DBMS PROJECT

Group Members: Ashutosh Yadav

ROLL NUMBER – 21EEB0B09 EEE

Project Title: Library Management

System

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

ENTITIES:

BRANCH

EMPLOYEES

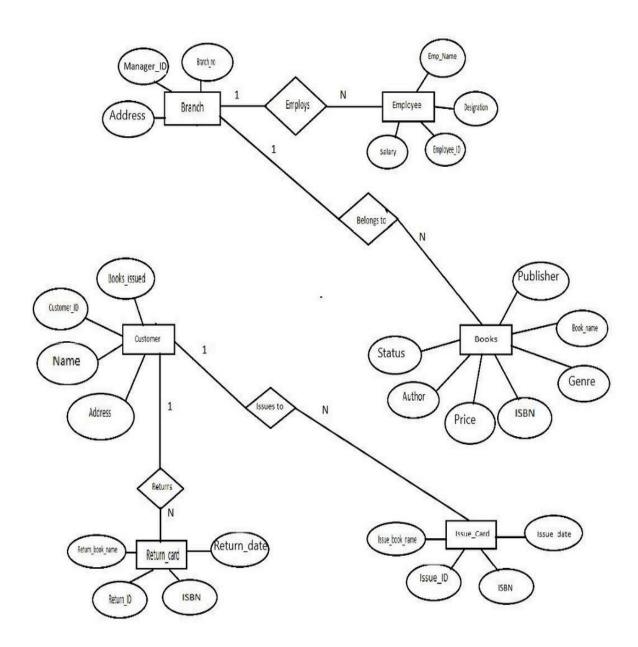
CUSTOMER

BOOKS

ISSUECARD

RETURNCARD

ER Diagram:



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
BRANCH_NO AS FOREIGN KEY REFERENCES TO BRANCH
TABLE

2>In Table BRANCH: BRANCH_NO IS THE PRIMARY KEY AND DETERMINES ALL OTHER VALUES UNIQUELY

3>In Table EMPLOYEES: EMP_ID IS THE PRIMARY KEY AND DETERMINES ALL OTHER EMPLOYEES UNIQUELY.

We DECOMPOSED INTO 2 TABLES BRANCH AND EMPLOYEES SO THAT EACH TABLE IS IN BCNF FORM.

4>In Table CUSTOMER CUSTOMER_ID IS THE PRIMARY KEY AND BRANCH_NO IS FOREIGN KEY REFERENCING TO BRANCH TABLE.

5>In Table ISSUECARD ISSUE_ID IS THE PRIMARY KEY AND CUSTOMER_ID IS FOREIGN KEY REFERENCING TO CUSTOMER TABLE.

6> In Table RETURNCARD RETURN_ID IS THE PRIMARY KEY AND CUSTOMER_ID IS FOREIGN KEY REFERENCING TO CUSTOMER TABLE.

All our Table are in normalised form since there is no partial dependency nor there is any transitive dependency. In all the tables all attributes are dependent on the Primary Key.

Creating DataBase using SQL Developer

BOOKS TABLE:

CREATE TABLE BOOKS(ISBN INT,GENRE VARCHAR(25),TITLE VARCHAR(25),PUBLISHER VARCHAR(25),PRICE INT,AUTHOR VARCHAR(25),STATUS VARCHAR(25),BRANCH_NO INT);

EMPLOYEES TABLE:

CREATE TABLE EMPLOYEES(EMP_ID INT,SALARY INT,DES VARCHAR(25),EMP_NAME VARCHAR(25),BRANCH_NO INT);

BRANCH TABLE:

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

CUSTOMER TABLE:

CREATE TABLE CUSTOMER(CUSTOMER_ID INT,BOOKS_ISSUED INT,CUSTOMER_NAME VARCHAR(25),CUS_ADDRESS VARCHAR(25),BRANCH_NO INT);

ISSUECARD:

CREATE TABLE ISSUECARD(ISSUE_ID INT,ISSUE_DATE DATE,ISBN INT, ISSUE_BOOK_NAME VARCHAR(25),CUSTOMER_ID INT);

RETURNCARD:

CREATE TABLE RETURNCARD(RETURN_ID INT, RETURN_BOOK_NAME VARCHAR(25), CUSTOMER ID INT);

Inserting Values In DataBase

Insertion Into BOOKS Table:

INSERT INTO BOOKS
VALUES(101,'HORROR','IT','BLOOMSBURRY',500,'STEPHEN
KING','VERY GOOD',301);

INSERT INTO BOOKS VALUES(102,'FANTASY','HARRY POTTER','BLOOMSBURRY',1000,'JK ROWLING','GOOD',302); INSERT INTO BOOKS VALUES(103,'PSYCHOLOGICAL THRILLER','MISERY','PENGUIN',1500,'STEPHEN KING','VERY GOOD',303);

INSERT INTO BOOKS VALUES(104, 'PSYCHOLOGICAL HORROR', 'THE SHINING', 'PUFFIN', 5000, 'STEPHEN KING', 'EXCELLENT', 304);

INSERT INTO BOOKS VALUES(105, 'DETECTIVE THRILLER', 'SHERLOCK HOLMES', 'PRAJAPATI', 2500, 'SIR ARTHUR CONAN DOYLE', 'GOOD', 305);

INSERT INTO BOOKS VALUES(106, 'PHILOSOPHY', 'WAR AND PEACE', 'BLOOMSBURRY', 1200, 'LEO TOLSTOY', 'AVERAGE', 301);

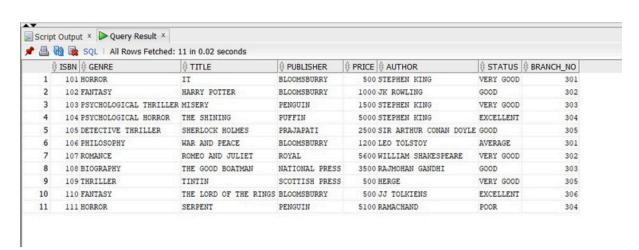
INSERT INTO BOOKS VALUES(107, 'ROMANCE', 'ROMEO AND JULIET', 'ROYAL', 5600, 'WILLIAM SHAKESPEARE', 'VERY GOOD', 302);

INSERT INTO BOOKS VALUES(108,'BIOGRAPHY','THE GOOD BOATMAN','NATIONAL PRESS',3500,'RAJMOHAN GANDHI','GOOD',303);

INSERT INTO BOOKS VALUES(109, 'THRILLER', 'TINTIN', 'SCOTTISH PRESS', 500, 'HERGE', 'VERY GOOD', 305);

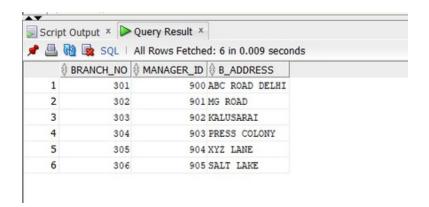
INSERT INTO BOOKS VALUES(110, 'FANTASY', 'THE LORD OF THE RINGS', 'BLOOMSBURRY', 500, 'JJ TOLKIENS', 'EXCELLENT', 306); INSERT INTO BOOKS

V ALUE S(111,' H O RRO R',' SE RP E NT',' P E NG UIN',5100,' RAM AC H AND 'POOR',304);



Insertion into BRANCH Table:

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



Insertion into CUSTOMER Table:

INSERT INTO CUSTOMER VALUES(1230,5,'SHASWATA','SECONDARY ROAD',301);

INSERT INTO CUSTOMER VALUES(1231,10,'RISHAV','MG ROAD',302);

INSERT INTO CUSTOMER

VALUES(1232,11,'PREETAM','KALUSARAI',303);

INSERT INTO CUSTOMER

VALUES(1233,7,'AYUSH','BIDHANNAGAR',301);

INSERT INTO CUSTOMER VALUES(1234,8,'SOUMODEEP','23 KALUSARAI',303);

INSERT INTO CUSTOMER VALUES(1235,9,'SOHAM','NEHRU ROAD',302);

INSERT INTO CUSTOMER VALUES(1236,2,'RAJDEEP','AKBAR STREET',304);

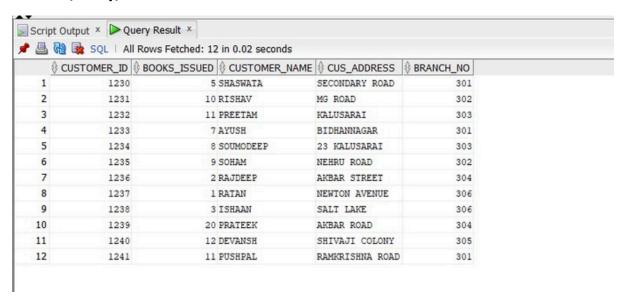
INSERT INTO CUSTOMER VALUES(1237,1,'RATAN','NEWTON AVENUE',306);

INSERT INTO CUSTOMER VALUES(1238,3,'ISHAAN','SALT LAKE',306);

INSERT INTO CUSTOMER VALUES(1239,20,'PRATEEK','AKBAR ROAD',304);

INSERT INTO CUSTOMER VALUES(1240,12,'DEVANSH','SHIVAJI COLONY',305);

INSERT INTO CUSTOMER VALUES(1241,11,'PUSHPAL','RAMKRISHNA ROAD',301);



Insertion Into EMPLOYEES Table:

INSERT INTO EMPLOYEES VALUES(30101,56000,'SR LIBRARIAN','ROHAN ANAND',301);

INSERT INTO EMPLOYEES VALUES(30102,40000,'DATABASE MANAGER','RITESH MISHRA',301);

INSERT INTO EMPLOYEES

VALUES(30103,300000, 'MANAGER', 'RITESH KHAN', 301);

INSERT INTO EMPLOYEES VALUES(30201,66000,'SR

LIBRARIAN', 'NURUL HAQUE', 302);

INSERT INTO EMPLOYEES VALUES(30202,26000,'CLERK','ANANDA DEY',302);

INSERT INTO EMPLOYEES

VALUES(30203,76000,'MANAGER','SWARUP SARKAR',302);

INSERT INTO EMPLOYEES

VALUES(30204,16000,'GUARDSMAN','SUPRATIM MISHRA',302);

INSERT INTO EMPLOYEES

VALUES(30301,86000, 'MANAGER', 'SANJAY YADAV',303);

INSERT INTO EMPLOYEES VALUES(30302,36000,'SR

LIBRARIAN', 'TITU BISOI', 303);

INSERT INTO EMPLOYEES

VALUES(30401,96000,'MANAGER','PRADEEP RAOUTH',304);

INSERT INTO EMPLOYEES VALUES (30402,40000, 'DATABASE

MANAGER', 'BITTU MISHRA', 304);

INSERT INTO EMPLOYEES

VALUES(30501,100000, 'MANAGER', 'ANKIT ANAND', 305);

INSERT INTO EMPLOYEES

VALUES(30601,200000, 'MANAGER', 'ROHAN BASU', 306);

INSERT INTO EMPLOYEES VALUES(30502,56000,'COMPUTER

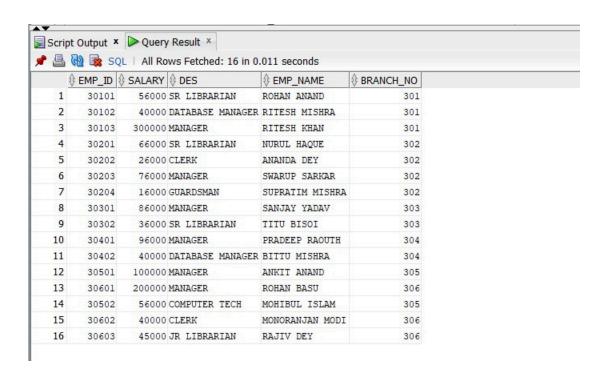
TECH', 'MOHIBUL ISLAM', 305);

INSERT INTO EMPLOYEES

VALUES(30602,40000,'CLERK','MONORANJAN MODI',306);

INSERT INTO EMPLOYEES VALUES (30603,45000, 'JR

LIBRARIAN', 'RAJIV DEY', 306);



Insertion into ISSUECARD Table:

INSERT INTO ISSUECARD VALUES(6601,TO_DATE('17/12/2016', 'DD/MM/YYYY'),101,'IT',1230);

INSERT INTO ISSUECARD VALUES(6602,TO_DATE('12/01/2017', 'DD/MM/YYYY'),103,'MISERY',1233);

INSERT INTO ISSUECARD VALUES(6603,TO_DATE('11/02/2017', 'DD/MM/YYYY'),102,'HARRY POTTER',1231);

INSERT INTO ISSUECARD VALUES(6604,TO_DATE('13/03/2017', 'DD/MM/YYYY'),103,'MISERY',1239);

INSERT INTO ISSUECARD VALUES(6605,TO_DATE('21/03/2017', 'DD/MM/YYYY'),104,'THE SHINING',1240);

INSERT INTO ISSUECARD VALUES(6606,TO_DATE('20/04/2017', 'DD/MM/YYYY'),105,'SHERLOCK HOLMES',1241);

INSERT INTO ISSUECARD VALUES(6607,TO_DATE('19/05/2017', 'DD/MM/YYYY'),101,'IT',1232);

INSERT INTO ISSUECARD VALUES(6608,TO_DATE('18/06/2017', 'DD/MM/YYYY'),102,'HARRY POTTER',1232);

INSERT INTO ISSUECARD VALUES(6609,TO_DATE('19/01/2018', 'DD/MM/YYYY'),106,'WAR AND PEACE',1236);

INSERT INTO ISSUECARD VALUES(6610,TO_DATE('11/02/2018', 'DD/MM/YYYY'),107,'ROMEO AND JULIET',1237);

INSERT INTO ISSUECARD VALUES(6611,TO_DATE('03/03/2018', 'DD/MM/YYYY'),108,'THE GOOD BOATMAN',1238);

INSERT INTO ISSUECARD VALUES(6612,TO_DATE('06/03/2018', 'DD/MM/YYYY'),109,'TINTIN',1234);

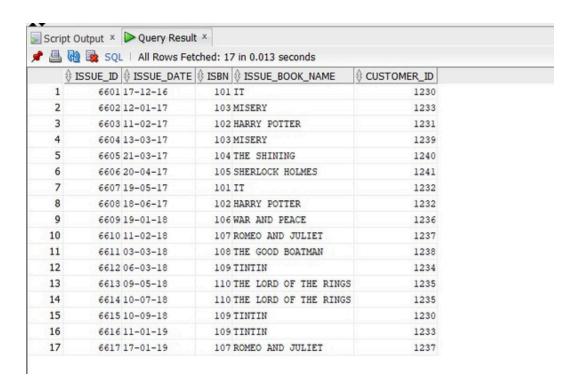
INSERT INTO ISSUECARD VALUES(6613,TO_DATE('09/05/2018', 'DD/MM/YYYY'),110,'THE LORD OF THE RINGS',1235);

INSERT INTO ISSUECARD VALUES(6614,TO_DATE('10/07/2018', 'DD/MM/YYYY'),110,'THE LORD OF THE RINGS',1235);

INSERT INTO ISSUECARD VALUES(6615,TO_DATE('10/09/2018', 'DD/MM/YYYY'),109,'TINTIN',1230);

INSERT INTO ISSUECARD VALUES(6616,TO_DATE('11/01/2019', 'DD/MM/YYYY'),109,'TINTIN',1233);

INSERT INTO ISSUECARD VALUES(6617,TO_DATE('17/01/2019', 'DD/MM/YYYY'),107,'ROMEO AND JULIET',1237);



Insertion into RETURNCARD Table:

INSERT INTO RETURNCARD VALUES(7701,TO_DATE('23/12/2016', 'DD/MM/YYYY'),101,'IT',1230);

INSERT INTO RETURNCARD VALUES(7702,TO_DATE('19/01/2017', 'DD/MM/YYYY'),103,'MISERY',1233);

INSERT INTO RETURNCARD VALUES(7703,TO_DATE('20/02/2017', 'DD/MM/YYYY'),102,'HARRY POTTER',1231);

INSERT INTO RETURNCARD VALUES(7704,TO_DATE('19/03/2017', 'DD/MM/YYYY'),103,'MISERY',1239);

INSERT INTO RETURNCARD VALUES(7705,TO_DATE('28/03/2017', 'DD/MM/YYYY'),104,'THE SHINING',1240);

INSERT INTO RETURNCARD VALUES(7706,TO_DATE('29/04/2017', 'DD/MM/YYYY'),105,'SHERLOCK HOLMES',1241);

INSERT INTO RETURNCARD VALUES(7707,TO_DATE('29/05/2017', 'DD/MM/YYYY'),101,'IT',1232);

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INSERT INTO RETURNCARD VALUES(7708,TO_DATE('26/06/2017', 'DD/MM/YYYY'),102,'HARRY POTTER',1232);
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INSERT INTO RETURNCARD VALUES(7709,TO_DATE('27/01/2018', 'DD/MM/YYYY'),106,'WAR AND PEACE',1236);

INSERT INTO RETURNCARD VALUES(7710,TO_DATE('28/02/2018', 'DD/MM/YYYY'),107,'ROMEO AND JULIET',1237);

INSERT INTO RETURNCARD VALUES(7711,TO_DATE('15/03/2018', 'DD/MM/YYYY'),108,'THE GOOD BOATMAN',1238);

INSERT INTO RETURNCARD VALUES(7712,TO_DATE('21/03/2018', 'DD/MM/YYYY'),109,'TINTIN',1234);

INSERT INTO RETURNCARD VALUES(7713,TO_DATE('19/05/2018', 'DD/MM/YYYY'),110,'THE LORD OF THE RINGS',1235);

INSERT INTO RETURNCARD VALUES(7714,TO_DATE('20/07/2018', 'DD/MM/YYYY'),110,'THE LORD OF THE RINGS',1235);

INSERT INTO RETURNCARD VALUES(7715,TO_DATE('25/09/2018', 'DD/MM/YYYY'),109,'TINTIN',1230);

INSERT INTO RETURNCARD VALUES(7716,TO_DATE('25/01/2019', 'DD/MM/YYYY'),109,'TINTIN',1233);

INSERT INTO RETURNCARD VALUES(7717,TO_DATE('31/01/2019', 'DD/MM/YYYY'),107,'ROMEO AND JULIET',1237);



Queries:

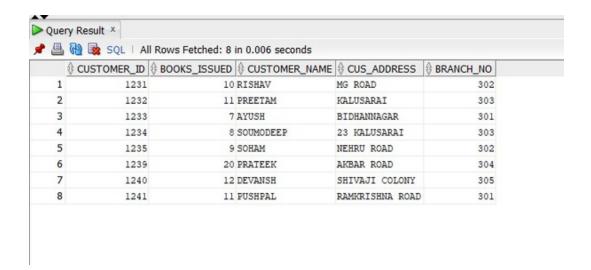
Q1>Display the names of books which belong in fantasy genre and price above 1000?

QUERY=> SELECT ISBN , TITLE FROM BOOKS WHERE GENRE='FANTASY' AND PRICE>=1000;



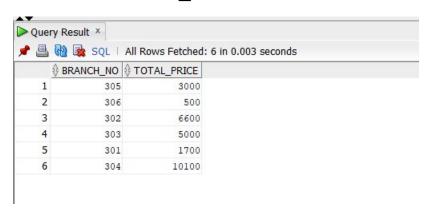
Q2>Display the names of customers who have read more than 5 books?

QUERY=> SELECT * FROM CUSTOMER WHERE BOOKS_ISSUED>5;



Q3>Display the total price of books per branch?

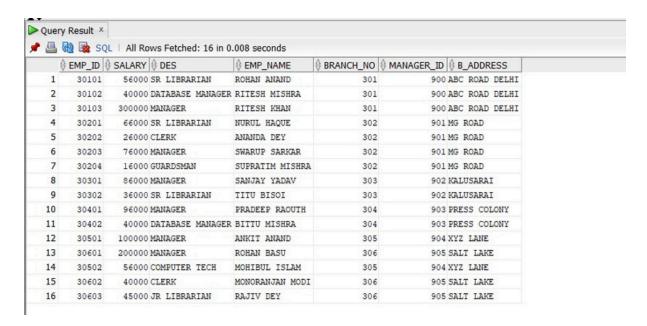
QUERY=> SELECT BOOKS.BRANCH_NO,SUM(PRICE) AS TOTAL_PRICE FROM BOOKS INNER JOIN BRANCH ON BOOKS.BRANCH_NO=BRANCH.BRANCH_NO GROUP BY BOOKS.BRANCH NO;



Q4>Display the employee details along with which bank they work in ?

QUERY=> SELECT

EMP_ID,SALARY,DES,EMP_NAME,BRANCH.BRANCH_NO,MA
NAGER_ID,B_ADDRESS FROM EMPLOYEES INNER JOIN
BRANCH ON
EMPLOYEES.BRANCH_NO=BRANCH.BRANCH_NO;



Q5>Display the books issued more than once?

QUERY=> SELECT BOOKS.ISBN,COUNT(BOOKS.ISBN) AS TOTAL_BOOKS_ISSUED FROM BOOKS INNER JOIN ISSUECARD ON BOOKS.ISBN=ISSUECARD.ISBN GROUP BY BOOKS.ISBN HAVING COUNT(BOOKS.ISBN)>1;

