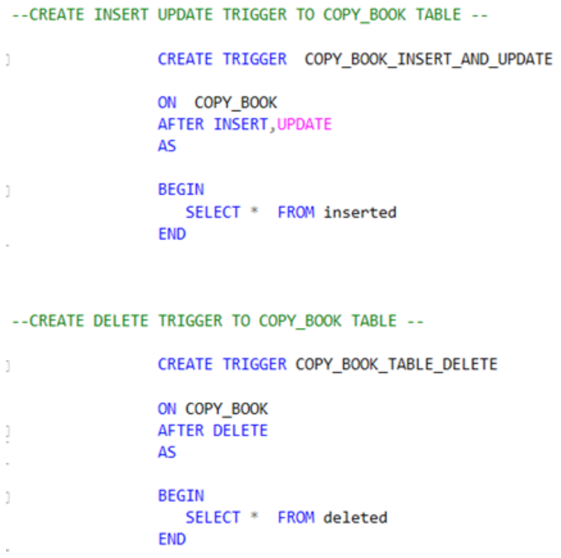
            BEGIN
               SELECT *  FROM deleted
            END
```



```
Commands completed successfully.

Completion time: 2020-12-28T23:09:06.4537783+05:30
```

❖ Create insert, update, delete triggers for Copy Book Table



```
--CREATE INSERT UPDATE TRIGGER TO COPY_BOOK TABLE --

            CREATE TRIGGER  COPY_BOOK_INSERT_AND_UPDATE

            ON  COPY_BOOK
            AFTER INSERT,UPDATE
            AS

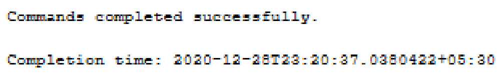
            BEGIN
               SELECT *  FROM inserted
            END


--CREATE DELETE TRIGGER TO COPY_BOOK TABLE --

            CREATE TRIGGER COPY_BOOK_TABLE_DELETE

            ON COPY_BOOK
            AFTER DELETE
            AS

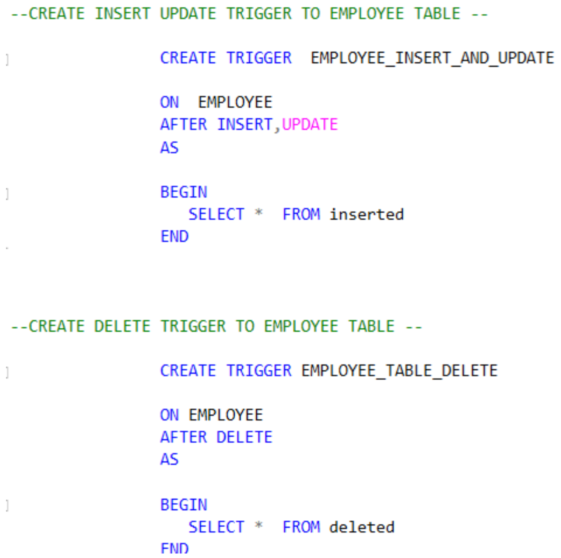
            BEGIN
               SELECT *  FROM deleted
            END
```



```
Commands completed successfully.

Completion time: 2020-12-28T23:20:37.0380422+05:30
```

❖ Create insert, update, delete triggers for Employee Table



```
--CREATE INSERT UPDATE TRIGGER TO EMPLOYEE TABLE --

                CREATE TRIGGER  EMPLOYEE_INSERT_AND_UPDATE

                ON  EMPLOYEE
                AFTER INSERT,UPDATE
                AS

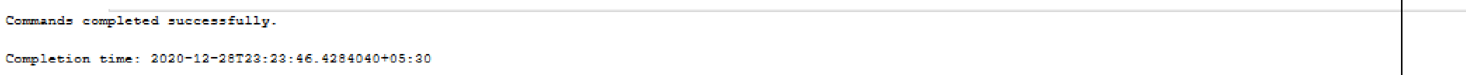
                BEGIN
                   SELECT *  FROM inserted
                END


--CREATE DELETE TRIGGER TO EMPLOYEE TABLE --

                CREATE TRIGGER EMPLOYEE_TABLE_DELETE

                ON EMPLOYEE
                AFTER DELETE
                AS

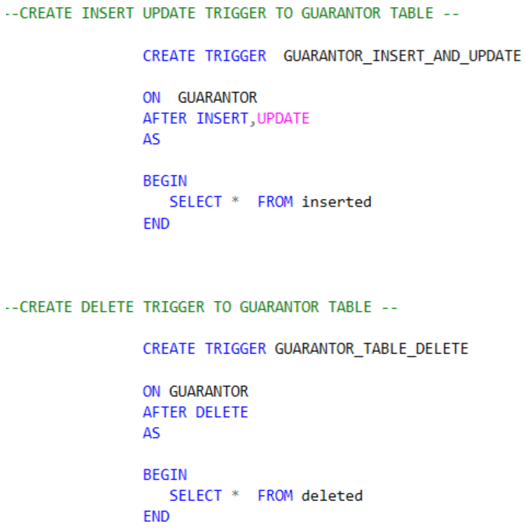
                BEGIN
                   SELECT *  FROM deleted
                END
```



```
Commands completed successfully.

Completion time: 2020-12-28T23:23:46.4284040+05:30
```

❖ Create insert, update, delete triggers for Guarantor Table



```
--CREATE INSERT UPDATE TRIGGER TO GUARANTOR TABLE --

               CREATE TRIGGER  GUARANTOR_INSERT_AND_UPDATE

               ON  GUARANTOR
               AFTER INSERT,UPDATE
               AS

               BEGIN
                  SELECT *  FROM inserted
               END

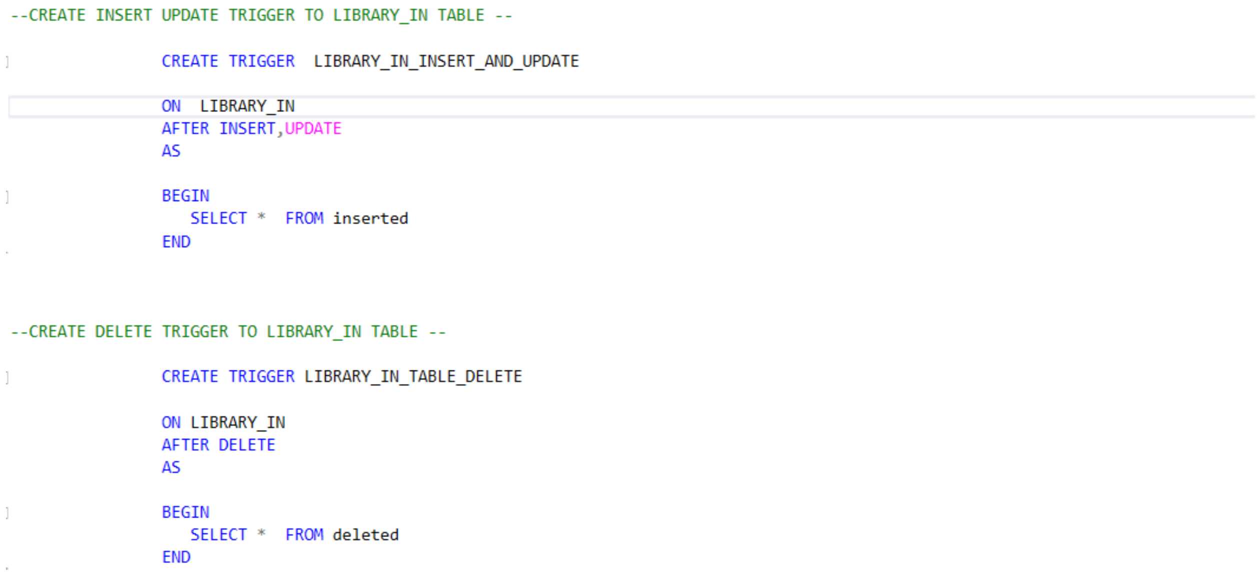

--CREATE DELETE TRIGGER TO GUARANTOR TABLE --

               CREATE TRIGGER GUARANTOR_TABLE_DELETE

               ON GUARANTOR
               AFTER DELETE
               AS

               BEGIN
                  SELECT *  FROM deleted
               END
```

❖ Create insert, update, delete triggers for Library in Table



```
--CREATE INSERT UPDATE TRIGGER TO LIBRARY_IN TABLE --

                CREATE TRIGGER  LIBRARY_IN_INSERT_AND_UPDATE

                ON  LIBRARY_IN
                AFTER INSERT,UPDATE
                AS

                BEGIN
                   SELECT *  FROM inserted
                END

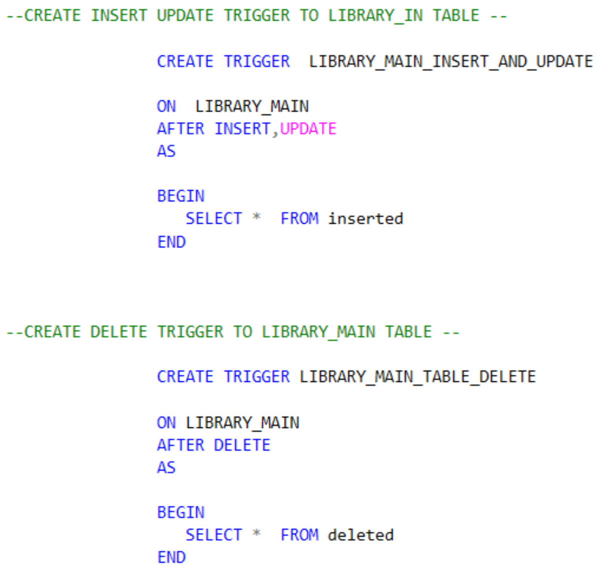

--CREATE DELETE TRIGGER TO LIBRARY_IN TABLE --

                CREATE TRIGGER LIBRARY_IN_TABLE_DELETE

                ON LIBRARY_IN
                AFTER DELETE
                AS

                BEGIN
                   SELECT *  FROM deleted
                END
```

❖ Create insert, update, delete triggers for library main table



```
--CREATE INSERT UPDATE TRIGGER TO LIBRARY_IN TABLE --

                CREATE TRIGGER  LIBRARY_MAIN_INSERT_AND_UPDATE

                ON  LIBRARY_MAIN
                AFTER INSERT,UPDATE
                AS

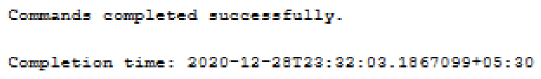
                BEGIN
                   SELECT *  FROM inserted
                END


--CREATE DELETE TRIGGER TO LIBRARY_MAIN TABLE --

                CREATE TRIGGER LIBRARY_MAIN_TABLE_DELETE

                ON LIBRARY_MAIN
                AFTER DELETE
                AS

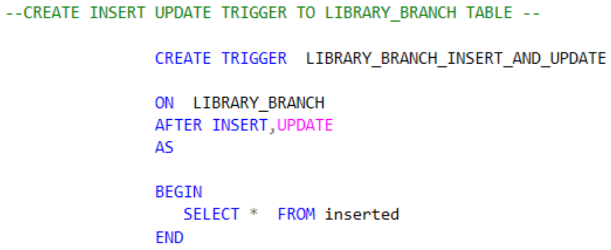
                BEGIN
                   SELECT *  FROM deleted
                END
```



```
Commands completed successfully.

Completion time: 2020-12-28T23:32:03.1867099+05:30
```

❖ Create insert, update, delete triggers for Library Branch Table

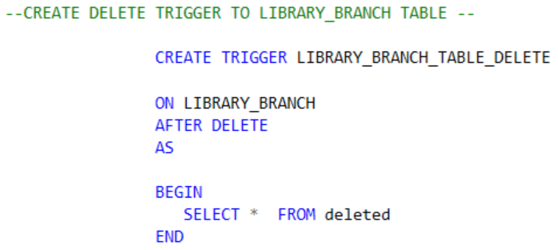


```
--CREATE INSERT UPDATE TRIGGER TO LIBRARY_BRANCH TABLE --

                CREATE TRIGGER  LIBRARY_BRANCH_INSERT_AND_UPDATE

                ON  LIBRARY_BRANCH
                AFTER INSERT,UPDATE
                AS

                BEGIN
                   SELECT *  FROM inserted
                END
```

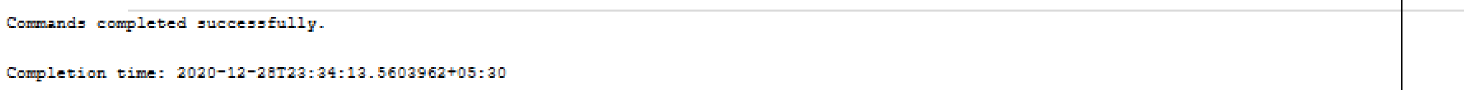


```
--CREATE DELETE TRIGGER TO LIBRARY_BRANCH TABLE --

                CREATE TRIGGER LIBRARY_BRANCH_TABLE_DELETE

                ON LIBRARY_BRANCH
                AFTER DELETE
                AS

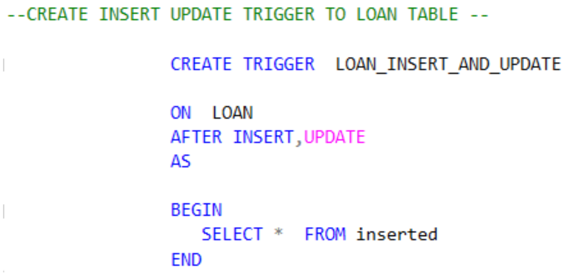
                BEGIN
                   SELECT *  FROM deleted
                END
```



```
Commands completed successfully.

Completion time: 2020-12-28T23:34:13.5603962+05:30
```

❖ Create insert, update, delete triggers for book table Loan Table

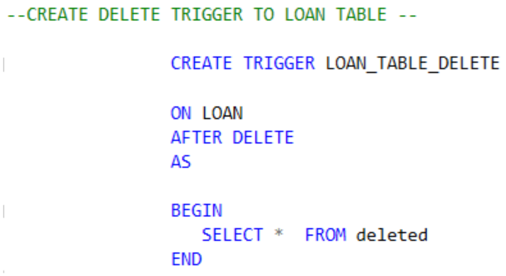


```
--CREATE INSERT UPDATE TRIGGER TO LOAN TABLE --

                CREATE TRIGGER  LOAN_INSERT_AND_UPDATE

                ON  LOAN
                AFTER INSERT,UPDATE
                AS

                BEGIN
                   SELECT *  FROM inserted
                END
```

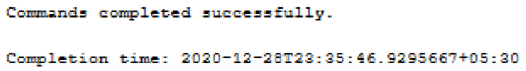


```
--CREATE DELETE TRIGGER TO LOAN TABLE --

                CREATE TRIGGER LOAN_TABLE_DELETE

                ON LOAN
                AFTER DELETE
                AS

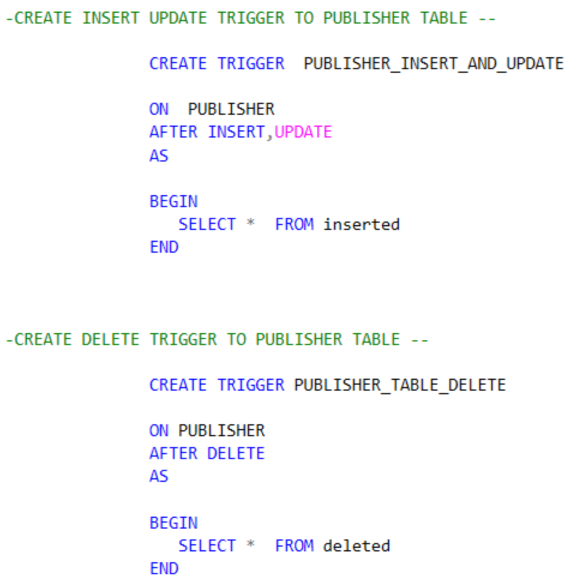
                BEGIN
                   SELECT *  FROM deleted
                END
```



```
Commands completed successfully.

Completion time: 2020-12-28T23:35:46.9295667+05:30
```

❖ Create insert, update, delete triggers for Publisher Table



```
-CREATE INSERT UPDATE TRIGGER TO PUBLISHER TABLE --

               CREATE TRIGGER  PUBLISHER_INSERT_AND_UPDATE

               ON  PUBLISHER
               AFTER INSERT,UPDATE
               AS

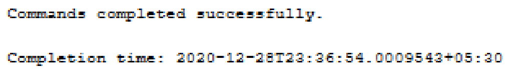
               BEGIN
                  SELECT *  FROM inserted
               END


-CREATE DELETE TRIGGER TO PUBLISHER TABLE --

               CREATE TRIGGER PUBLISHER_TABLE_DELETE

               ON PUBLISHER
               AFTER DELETE
               AS

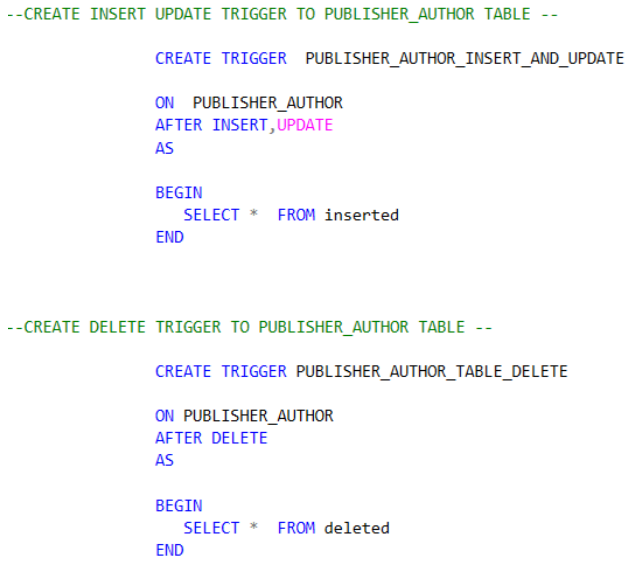
               BEGIN
                  SELECT *  FROM deleted
               END
```



```
Commands completed successfully.

Completion time: 2020-12-28T23:36:54.0009543+05:30
```

❖ Create insert, update, delete triggers for Publisher Author Table



```
--CREATE INSERT UPDATE TRIGGER TO PUBLISHER_AUTHOR TABLE --

               CREATE TRIGGER  PUBLISHER_AUTHOR_INSERT_AND_UPDATE

               ON  PUBLISHER_AUTHOR
               AFTER INSERT,UPDATE
               AS

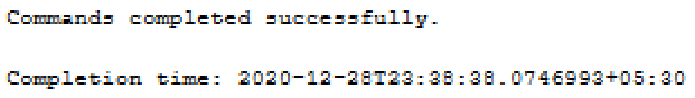
               BEGIN
                  SELECT *  FROM inserted
               END


--CREATE DELETE TRIGGER TO PUBLISHER_AUTHOR TABLE --

               CREATE TRIGGER PUBLISHER_AUTHOR_TABLE_DELETE

               ON PUBLISHER_AUTHOR
               AFTER DELETE
               AS

               BEGIN
                  SELECT *  FROM deleted
               END
```

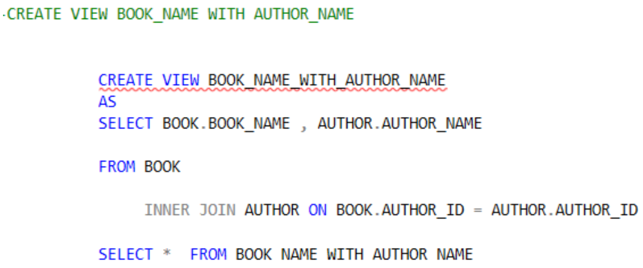


```
Commands completed successfully.

Completion time: 2020-12-28T23:38:38.0746993+05:30
```

3.2. View Statements

- ❖ **Create view statement for get book name with author name**



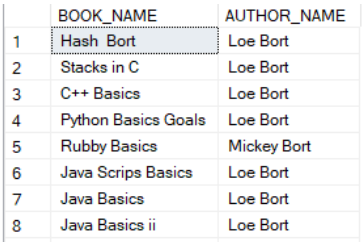
```
·CREATE VIEW BOOK_NAME WITH AUTHOR_NAME

        CREATE VIEW BOOK_NAME_WITH_AUTHOR_NAME
        AS
        SELECT BOOK.BOOK_NAME , AUTHOR.AUTHOR_NAME

        FROM BOOK

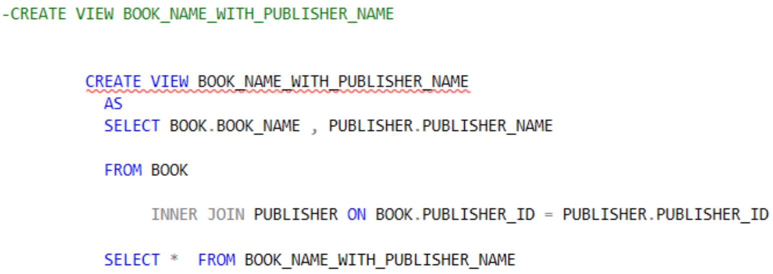
             INNER JOIN AUTHOR ON BOOK.AUTHOR_ID = AUTHOR.AUTHOR_ID

        SELECT *  FROM BOOK NAME WITH AUTHOR NAME
```



	BOOK_NAME	AUTHOR_NAME
1	Hash Bort	Loe Bort
2	Stacks in C	Loe Bort
3	C++ Basics	Loe Bort
4	Python Basics Goals	Loe Bort
5	Rubby Basics	Mickey Bort
6	Java Scrips Basics	Loe Bort
7	Java Basics	Loe Bort
8	Java Basics ii	Loe Bort

- ❖ **Create view statement for get book name with publisher name**



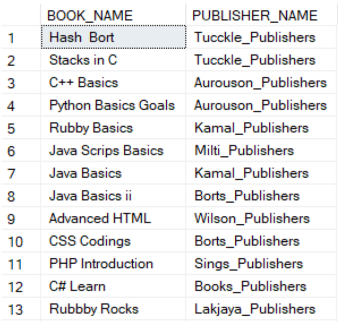
```
-CREATE VIEW BOOK_NAME_WITH_PUBLISHER_NAME

       CREATE VIEW BOOK_NAME_WITH_PUBLISHER_NAME
        AS
        SELECT BOOK.BOOK_NAME , PUBLISHER.PUBLISHER_NAME

        FROM BOOK

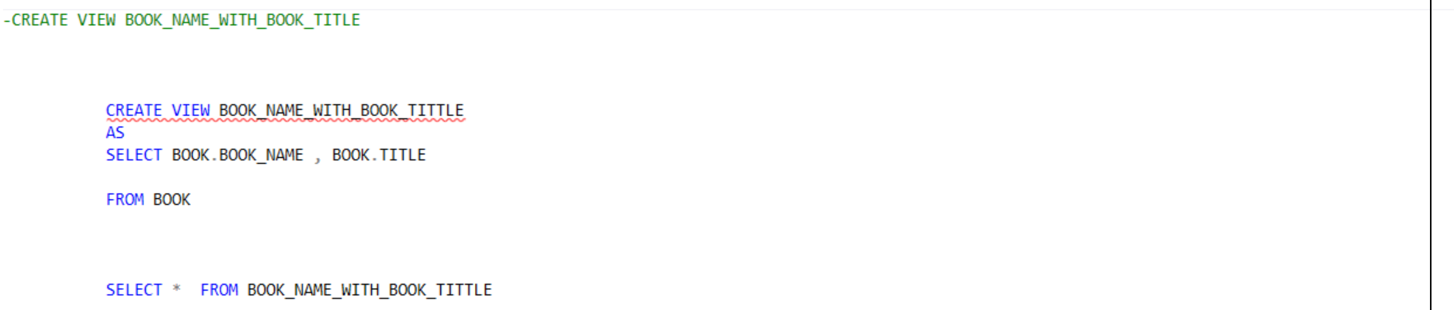
             INNER JOIN PUBLISHER ON BOOK.PUBLISHER_ID = PUBLISHER.PUBLISHER_ID

        SELECT *  FROM BOOK_NAME_WITH_PUBLISHER_NAME
```



	BOOK_NAME	PUBLISHER_NAME
1	Hash Bort	Tucckle_Publishers
2	Stacks in C	Tucckle_Publishers
3	C++ Basics	Aurouson_Publishers
4	Python Basics Goals	Aurouson_Publishers
5	Rubby Basics	Kamal_Publishers
6	Java Scrips Basics	Milti_Publishers
7	Java Basics	Kamal_Publishers
8	Java Basics ii	Borts_Publishers
9	Advanced HTML	Wilson_Publishers
10	CSS Codings	Borts_Publishers
11	PHP Introduction	Sings_Publishers
12	C# Learn	Books_Publishers
13	Rubbby Rocks	Lakjaya_Publishers

❖ Create view statement for get book name with book title

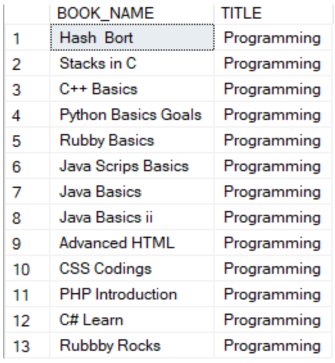


```
-CREATE VIEW BOOK_NAME_WITH_BOOK_TITLE


          CREATE VIEW BOOK_NAME_WITH_BOOK_TITTLE
          AS
          SELECT BOOK.BOOK_NAME , BOOK.TITLE

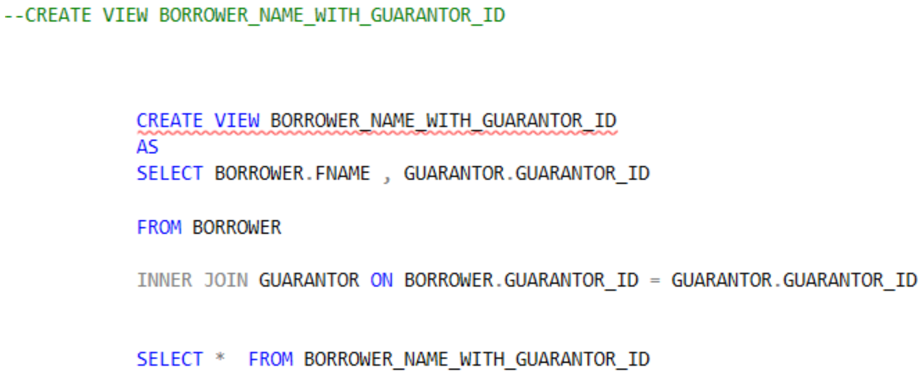
          FROM BOOK


          SELECT *  FROM BOOK_NAME_WITH_BOOK_TITTLE
```



	BOOK_NAME	TITLE
1	Hash Bort	Programming
2	Stacks in C	Programming
3	C++ Basics	Programming
4	Python Basics Goals	Programming
5	Rubby Basics	Programming
6	Java Scrips Basics	Programming
7	Java Basics	Programming
8	Java Basics ii	Programming
9	Advanced HTML	Programming
10	CSS Codings	Programming
11	PHP Introduction	Programming
12	C# Learn	Programming
13	Rubbby Rocks	Programming

❖ Create view statement for get borrower name with guarantor id



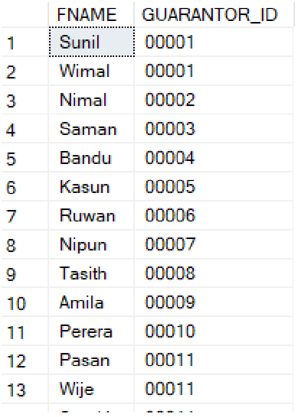
```
--CREATE VIEW BORROWER_NAME_WITH_GUARANTOR_ID


          CREATE VIEW BORROWER_NAME_WITH_GUARANTOR_ID
          AS
          SELECT BORROWER.FNAME , GUARANTOR.GUARANTOR_ID

          FROM BORROWER

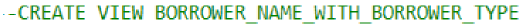
          INNER JOIN GUARANTOR ON BORROWER.GUARANTOR_ID = GUARANTOR.GUARANTOR_ID


          SELECT *  FROM BORROWER_NAME_WITH_GUARANTOR_ID
```

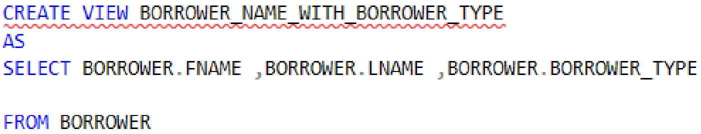


	FNAME	GUARANTOR_ID
1	Sunil	00001
2	Wimal	00001
3	Nimal	00002
4	Saman	00003
5	Bandu	00004
6	Kasun	00005
7	Ruwan	00006
8	Nipun	00007
9	Tasith	00008
10	Amila	00009
11	Perera	00010
12	Pasan	00011
13	Wije	00011

❖ Create view statement for get borrower name with borrower type

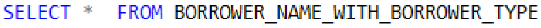


```
--CREATE VIEW BORROWER_NAME_WITH_BORROWER_TYPE
```

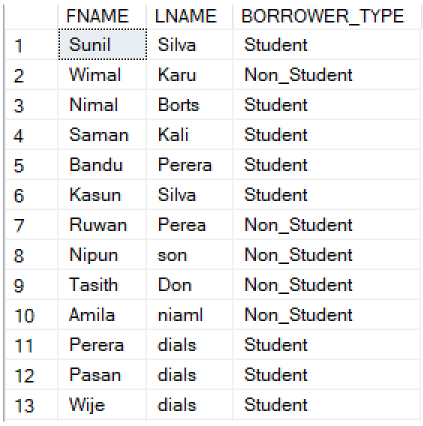


```
CREATE VIEW BORROWER_NAME_WITH_BORROWER_TYPE
AS
SELECT BORROWER.FNAME ,BORROWER.LNAME ,BORROWER.BORROWER_TYPE

FROM BORROWER
```

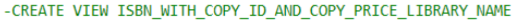


```
SELECT *  FROM BORROWER_NAME_WITH_BORROWER_TYPE
```

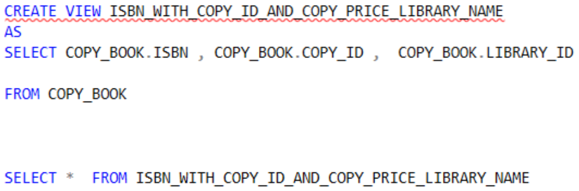


	FNAME	LNAME	BORROWER_TYPE
1	Sunil	Silva	Student
2	Wimal	Karu	Non_Student
3	Nimal	Borts	Student
4	Saman	Kali	Student
5	Bandu	Perera	Student
6	Kasun	Silva	Student
7	Ruwan	Perea	Non_Student
8	Nipun	son	Non_Student
9	Tasith	Don	Non_Student
10	Amila	niaml	Non_Student
11	Perera	dials	Student
12	Pasan	dials	Student
13	Wije	dials	Student

❖ Create view statement for get all copy book details



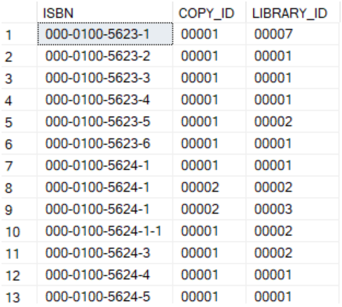
```
-CREATE VIEW ISBN_WITH_COPY_ID_AND_COPY_PRICE_LIBRARY_NAME
```



```
CREATE VIEW ISBN_WITH_COPY_ID_AND_COPY_PRICE_LIBRARY_NAME
AS
SELECT COPY_BOOK.ISBN , COPY_BOOK.COPY_ID ,  COPY_BOOK.LIBRARY_ID

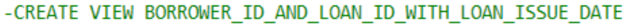
FROM COPY_BOOK


SELECT *  FROM ISBN_WITH_COPY_ID_AND_COPY_PRICE_LIBRARY_NAME
```

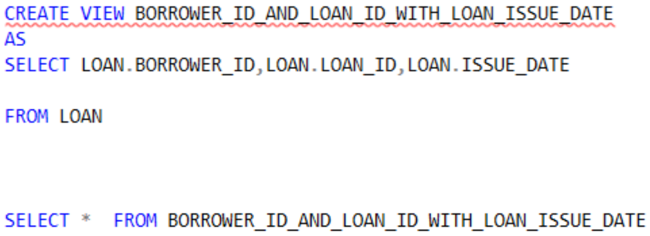


	ISBN	COPY_ID	LIBRARY_ID
1	000-0100-5623-1	00001	00007
2	000-0100-5623-2	00001	00001
3	000-0100-5623-3	00001	00001
4	000-0100-5623-4	00001	00001
5	000-0100-5623-5	00001	00002
6	000-0100-5623-6	00001	00001
7	000-0100-5624-1	00001	00001
8	000-0100-5624-1	00002	00002
9	000-0100-5624-1	00002	00003
10	000-0100-5624-1-1	00001	00002
11	000-0100-5624-3	00001	00002
12	000-0100-5624-4	00001	00001
13	000-0100-5624-5	00001	00001

❖ Create view statement for get borrower id with loan details



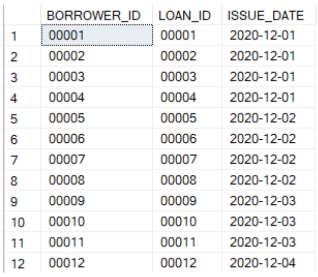
```
-CREATE VIEW BORROWER_ID_AND_LOAN_ID_WITH_LOAN_ISSUE_DATE
```



```
CREATE VIEW BORROWER_ID_AND_LOAN_ID_WITH_LOAN_ISSUE_DATE
AS
SELECT LOAN.BORROWER_ID,LOAN.LOAN_ID,LOAN.ISSUE_DATE

FROM LOAN

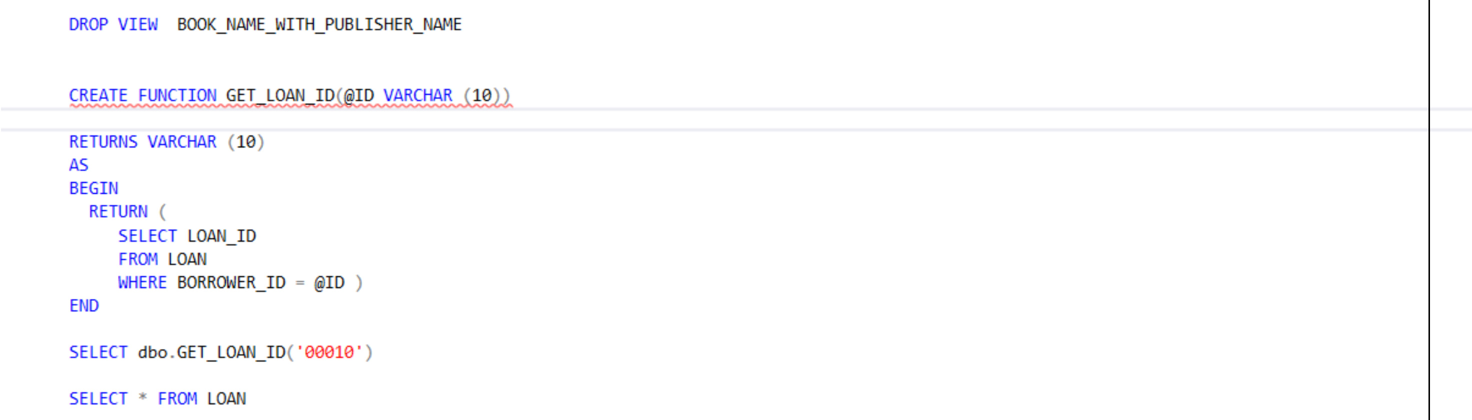

SELECT *  FROM BORROWER_ID_AND_LOAN_ID_WITH_LOAN_ISSUE_DATE
```



	BORROWER_ID	LOAN_ID	ISSUE_DATE
1	00001	00001	2020-12-01
2	00002	00002	2020-12-01
3	00003	00003	2020-12-01
4	00004	00004	2020-12-01
5	00005	00005	2020-12-02
6	00006	00006	2020-12-02
7	00007	00007	2020-12-02
8	00008	00008	2020-12-02
9	00009	00009	2020-12-03
10	00010	00010	2020-12-03
11	00011	00011	2020-12-03
12	00012	00012	2020-12-04

3.3. Function Statements

- ❖ **Create functional statement forget book name with publisher name from borrower id**



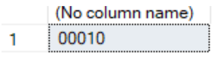
```
DROP VIEW  BOOK_NAME_WITH_PUBLISHER_NAME


CREATE FUNCTION GET_LOAN_ID(@ID VARCHAR (10))

RETURNS VARCHAR (10)
AS
BEGIN
  RETURN (
     SELECT LOAN_ID
     FROM LOAN
     WHERE BORROWER_ID = @ID )
END

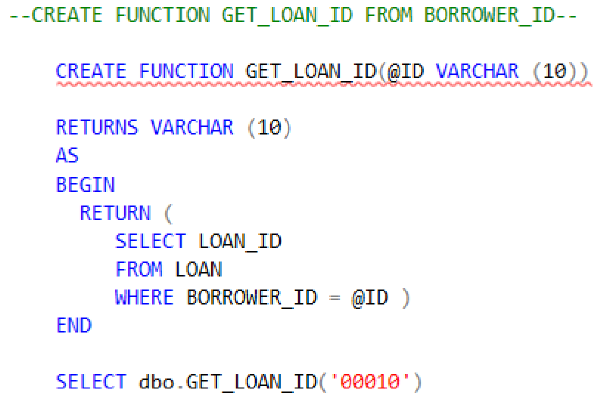
SELECT dbo.GET_LOAN_ID('00010')

SELECT * FROM LOAN
```



```
   (No column name)
1  00010
```

- ❖ **Create functional statement for get loan id from borrower id**

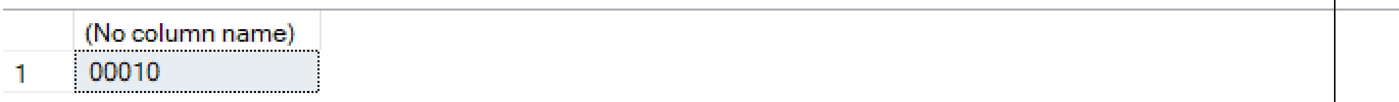


```
--CREATE FUNCTION GET_LOAN_ID FROM BORROWER_ID--

    CREATE FUNCTION GET_LOAN_ID(@ID VARCHAR (10))

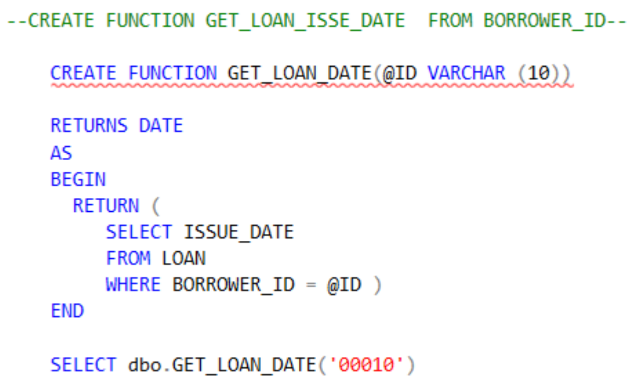
    RETURNS VARCHAR (10)
    AS
    BEGIN
      RETURN (
         SELECT LOAN_ID
         FROM LOAN
         WHERE BORROWER_ID = @ID )
    END

    SELECT dbo.GET_LOAN_ID('00010')
```



```
   (No column name)
1  00010
```

- ❖ **Create functional statement for get loan date from borrower id**

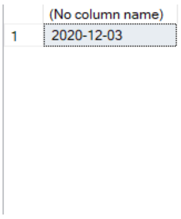


```
--CREATE FUNCTION GET_LOAN_ISSE_DATE  FROM BORROWER_ID--

  CREATE FUNCTION GET_LOAN_DATE(@ID VARCHAR (10))

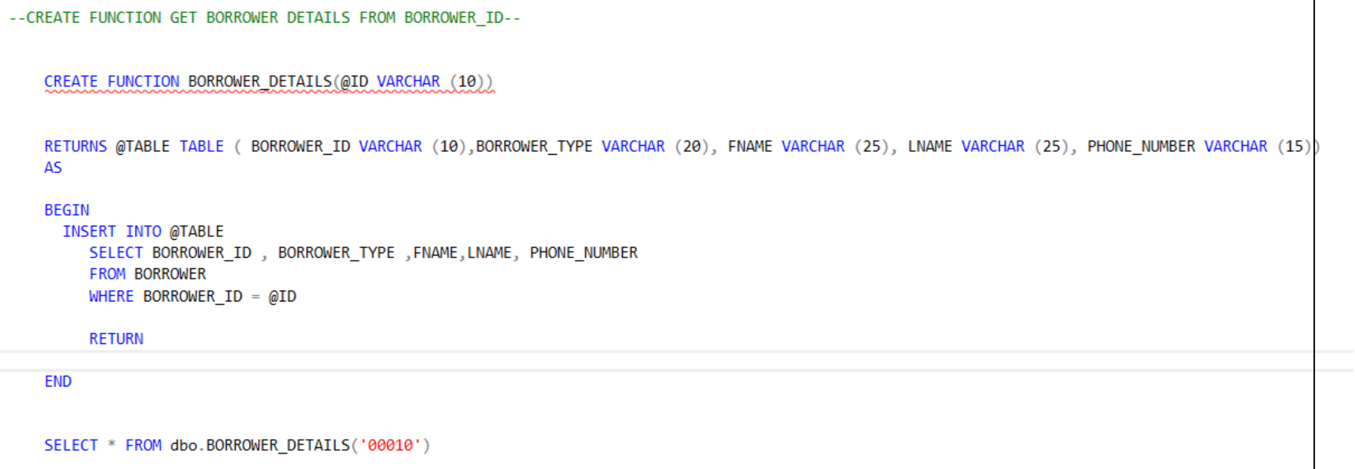
  RETURNS DATE
  AS
  BEGIN
    RETURN (
       SELECT ISSUE_DATE
       FROM LOAN
       WHERE BORROWER_ID = @ID )
  END

  SELECT dbo.GET_LOAN_DATE('00010')
```



	(No column name)
1	2020-12-03

- ❖ **Create functional statement for get borrower details from borrower id**



```
--CREATE FUNCTION GET BORROWER DETAILS FROM BORROWER_ID--

   CREATE FUNCTION BORROWER_DETAILS(@ID VARCHAR (10))

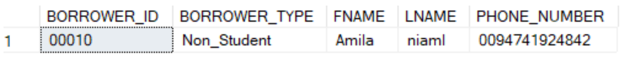
   RETURNS @TABLE TABLE ( BORROWER_ID VARCHAR (10),BORROWER_TYPE VARCHAR (20), FNAME VARCHAR (25), LNAME VARCHAR (25), PHONE_NUMBER VARCHAR (15))
   AS

   BEGIN
     INSERT INTO @TABLE
        SELECT BORROWER_ID , BORROWER_TYPE ,FNAME,LNAME, PHONE_NUMBER
        FROM BORROWER
        WHERE BORROWER_ID = @ID

        RETURN

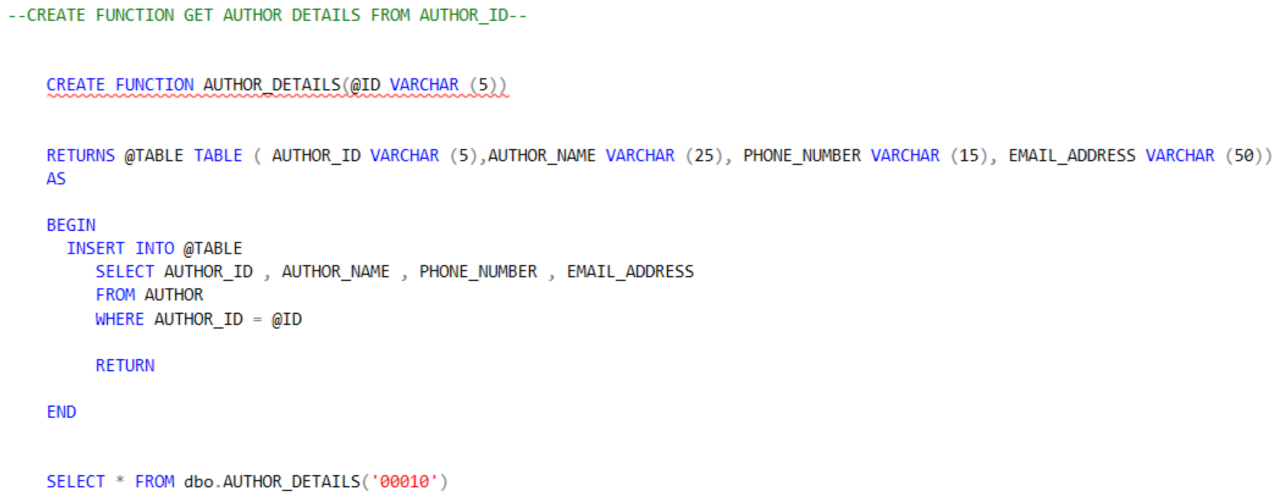
   END

   SELECT * FROM dbo.BORROWER_DETAILS('00010')
```



	BORROWER_ID	BORROWER_TYPE	FNAME	LNAME	PHONE_NUMBER
1	00010	Non_Student	Amila	niaml	0094741924842

❖ Create functional statement for get author details from author id



```
--CREATE FUNCTION GET AUTHOR DETAILS FROM AUTHOR_ID--

    CREATE FUNCTION AUTHOR_DETAILS(@ID VARCHAR (5))

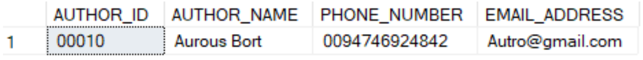
    RETURNS @TABLE TABLE ( AUTHOR_ID VARCHAR (5),AUTHOR_NAME VARCHAR (25), PHONE_NUMBER VARCHAR (15), EMAIL_ADDRESS VARCHAR (50))
    AS

    BEGIN
      INSERT INTO @TABLE
         SELECT AUTHOR_ID , AUTHOR_NAME , PHONE_NUMBER , EMAIL_ADDRESS
         FROM AUTHOR
         WHERE AUTHOR_ID = @ID

         RETURN

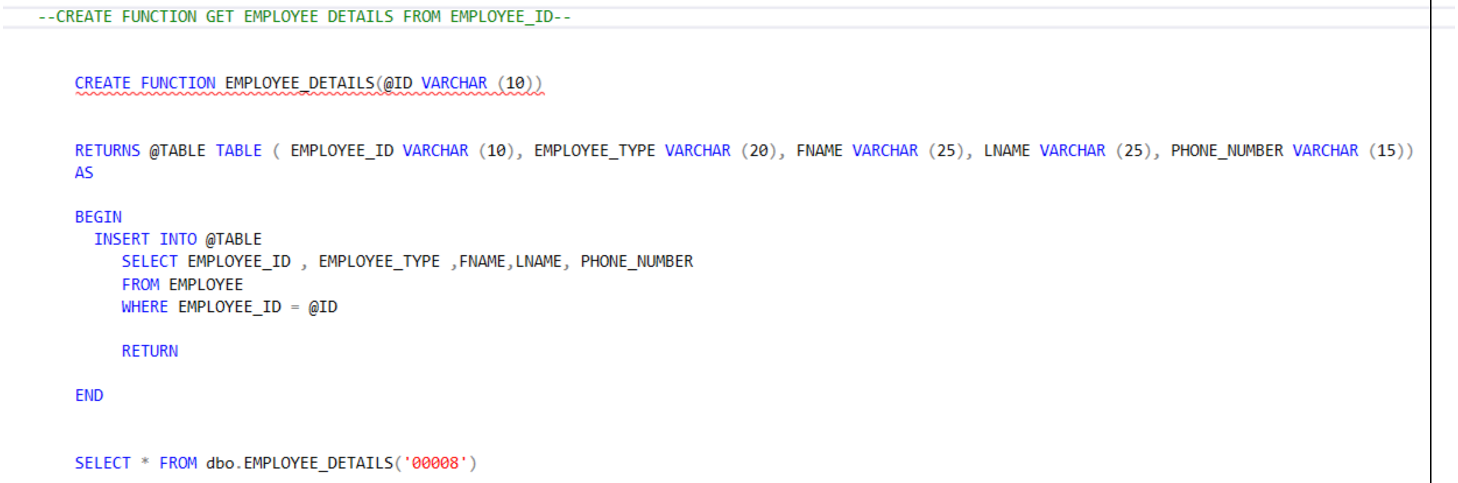
    END


    SELECT * FROM dbo.AUTHOR_DETAILS('00010')
```



	AUTHOR_ID	AUTHOR_NAME	PHONE_NUMBER	EMAIL_ADDRESS
1	00010	Aurous Bort	0094746924842	Autro@gmail.com

❖ Create functional statement for get employee details from employee id



```
--CREATE FUNCTION GET EMPLOYEE DETAILS FROM EMPLOYEE_ID--

    CREATE FUNCTION EMPLOYEE_DETAILS(@ID VARCHAR (10))

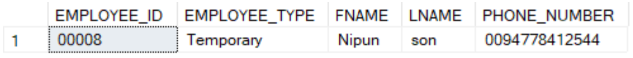
    RETURNS @TABLE TABLE ( EMPLOYEE_ID VARCHAR (10), EMPLOYEE_TYPE VARCHAR (20), FNAME VARCHAR (25), LNAME VARCHAR (25), PHONE_NUMBER VARCHAR (15))
    AS

    BEGIN
      INSERT INTO @TABLE
         SELECT EMPLOYEE_ID , EMPLOYEE_TYPE ,FNAME,LNAME, PHONE_NUMBER
         FROM EMPLOYEE
         WHERE EMPLOYEE_ID = @ID

         RETURN

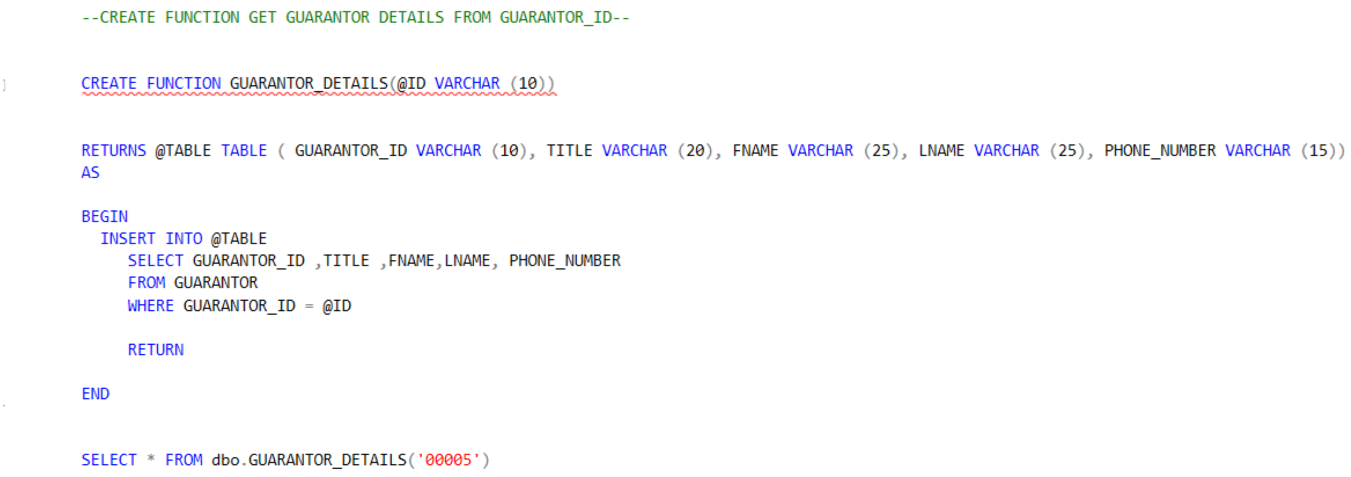
    END


    SELECT * FROM dbo.EMPLOYEE_DETAILS('00008')
```



	EMPLOYEE_ID	EMPLOYEE_TYPE	FNAME	LNAME	PHONE_NUMBER
1	00008	Temporary	Nipun	son	0094778412544

❖ Create functional statement for get guarantor details from guarantor id



```
--CREATE FUNCTION GET GUARANTOR DETAILS FROM GUARANTOR_ID--

CREATE FUNCTION GUARANTOR_DETAILS(@ID VARCHAR (10))

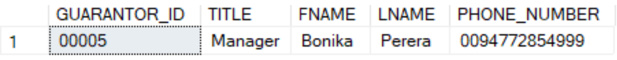
RETURNS @TABLE TABLE ( GUARANTOR_ID VARCHAR (10), TITLE VARCHAR (20), FNAME VARCHAR (25), LNAME VARCHAR (25), PHONE_NUMBER VARCHAR (15))
AS

BEGIN
  INSERT INTO @TABLE
     SELECT GUARANTOR_ID ,TITLE ,FNAME,LNAME, PHONE_NUMBER
     FROM GUARANTOR
     WHERE GUARANTOR_ID = @ID

     RETURN

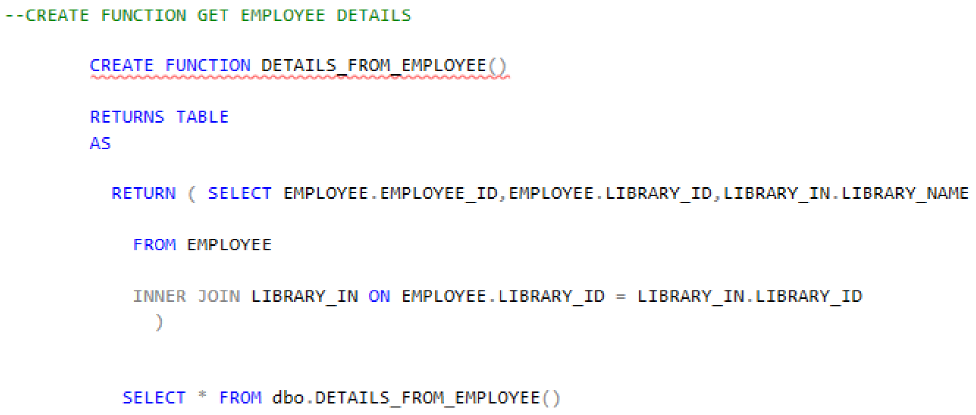
END

SELECT * FROM dbo.GUARANTOR_DETAILS('00005')
```



	GUARANTOR_ID	TITLE	FNAME	LNAME	PHONE_NUMBER
1	00005	Manager	Bonika	Perera	0094772854999

❖ Create functional statement for get employee details with inner joint library details



```
--CREATE FUNCTION GET EMPLOYEE DETAILS

        CREATE FUNCTION DETAILS_FROM_EMPLOYEE()

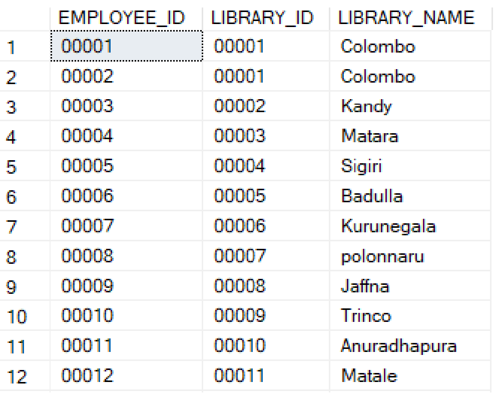
        RETURNS TABLE
        AS

          RETURN ( SELECT EMPLOYEE.EMPLOYEE_ID,EMPLOYEE.LIBRARY_ID,LIBRARY_IN.LIBRARY_NAME

            FROM EMPLOYEE

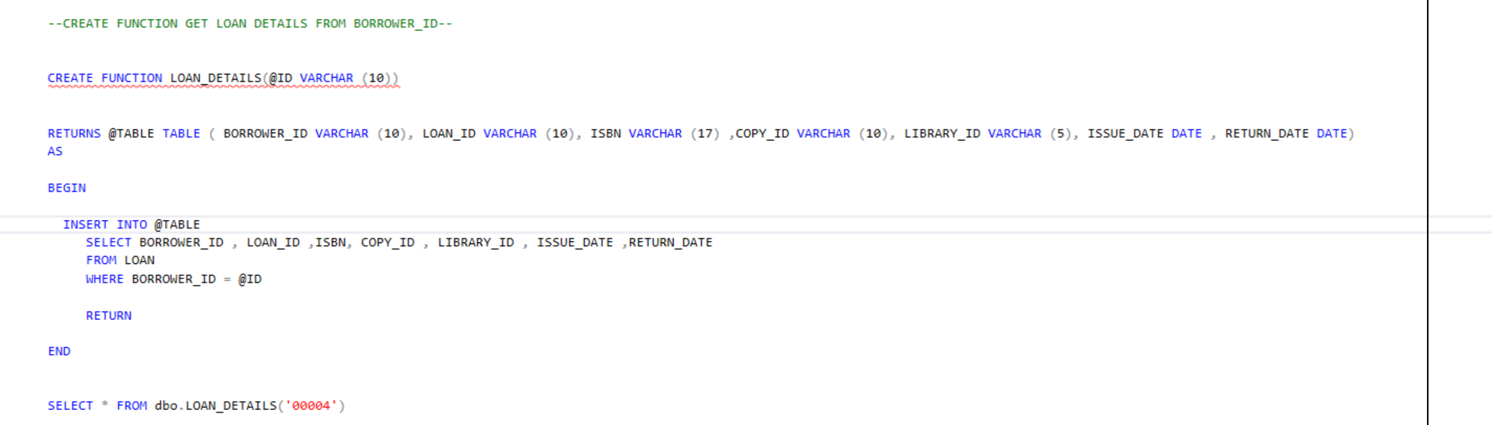
            INNER JOIN LIBRARY_IN ON EMPLOYEE.LIBRARY_ID = LIBRARY_IN.LIBRARY_ID
              )


         SELECT * FROM dbo.DETAILS_FROM_EMPLOYEE()
```



	EMPLOYEE_ID	LIBRARY_ID	LIBRARY_NAME
1	00001	00001	Colombo
2	00002	00001	Colombo
3	00003	00002	Kandy
4	00004	00003	Matara
5	00005	00004	Sigiri
6	00006	00005	Badulla
7	00007	00006	Kurunegala
8	00008	00007	polonnaru
9	00009	00008	Jaffna
10	00010	00009	Trinco
11	00011	00010	Anuradhapura
12	00012	00011	Matale

❖ Create functional statement for get loan details from borrower id



```
--CREATE FUNCTION GET LOAN DETAILS FROM BORROWER_ID--


CREATE FUNCTION LOAN_DETAILS(@ID VARCHAR (10))


RETURNS @TABLE TABLE ( BORROWER_ID VARCHAR (10), LOAN_ID VARCHAR (10), ISBN VARCHAR (17) ,COPY_ID VARCHAR (10), LIBRARY_ID VARCHAR (5), ISSUE_DATE DATE , RETURN_DATE DATE)
AS

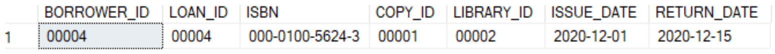
BEGIN

  INSERT INTO @TABLE
     SELECT BORROWER_ID , LOAN_ID ,ISBN, COPY_ID , LIBRARY_ID , ISSUE_DATE ,RETURN_DATE
     FROM LOAN
     WHERE BORROWER_ID = @ID

     RETURN

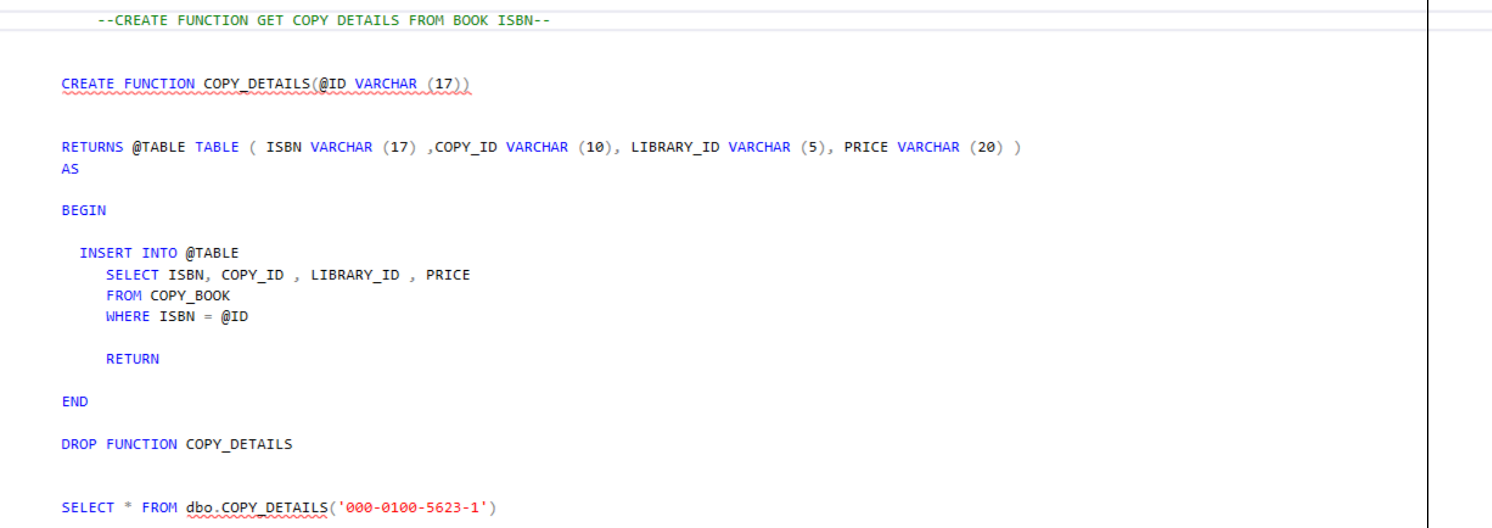
END


SELECT * FROM dbo.LOAN_DETAILS('00004')
```



	BORROWER_ID	LOAN_ID	ISBN	COPY_ID	LIBRARY_ID	ISSUE_DATE	RETURN_DATE
1	00004	00004	000-0100-5624-3	00001	00002	2020-12-01	2020-12-15

❖ Create functional statement for get copy details from isbn



```
      --CREATE FUNCTION GET COPY DETAILS FROM BOOK ISBN--


CREATE FUNCTION COPY_DETAILS(@ID VARCHAR (17))


RETURNS @TABLE TABLE ( ISBN VARCHAR (17) ,COPY_ID VARCHAR (10), LIBRARY_ID VARCHAR (5), PRICE VARCHAR (20) )
AS

BEGIN

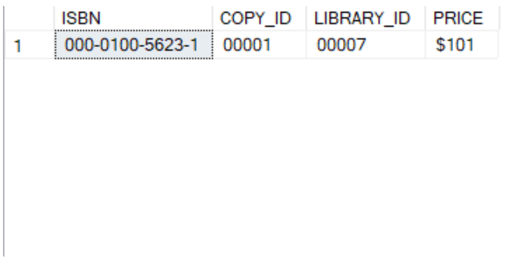
  INSERT INTO @TABLE
     SELECT ISBN, COPY_ID , LIBRARY_ID , PRICE
     FROM COPY_BOOK
     WHERE ISBN = @ID

     RETURN

END

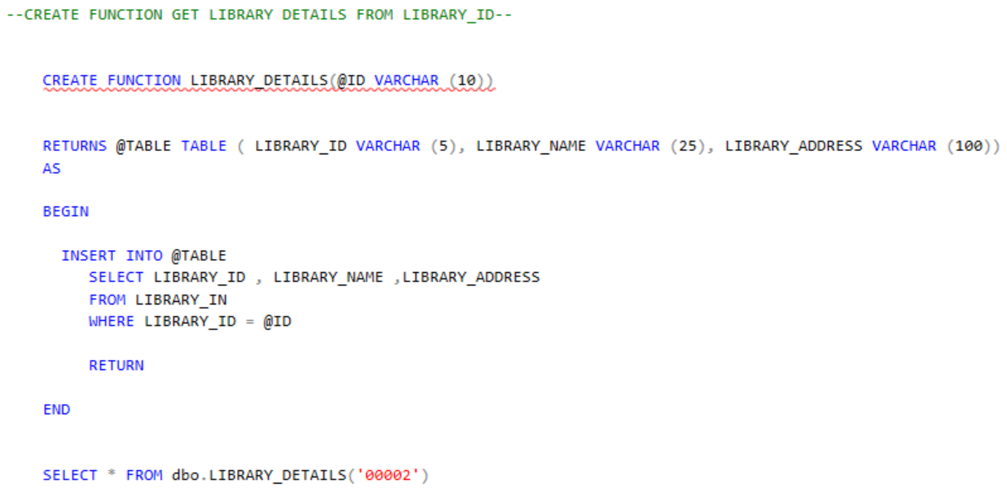
DROP FUNCTION COPY_DETAILS


SELECT * FROM dbo.COPY_DETAILS('000-0100-5623-1')
```



	ISBN	COPY_ID	LIBRARY_ID	PRICE
1	000-0100-5623-1	00001	00007	$101

❖ Create functional statement for get library details from library id



```
--CREATE FUNCTION GET LIBRARY DETAILS FROM LIBRARY_ID--


    CREATE FUNCTION LIBRARY_DETAILS(@ID VARCHAR (10))


    RETURNS @TABLE TABLE ( LIBRARY_ID VARCHAR (5), LIBRARY_NAME VARCHAR (25), LIBRARY_ADDRESS VARCHAR (100))
    AS

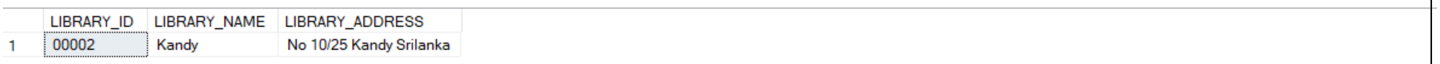
    BEGIN

      INSERT INTO @TABLE
         SELECT LIBRARY_ID , LIBRARY_NAME ,LIBRARY_ADDRESS
         FROM LIBRARY_IN
         WHERE LIBRARY_ID = @ID

         RETURN

    END

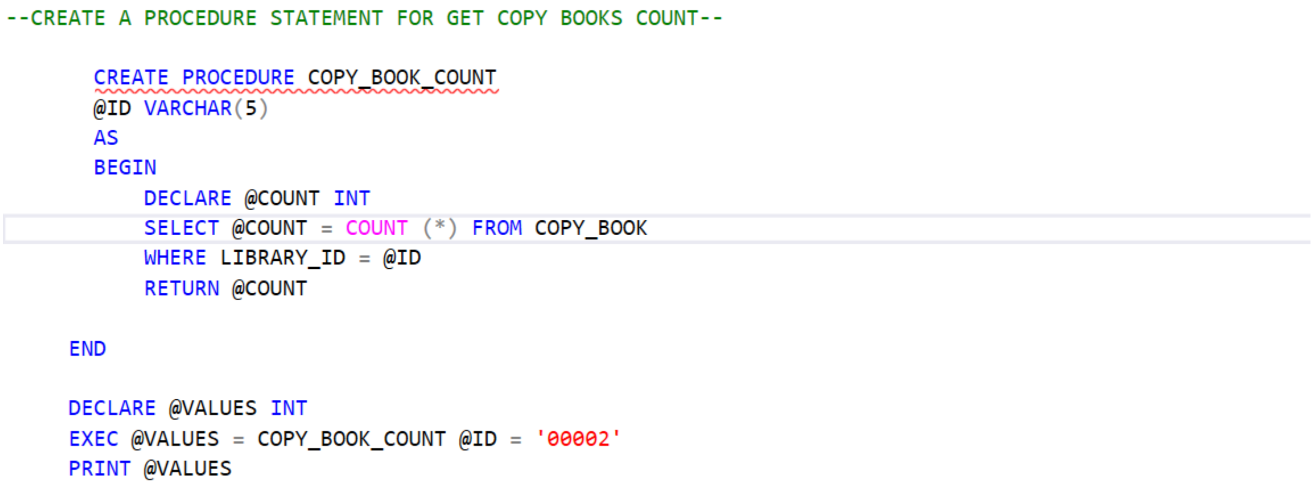

    SELECT * FROM dbo.LIBRARY_DETAILS('00002')
```



	LIBRARY_ID	LIBRARY_NAME	LIBRARY_ADDRESS
1	00002	Kandy	No 10/25 Kandy Srilanka

3.4. Procedure Statements

- **Create procedure statement for get copy book counts form library id**

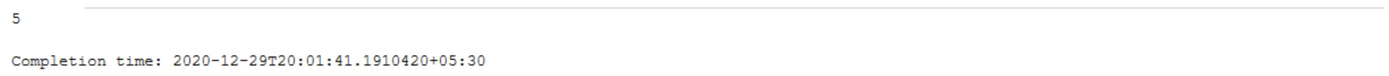


```
--CREATE A PROCEDURE STATEMENT FOR GET COPY BOOKS COUNT--

       CREATE PROCEDURE COPY_BOOK_COUNT
       @ID VARCHAR(5)
       AS
       BEGIN
           DECLARE @COUNT INT
           SELECT @COUNT = COUNT (*) FROM COPY_BOOK
           WHERE LIBRARY_ID = @ID
           RETURN @COUNT

     END

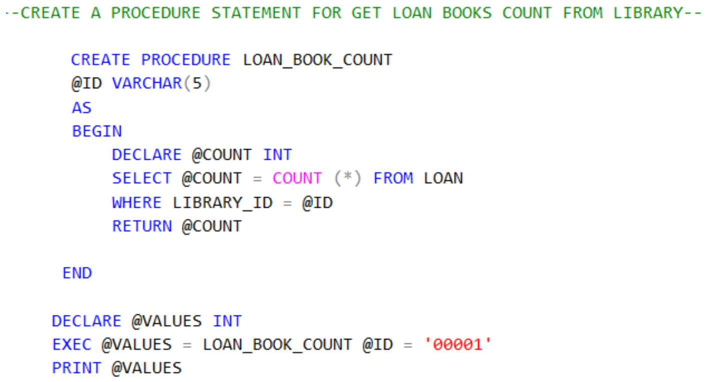
     DECLARE @VALUES INT
     EXEC @VALUES = COPY_BOOK_COUNT @ID = '00002'
     PRINT @VALUES
```



```
5

Completion time: 2020-12-29T20:01:41.1910420+05:30
```

- **Create functional statement for get loan books counts from library id**

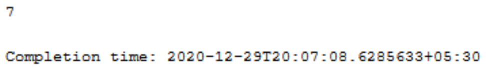


```
--CREATE A PROCEDURE STATEMENT FOR GET LOAN BOOKS COUNT FROM LIBRARY--

      CREATE PROCEDURE LOAN_BOOK_COUNT
      @ID VARCHAR(5)
      AS
      BEGIN
          DECLARE @COUNT INT
          SELECT @COUNT = COUNT (*) FROM LOAN
          WHERE LIBRARY_ID = @ID
          RETURN @COUNT

     END

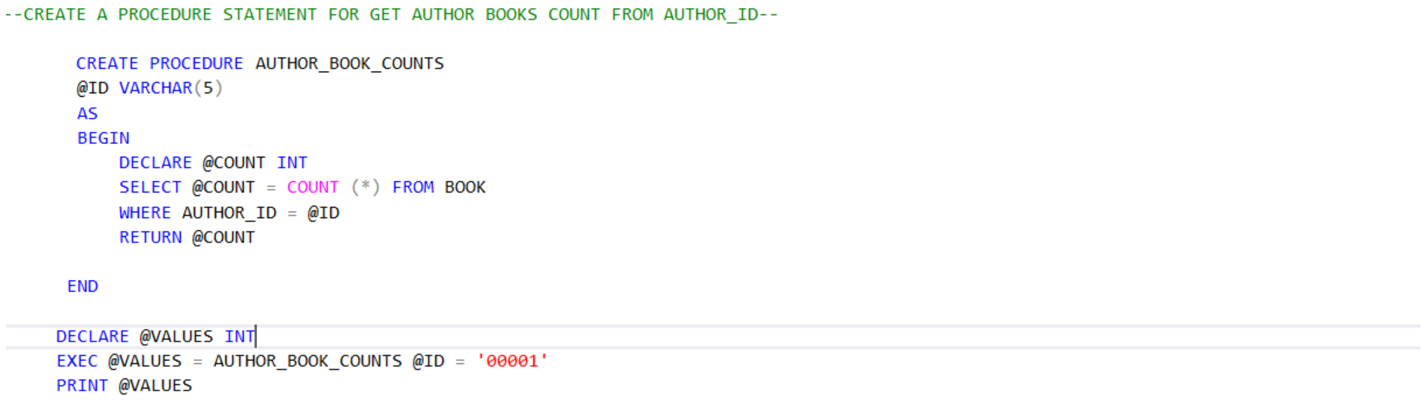
    DECLARE @VALUES INT
    EXEC @VALUES = LOAN_BOOK_COUNT @ID = '00001'
    PRINT @VALUES
```



```
7

Completion time: 2020-12-29T20:07:08.6285633+05:30
```

❖ Create functional statement for get details from guarantor id

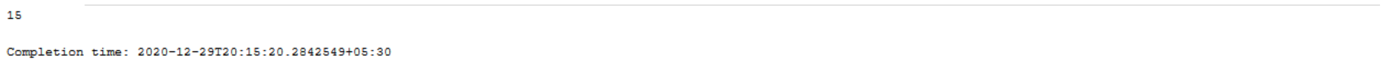


```
--CREATE A PROCEDURE STATEMENT FOR GET AUTHOR BOOKS COUNT FROM AUTHOR_ID--

      CREATE PROCEDURE AUTHOR_BOOK_COUNTS
      @ID VARCHAR(5)
      AS
      BEGIN
          DECLARE @COUNT INT
          SELECT @COUNT = COUNT (*) FROM BOOK
          WHERE AUTHOR_ID = @ID
          RETURN @COUNT

     END

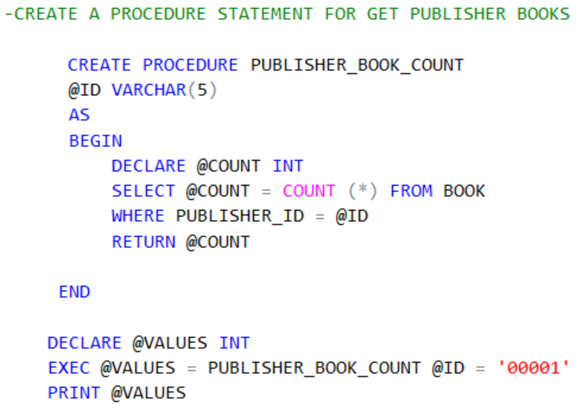
    DECLARE @VALUES INT
    EXEC @VALUES = AUTHOR_BOOK_COUNTS @ID = '00001'
    PRINT @VALUES
```



```
15

Completion time: 2020-12-29T20:15:20.2842549+05:30
```

❖ Create functional statement for get publisher book count from publisher id

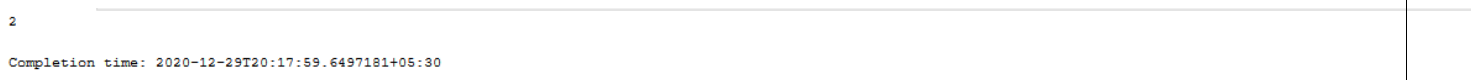


```
-CREATE A PROCEDURE STATEMENT FOR GET PUBLISHER BOOKS COUNT FROM PUBLISHER_ID--

      CREATE PROCEDURE PUBLISHER_BOOK_COUNT
      @ID VARCHAR(5)
      AS
      BEGIN
          DECLARE @COUNT INT
          SELECT @COUNT = COUNT (*) FROM BOOK
          WHERE PUBLISHER_ID = @ID
          RETURN @COUNT

     END

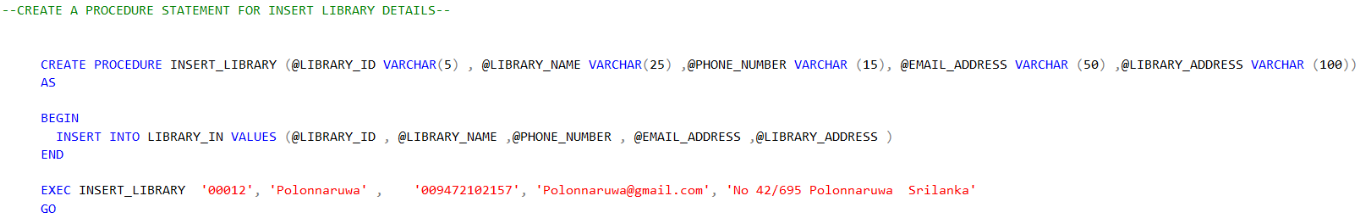
    DECLARE @VALUES INT
    EXEC @VALUES = PUBLISHER_BOOK_COUNT @ID = '00001'
    PRINT @VALUES
```



```
2

Completion time: 2020-12-29T20:17:59.6497181+05:30
```

❖ Create functional statement for insert library details

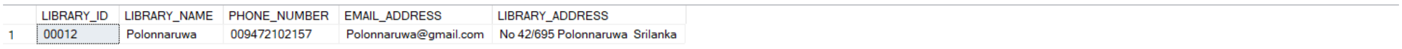


```
--CREATE A PROCEDURE STATEMENT FOR INSERT LIBRARY DETAILS--

     CREATE PROCEDURE INSERT_LIBRARY (@LIBRARY_ID VARCHAR(5) , @LIBRARY_NAME VARCHAR(25) ,@PHONE_NUMBER VARCHAR (15), @EMAIL_ADDRESS VARCHAR (50) ,@LIBRARY_ADDRESS VARCHAR (100))
     AS

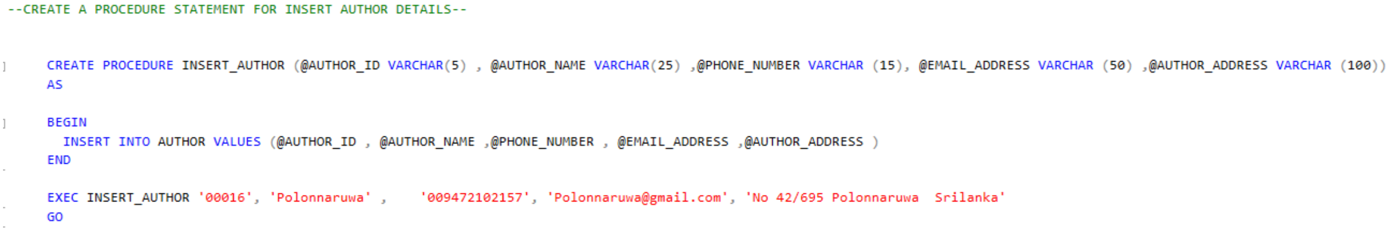
     BEGIN
       INSERT INTO LIBRARY_IN VALUES (@LIBRARY_ID , @LIBRARY_NAME ,@PHONE_NUMBER , @EMAIL_ADDRESS ,@LIBRARY_ADDRESS )
     END

     EXEC INSERT_LIBRARY  '00012', 'Polonnaruwa' ,    '009472102157', 'Polonnaruwa@gmail.com', 'No 42/695 Polonnaruwa  Srilanka'
     GO
```



	LIBRARY_ID	LIBRARY_NAME	PHONE_NUMBER	EMAIL_ADDRESS	LIBRARY_ADDRESS
1	00012	Polonnaruwa	009472102157	Polonnaruwa@gmail.com	No 42/695 Polonnaruwa Srilanka

❖ Create functional statement for insert author details

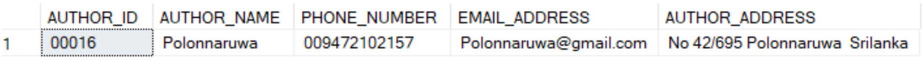


```
--CREATE A PROCEDURE STATEMENT FOR INSERT AUTHOR DETAILS--

     CREATE PROCEDURE INSERT_AUTHOR (@AUTHOR_ID VARCHAR(5) , @AUTHOR_NAME VARCHAR(25) ,@PHONE_NUMBER VARCHAR (15), @EMAIL_ADDRESS VARCHAR (50) ,@AUTHOR_ADDRESS VARCHAR (100))
     AS

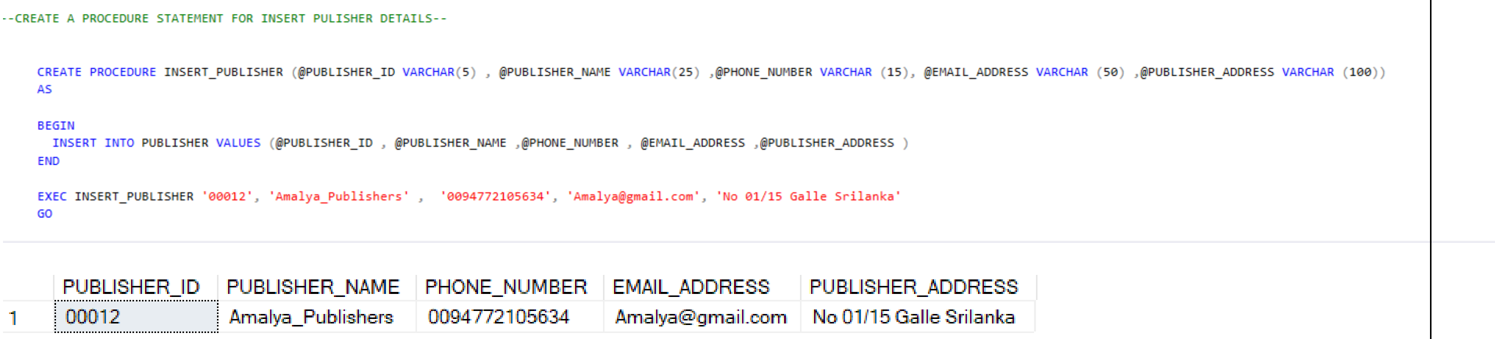
     BEGIN
       INSERT INTO AUTHOR VALUES (@AUTHOR_ID , @AUTHOR_NAME ,@PHONE_NUMBER , @EMAIL_ADDRESS ,@AUTHOR_ADDRESS )
     END

     EXEC INSERT_AUTHOR '00016', 'Polonnaruwa' ,    '009472102157', 'Polonnaruwa@gmail.com', 'No 42/695 Polonnaruwa  Srilanka'
     GO
```



	AUTHOR_ID	AUTHOR_NAME	PHONE_NUMBER	EMAIL_ADDRESS	AUTHOR_ADDRESS
1	00016	Polonnaruwa	009472102157	Polonnaruwa@gmail.com	No 42/695 Polonnaruwa Srilanka

❖ Create functional statement for insert publisher details



```
--CREATE A PROCEDURE STATEMENT FOR INSERT PULISHER DETAILS--

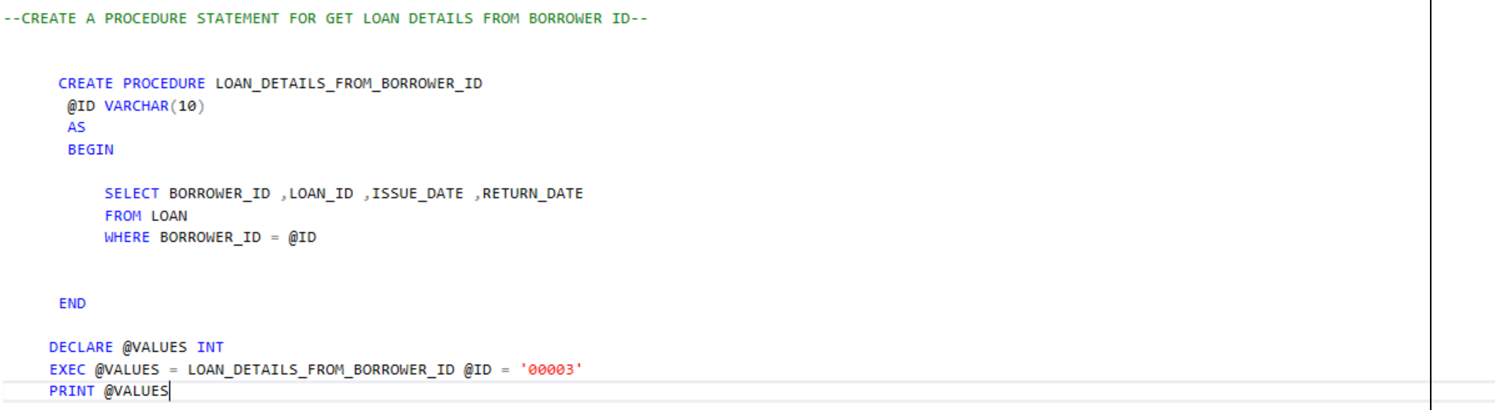

    CREATE PROCEDURE INSERT_PUBLISHER (@PUBLISHER_ID VARCHAR(5) , @PUBLISHER_NAME VARCHAR(25) ,@PHONE_NUMBER VARCHAR (15), @EMAIL_ADDRESS VARCHAR (50) ,@PUBLISHER_ADDRESS VARCHAR (100))
    AS

    BEGIN
      INSERT INTO PUBLISHER VALUES (@PUBLISHER_ID , @PUBLISHER_NAME ,@PHONE_NUMBER , @EMAIL_ADDRESS ,@PUBLISHER_ADDRESS )
    END

    EXEC INSERT_PUBLISHER '00012', 'Amalya_Publishers' ,  '0094772105634', 'Amalya@gmail.com', 'No 01/15 Galle Srilanka'
    GO
```

	PUBLISHER_ID	PUBLISHER_NAME	PHONE_NUMBER	EMAIL_ADDRESS	PUBLISHER_ADDRESS
1	00012	Amalya_Publishers	0094772105634	Amalya@gmail.com	No 01/15 Galle Srilanka

❖ Create functional statement for get loan details from borrower id



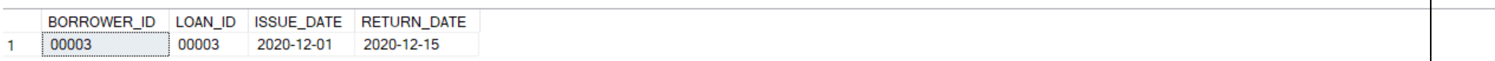
```
--CREATE A PROCEDURE STATEMENT FOR GET LOAN DETAILS FROM BORROWER ID--


      CREATE PROCEDURE LOAN_DETAILS_FROM_BORROWER_ID
       @ID VARCHAR(10)
       AS
       BEGIN

           SELECT BORROWER_ID ,LOAN_ID ,ISSUE_DATE ,RETURN_DATE
           FROM LOAN
           WHERE BORROWER_ID = @ID


      END

     DECLARE @VALUES INT
     EXEC @VALUES = LOAN_DETAILS_FROM_BORROWER_ID @ID = '00003'
     PRINT @VALUES
```



	BORROWER_ID	LOAN_ID	ISSUE_DATE	RETURN_DATE
1	00003	00003	2020-12-01	2020-12-15

SECTION 04

4.1. Critical Evaluation

The framework project was intended to interact divisions of libraries and monetarize all library transactions. The aim is to provide users with accurate and safe systems. The system collects and stores data from library branches, produces views of the appropriate tables, triggers, and creates user-defined data presentation functions.

In this database management system, there is no admin management part. there is no method to calculate borrower fee for each loan book. To determine penalties for users' due date, the device has complex process incidents. You will see the there is no relevant library branch who must pay the user a fine. The system has a way to correctly classify what book copy orders are in the associated branch. There is no reliable way for book loan days calculate and show to information. This is a shortcoming of our method.

4.2. Future Implementations

- To create administer portal for this database management system.
- To create borrower loan fee calculated method.
- To create method which can notify loan time expired borrowers’ details.
- To add more create trigger statements, create function statements for the user defined functions, create view statements for the database views, create procedure statements for efficient users’ task.
- To build a login facility for users; create a method for all users during library hours to check their accounts and change their account options during the day.
- Finally, we hope to design user friendly desktop application for this database management system.

References

- Saravanabavan, N., 2021. *Shibboleth Single Sign-On Service - Loading Session Information*. [online] Dle.plymouth.ac.uk. Available at: <https://dle.plymouth.ac.uk/course/view.php?id=49329> [Accessed 3 January 2021].

- W3schools.com. 2021. *SQL Tutorial*. [online] Available at: <https://www.w3schools.com/sql/> [Accessed 3 January 2021].

- Tutorialspoint.com. 2021. *DBMS - Normalization - Tutorialspoint*. [online] Available at: <https://www.tutorialspoint.com/dbms/database_normalization.htm> [Accessed 3 January 2021].

END