

## **MADE BY: HARSH VARDHAN (21EEB0A27)**

This project database exhibits how the books are issued and returned to library in organised manner and how the library works

### **ENTITIES:**

1. BRANCH
2. EMPLOYEES
3. CUSTOMER
4. BOOKS
5. ISSUECARD
6. RETURNCARD

### **Normalisation And Functional Dependencies:**

The tables we created in this project are all in BCNF normal form:

1) In Table BOOKS:

ISBN IS THE PRIMARY KEY AND BRANCH\_NO AS FOREIGN KEY  
REFERENCES TO BRANCH TABLE

2) In Table BRANCH:

BRANCH\_NO IS THE PRIMARY KEY

3) In Table EMPLOYEES:

EMP\_ID IS THE PRIMARY KEY AND BRANCH\_NO AS FOREIGN KEY  
REFERENCES TO BRANCH TABLE

4) In Table CUSTOMER:

CUSTOMER\_ID IS THE PRIMARY KEY

5) In Table ISSUECARD:

ISSUE\_ID IS THE PRIMARY KEY AND CUSTOMER\_ID IS FOREIGN KEY  
REFERENCINGTO CUSTOMER TABLE.

6) In Table RETURNCARD:

RETURN\_ID IS THE PRIMARY KEY AND CUSTOMER\_ID IS FOREIGN  
KEY REFERENCINGTO CUSTOMER TABLE.

# Creating Database using MySQL

```
CREATE DATABASE LIBRARY;
```

```
USE LIBRARY;
```

## BRANCH TABLE

```
CREATE TABLE BRANCH(  
    BRANCH_NO INT PRIMARY KEY,  
    MANAGER_ID INT,  
    B_ADDRESS VARCHAR(25)  
);
```

## BOOKS TABLE

```
CREATE TABLE BOOKS(  
    ISBN INT PRIMARY KEY,  
    GENRE VARCHAR(25),  
    TITLE VARCHAR(25),  
    PUBLISHER VARCHAR(25),  
    PRICE INT,  
    AUTHOR VARCHAR(25),  
    STAT VARCHAR(25),  
    BRANCH_NO INT,  
    FOREIGN KEY (BRANCH_NO) REFERENCES BRANCH(BRANCH_NO)  
);
```

## EMPLOYEES TABLE

```
CREATE TABLE EMPLOYEES(  
    EMP_ID INT PRIMARY KEY,  
    SALARY INT,  
    DES VARCHAR(25),  
    EMP_NAME VARCHAR(25),  
    BRANCH_NO INT,  
    FOREIGN KEY (BRANCH_NO) REFERENCES BRANCH(BRANCH_NO)  
);
```

## CUSTOMER TABLE

```
CREATE TABLE CUSTOMER(  
    CUSTOMER_ID INT PRIMARY KEY,  
    BOOKS_ISSUED INT,  
    CUSTOMER_NAME VARCHAR(25),  
    CUS_ADDRESS VARCHAR(25),  
    BRANCH_NO INT
```

);

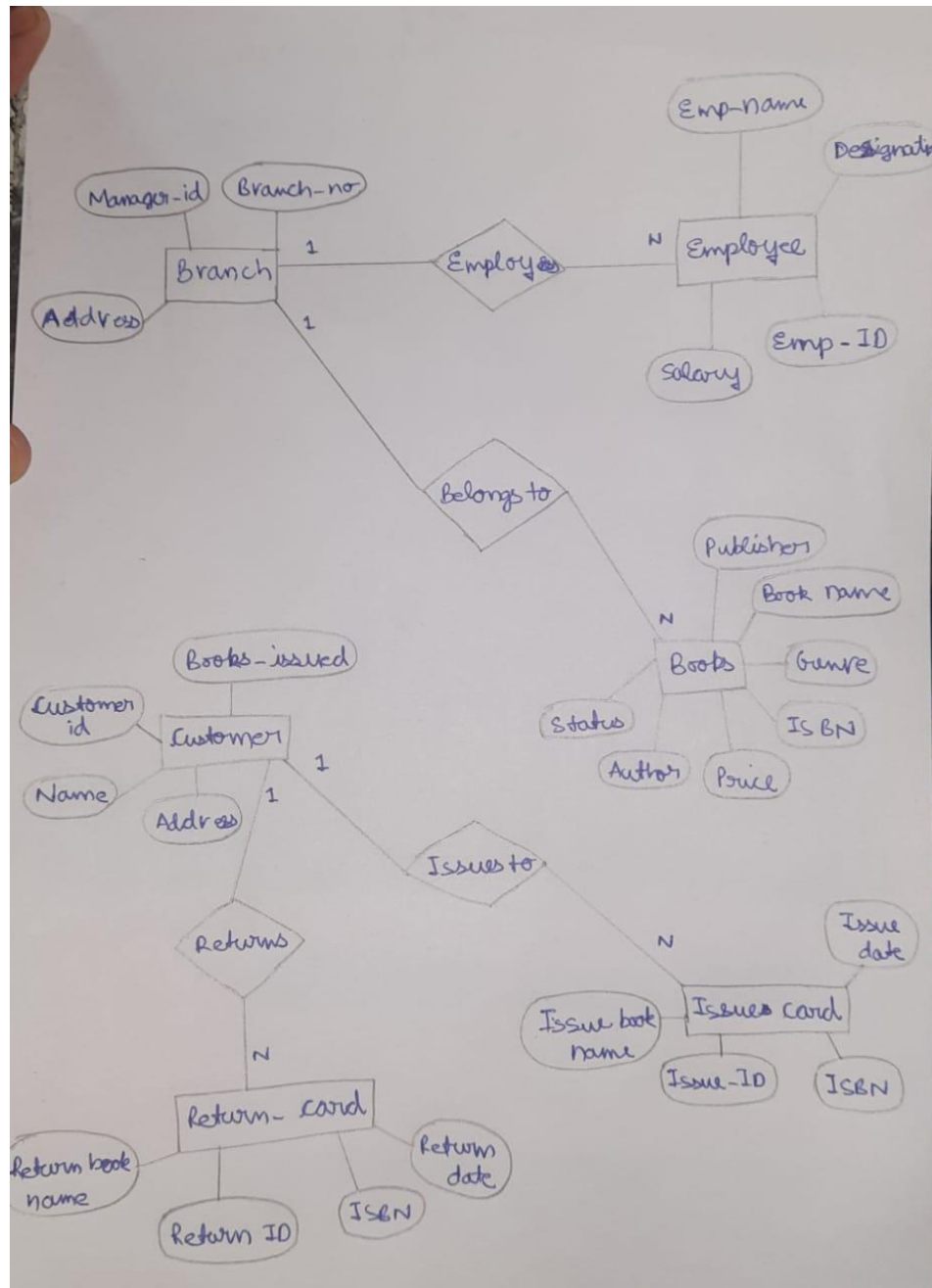
### **ISSUECARD TABLE**

```
CREATE TABLE ISSUECARD(  
    ISSUE_ID INT PRIMARY KEY,  
    ISSUE_DATE DATE,  
    ISBN INT,  
    ISSUE_BOOK_NAME VARCHAR(25),  
    CUSTOMER_ID INT,  
    FOREIGN KEY (CUSTOMER_ID) REFERENCES CUSTOMER(CUSTOMER_ID)  
);
```

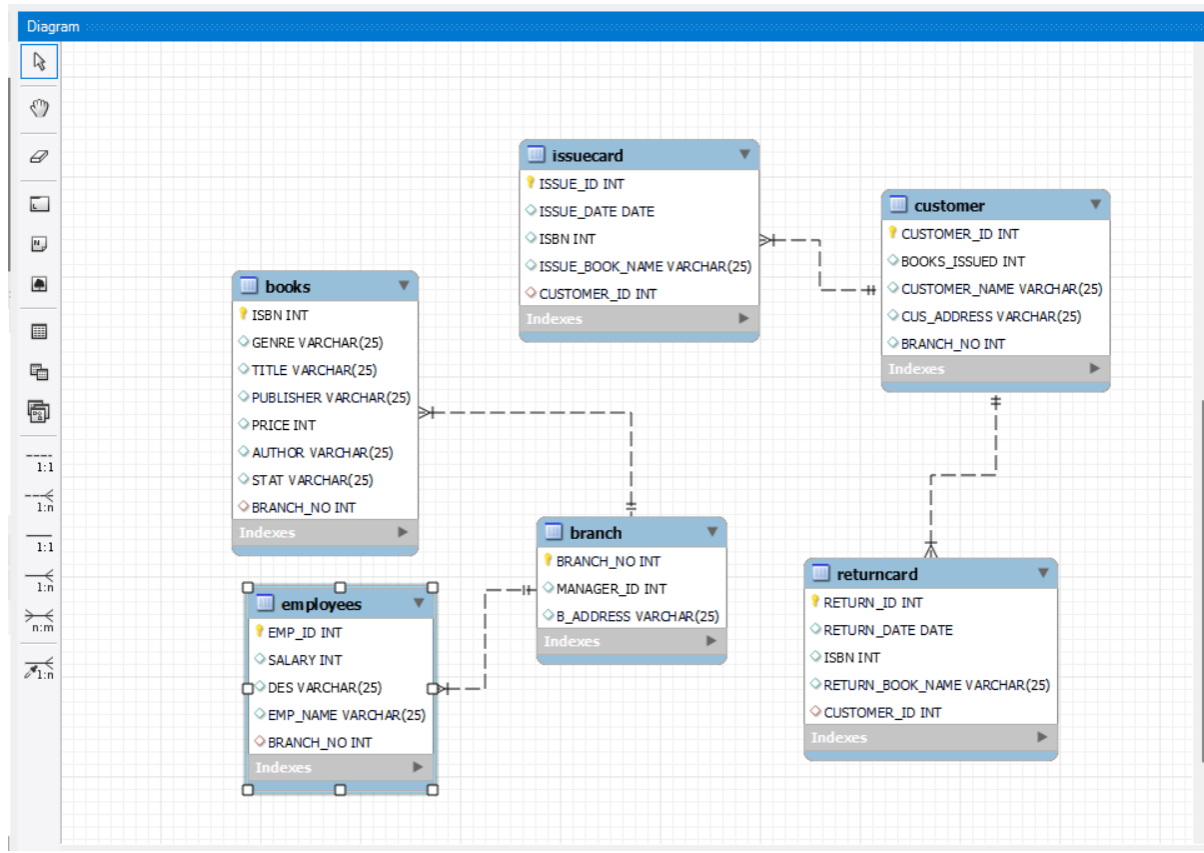
### **RETURNCARD TABLE**

```
CREATE TABLE RETURNCARD(  
    RETURN_ID INT PRIMARY KEY,  
    RETURN_DATE DATE,  
    ISBN INT,  
    RETURN_BOOK_NAME VARCHAR(25),  
    CUSTOMER_ID INT,  
    FOREIGN KEY (CUSTOMER_ID) REFERENCES CUSTOMER(CUSTOMER_ID)  
);
```

# ER DIAGRAM



# RELATIONAL TABLE



## Inserting Values In Database

### Insertion into BRANCH Table:

**INSERT INTO BRANCH VALUES**  
(301,900,'ABC ROAD DELHI'),  
(302,901,'MG ROAD'),  
(303,902,'KALUSARAI'),  
(304,903,'PRESS COLONY'),  
(305,904,'XYZ LANE'),  
(306,905,'SALT LAKE');

	BRANCH_NO	MANAGER_ID	B_ADDRESS
▶	301	900	ABC ROAD DELHI
	302	901	MG ROAD
	303	902	KALUSARAI
	304	903	PRESS COLONY
	305	904	XYZ LANE
	306	905	SALT LAKE

### Insertion Into BOOKS Table:

**INSERT INTO BOOKS VALUES**

(101, 'HORROR', 'IT', 'BLOOMSBURRY', 500, 'STEPHEN KING', 'VERY GOOD', 301),  
 (102, 'FANTASY', 'HARRY POTTER', 'BLOOMSBURRY', 1000, 'JK ROWLING', 'GOOD', 302),  
 (103, 'PSYCHOLOGICAL THRILLER', 'MISERY', 'PENGUIN', 1500, 'STEPHEN KING', 'VERY GOOD', 303),  
 (104, 'PSYCHOLOGICAL HORROR', 'THE SHINING', 'PUFFIN', 5000, 'STEPHEN KING', 'EXCELLENT', 304),  
 (105, 'DETECTIVE THRILLER', 'SHERLOCK HOLMES', 'PRAJAPATI', 2500, 'SIR ARTHUR CONAN DOYLE', 'GOOD', 305),  
 (106, 'PHILOSOPHY', 'WAR AND PEACE', 'BLOOMSBURRY', 1200, 'LEO TOLSTOY', 'AVERAGE', 301),  
 (107, 'ROMANCE', 'ROMEO AND JULIET', 'ROYAL', 5600, 'WILLIAM SHAKESPEARE', 'VERY GOOD', 302),  
 (108, 'BIOGRAPHY', 'THE GOOD BOATMAN', 'NATIONAL PRESS', 3500, 'RAJMOHAN GANDHI', 'GOOD', 303),  
 (109, 'THRILLER', 'TINTIN', 'SCOTTISH PRESS', 500, 'HERGE', 'VERY GOOD', 305),  
 (110, 'FANTASY', 'THE LORD OF THE RINGS', 'BLOOMSBURRY', 500, 'JJ TOLKIENS', 'EXCELLENT', 306),  
 (111, 'HORROR', 'SERPENT', 'PENGUIN', 5100, 'RAMACHAND', 'POOR', 306  
 );

	ISBN	GENRE	TITLE	PUBLISHER	PRICE	AUTHOR	STAT	BRANCH_NO
▶	101	HORROR	IT	BLOOMSBURRY	500	STEPHEN KING	VERY GOOD	301
	102	FANTASY	HARRY POTTER	BLOOMSBURRY	1000	JK ROWLING	GOOD	302
	103	PSYCHOLOGICAL THRILLER	MISERY	PENGUIN	1500	STEPHEN KING	VERY GOOD	303
	104	PSYCHOLOGICAL HORROR	THE SHINING	PUFFIN	5000	STEPHEN KING	EXCELLENT	304
	105	DETECTIVE THRILLER	SHERLOCK HOLMES	PRAJAPATI	2500	SIR ARTHUR C...	GOOD	305
	106	PHILOSOPHY	WAR AND PEACE	BLOOMSBURRY	1200	LEO TOLSTOY	AVERAGE	301
	107	ROMANCE	ROMEO AND JULIET	ROYAL	5600	WILLIAM SHAK...	VERY GOOD	302
	108	BIOGRAPHY	THE GOOD BOATMAN	NATIONAL PRESS	3500	RAJMOHAN GA...	GOOD	303
	109	THRILLER	TINTIN	SCOTTISH PRESS	500	HERGE	VERY GOOD	305
	110	FANTASY	THE LORD OF THE RINGS	BLOOMSBURRY	500	JJ TOLKIENS	EXCELLENT	306
	111	HORROR	SERPENT	PENGUIN	5100	RAMACHAND	POOR	304

### Insertion into CUSTOMER Table:

#### INSERT INTO CUSTOMER VALUES

```
(1230,5,'SHASWATA','SECONDARY ROAD',301),
(1231,10,'RISHAV','MG ROAD',302),
(1232,11,'PREETAM','KALUSARAI',303),
(1233,7,'AYUSH','BIDHANNAGAR',301),
(1234,8,'SOUMODEEP','23 KALUSARAI',303),
(1235,9,'SOHAM','NEHRU ROAD',302),
(1236,2,'RAJDEEP','AKBAR STREET',304),
(1237,1,'RATAN','NEWTON AVENUE',306),
(1238,3,'ISHAAN','SALT LAKE',306),
(1239,20,'PRATEEK','AKBAR ROAD',304),
(1240,12,'DEVANSH','SHIVAJI COLONY',305),
(1241,11,'PUSHPAL','RAMKRISHNA ROAD',301);
```

	CUSTOMER_ID	BOOKS_ISSUED	CUSTOMER_NAME	CUS_ADDRESS	BRANCH_NO
▶	1230	5	SHASWATA	SECONDARY ROAD	301
	1231	10	RISHAV	MG ROAD	302
	1232	11	PREETAM	KALUSARAI	303
	1233	7	AYUSH	BIDHANNAGAR	301
	1234	8	SOUMODEEP	23 KALUSARAI	303
	1235	9	SOHAM	NEHRU ROAD	302
	1236	2	RAJDEEP	AKBAR STREET	304
	1237	1	RATAN	NEWTON AVENUE	306
	1238	3	ISHAAN	SALT LAKE	306
	1239	20	PRATEEK	AKBAR ROAD	304
	1240	12	DEVANSH	SHIVAJI COLONY	305
	1241	11	PUSHPAL	RAMKRISHNA ROAD	301

### Insertion Into EMPLOYEES Table:

#### INSERT INTO EMPLOYEES VALUES

```
(30101,56000,'SR LIBRARIAN','ROHAN ANAND',301),
(30102,40000,'DATABASE MANAGER','RITESH MISHRA',301),
(30103,300000,'MANAGER','RITESH KHAN',301),
(30201,66000,'SR LIBRARIAN','NURUL HAQUE',302),
(30202,26000,'CLERK','ANANDA DEY',302),
(30203,76000,'MANAGER','SWARUP SARKAR',302),
(30204,16000,'GUARDSMAN','SUPRATIM MISHRA',302),
(30301,86000,'MANAGER','SANJAY YADAV',303),
(30302,36000,'SR LIBRARIAN','TITU BISOI',303),
(30401,96000,'MANAGER','PRADEEP RAOUTH',304),
(30402,40000,'DATABASE MANAGER','BITTU MISHRA',304),
(30501,100000,'MANAGER','ANKIT ANAND',305),
(30601,200000,'MANAGER','ROHAN BASU',306),
(30502,56000,'COMPUTER TECH','MOHIBUL ISLAM',305),
(30602,40000,'CLERK','MONORANJAN MODI',306),
(30603,45000,'JR LIBRARIAN','RAJIV DEY',306);
```

	EMP_ID	SALARY	DES	EMP_NAME	BRANCH_NO
▶	30101	56000	SR LIBRARIAN	ROHAN ANAND	301
	30102	40000	DATABASE MANAGER	RITESH MISHRA	301
	30103	300000	MANAGER	RITESH KHAN	301
	30201	66000	SR LIBRARIAN	NURUL HAQUE	302
	30202	26000	CLERK	ANANDA DEY	302
	30203	76000	MANAGER	SWARUP SARKAR	302
	30204	16000	GUARDSMAN	SUPRATIM MISHRA	302
	30301	86000	MANAGER	SANJAY YADAV	303
	30302	36000	SR LIBRARIAN	TITU BISOI	303
	30401	96000	MANAGER	PRADEEP RAOUTH	304
	30402	40000	DATABASE MANAGER	BITTU MISHRA	304
	30501	100000	MANAGER	ANKIT ANAND	305

### **Insertion into ISSUECARD Table:**

#### **INSERT INTO ISSUECARD VALUES**

```

(6601,'2022-01-03',101,'IT',1230),
(6602,'2022-01-05',103,'MISERY',1233),
(6603,'2022-01-07',102,'HARRY POTTER',1231),
(6604,'2022-01-11',103,'MISERY',1239),
(6605,'2022-01-15',104,'THE SHINING',1240),
(6606,'2022-01-17',105,'SHERLOCK HOLMES',1241),
(6607,'2022-01-20',101,'IT',1232),
(6608,'2022-01-21',102,'HARRY POTTER',1232),
(6609,'2022-01-24',106,'WAR AND PEACE',1236),
(6610,'2022-01-26',107,'ROMEO AND JULIET',1237),
(6611,'2022-01-27',108,'THE GOOD BOATMAN',1238),
(6612,'2022-01-31',109,'TINTIN',1234),
(6613,'2022-02-03',110,'THE LORD OF THE RINGS',1235),
(6614,'2022-02-05',110,'THE LORD OF THE RINGS',1235),
(6615,'2022-02-10',109,'TINTIN',1230),
(6616,'2022-02-15',109,'TINTIN',1233),
(6617,'2022-02-19',107,'ROMEO AND JULIET',1237);

```



	ISSUE_ID	ISSUE_DATE	ISBN	ISSUE_BOOK_NAME	CUSTOMER_ID
▶	6601	2022-01-03	101	IT	1230
	6602	2022-01-05	103	MISERY	1233
	6603	2022-01-07	102	HARRY POTTER	1231
	6604	2022-01-11	103	MISERY	1239
	6605	2022-01-15	104	THE SHINING	1240
	6606	2022-01-17	105	SHERLOCK HOLMES	1241
	6607	2022-01-20	101	IT	1232
	6608	2022-01-21	102	HARRY POTTER	1232
	6609	2022-01-24	106	WAR AND PEACE	1236
	6610	2022-01-26	107	ROMEO AND JULIET	1237
	6611	2022-01-27	108	THE GOOD BOATMAN	1238
	6612	2022-01-31	109	TINTIN	1234
	6613	2022-02-03	110	THE LORD OF THE ...	1235
	6614	2022-02-05	110	THE LORD OF THE ...	1235
	6615	2022-02-10	109	TINTIN	1230
	6616	2022-02-15	109	TINTIN	1233
	6617	2022-02-19	107	ROMEO AND JULIET	1237

### Insertion into RETURNCARD Table:

#### INSERT INTO RETURNCARD VALUES

```
(7701,'2022-03-01',101,'IT',1230),
(7702,'2022-03-03',103,'MISERY',1233),
(7703,'2022-03-05',102,'HARRY POTTER',1231),
(7704,'2022-03-07',103,'MISERY',1239),
(7705,'2022-03-15',104,'THE SHINING',1240),
(7706,'2022-03-17',105,'SHERLOCK HOLMES',1241),
(7707,'2022-03-20',101,'IT',1232),
(7708,'2022-03-22',102,'HARRY POTTER',1232),
(7709,'2022-03-29',106,'WAR AND PEACE',1236),
(7710,'2022-03-31',107,'ROMEO AND JULIET',1237),
(7711,'2022-04-01',108,'THE GOOD BOATMAN',1238),
(7712,'2022-04-02',109,'TINTIN',1234),
(7713,'2022-04-03',110,'THE LORD OF THE RINGS',1235),
(7714,'2022-04-05',110,'THE LORD OF THE RINGS',1235),
(7715,'2022-04-07',109,'TINTIN',1230),
(7716,'2022-04-08',109,'TINTIN',1233),
(7717,'2022-04-10',107,'ROMEO AND JULIET',1237);
```

	RETURN_ID	RETURN_DATE	ISBN	RETURN_BOOK_NAME	CUSTOMER_ID
▶	7701	2022-03-01	101	IT	1230
	7702	2022-03-03	103	MISERY	1233
	7703	2022-03-05	102	HARRY POTTER	1231
	7704	2022-03-07	103	MISERY	1239
	7705	2022-03-15	104	THE SHINING	1240
	7706	2022-03-17	105	SHERLOCK HOLMES	1241
	7707	2022-03-20	101	IT	1232
	7708	2022-03-22	102	HARRY POTTER	1232
	7709	2022-03-29	106	WAR AND PEACE	1236
	7710	2022-03-31	107	ROMEO AND JULIET	1237
	7711	2022-04-01	108	THE GOOD BOATMAN	1238
	7712	2022-04-02	109	TINTIN	1234
	7713	2022-04-03	110	THE LORD OF THE RI...	1235
	7714	2022-04-05	110	THE LORD OF THE RI...	1235
	7715	2022-04-07	109	TINTIN	1230
	7716	2022-04-08	109	TINTIN	1233
	7717	2022-04-10	107	ROMEO AND JULIET	1237