```
/*

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*/


/*

drop table BOOKCHECKOUT;

drop table MEMBER;

drop table LIBRARYSYSTEM;

drop table EMPLOYEE;

drop table JOB;

drop table BOOKS;

drop table SECTION;

drop table LIBRARY;

drop table PUBLISHER;

drop table AUTHOR;



create table AUTHOR (

    AuthorID         number not null,

    AuthorFirstName     varchar2(20) not null,

    AuthorLastName      varchar2(20) not null,

    DOB             date not null,

    PRIMARY KEY (authorID)
);


create table PUBLISHER (

    PublisherID       number not null,

    PublisherName      varchar2(30) not null,

    PublisherDate      date not null,
```

```sql
    PRIMARY KEY (publisherID)
);


create table LIBRARY (
    LibraryID        number not null,
    LibraryAddress    varchar2(30) not null,
    LibraryName        varchar2(30) not null,
    PRIMARY KEY (LIBRARYID)
);


create table SECTION (
    SectionID        number not null,
    LibraryID        number not null,
    DeweyDecimal        number not null,
    PRIMARY KEY (SECTIONID),
    FOREIGN KEY (LIBRARYID) REFERENCES LIBRARY(LIBRARYID),
    CONSTRAINT CheckDewyIsValid CHECK (DeweyDecimal > 0 AND DeweyDecimal < 1000)
);


create table BOOKS (
    ISBN            number not null,
    SectionID        number not null,
    AuthorID        number,
    PublisherID            number not null,
    Title            varchar2(30) not null,
    PRIMARY KEY (ISBN),
    FOREIGN KEY (SECTIONID) REFERENCES SECTION(SECTIONID),
    FOREIGN KEY(AUTHORID) REFERENCES AUTHOR(AUTHORID),
    FOREIGN KEY (PUBLISHERID) REFERENCES PUBLISHER(PUBLISHERID)
```

```
);

create table JOB (
    JobID          number not null,
    JobType        varchar2(20) not null,
    JobDesc        varchar2(51) not null,
    PRIMARY KEY (JOBID)
);

create table EMPLOYEE (
    EMPID          number not null,
    LibraryID      number not null,
    JobID          number not null,
    MemberID       number not null,
    PRIMARY KEY (EMPID),
    FOREIGN KEY (LIBRARYID) REFERENCES LIBRARY(LIBRARYID),
    FOREIGN KEY (JOBID) REFERENCES JOB(JOBID)
);

create table MEMBER (
    MemberID       number not null,
    MemberName     varchar2(20) not null,
    DOB            date not null,
    PhoneNumber    number not null,
    PRIMARY KEY (MEMBERID)
);

create table MEMBERACCOUNT (
    LibraryID      number not null,
```

```sql
    MemberID        number not null,

    UserType        varchar2(20) not null,

    Password        varchar2(20) not null,

    FOREIGN KEY (LibraryID) REFERENCES LIBRARY(LIBRARYID),

    FOREIGN KEY (MEMBERID) REFERENCES MEMBER(MEMBERID)

);


create table BOOKCHECKOUT (

CheckoutID          number not null,

MemberID            number not null,

ISBN            number not null,

AvailableCopy        number not null,

TotalCopy          number not null,

BorrowedDate        date not null,

ReturnDate          date,

PRIMARY KEY (CHECKOUTID),

FOREIGN KEY (MEMBERID) REFERENCES MEMBER(MEMBERID)

);



-- Scripts to populate data into all your tables (at least 5 rows per table) (20 points)


--Author Table
INSERT INTO Author
VALUES('123456', 'Sam', 'Gibbs', TO_DATE('19/Sep/1997'));


INSERT INTO Author
VALUES('102068', 'Khris', 'Davidson', TO_DATE('01/Dec/1984'));
```

```
INSERT INTO Author

VALUES('174387', 'Emily', 'Howard', TO_DATE('15/Apr/1981'));


INSERT INTO Author

VALUES('174287', 'Ashley', 'Olvera', TO_DATE('20/May/1971'));


INSERT INTO Author

VALUES('199834', 'Harrison', 'Oliver', TO_DATE('04/Feb/1978'));


--select * from Author;


--Publisher Table


INSERT INTO Publisher

VALUES('264074', 'Penguins Co', TO_DATE('21/Apr/2015'));


INSERT INTO Publisher

Values('287354', 'RELS', TO_DATE('15/Oct/2001'));


INSERT INTO Publisher

VALUES('234785', 'CollinsHarp', TO_DATE('01/Jan/2011'));


INSERT INTO Publisher

VALUES('221654','Parliament House', TO_DATE('07/May/2008'));


INSERT INTO Publisher

VALUES('257812', 'TITAN Books', TO_DATE('24/Dec/2016'));


INSERT INTO Publisher
```

```sql
VALUES('214573', 'Rocket Scholar', TO_DATE('12/Aug/2004'));


--select * from Publisher;



--Library Table
INSERT INTO Library
VALUES('345248', '529 Booksvile Ave', 'Legacy Library');


INSERT INTO Library
VALUES('327845', '2254 Chapmans Lane','Frontier Library');


INSERT INTO Library
VALUES('389245', '3616 Foley Street', 'Grand Oak Library');


INSERT INTO Library
VALUES('336417', '3095 Trainer Avenue', 'Plainfield Library');


INSERT INTO Library
VALUES('324812', '1101 Kembery Drive', 'Institute Library');


--select * from Library;



--Section Table
INSERT INTO Section
VALUES('401','345248', '800');


INSERT INTO Section
```

```
VALUES('402','345248', '400');


INSERT INTO Section
VALUES('403','389245', '300');


INSERT INTO Section
VALUES('404','336417', '700');


INSERT INTO Section
VALUES('405','336417', '200');


--select * from Section;


--Books Table
INSERT INTO Books
VALUES('9780147512734','402','123456', '264074', 'Castle Hangnail');


INSERT INTO Books
VALUES('9783942869133','401','102068', '264074', 'Frankenstein');


INSERT INTO Books
VALUES('9780090440764','403','174387', '264074', 'Isle of Truth');


INSERT INTO Books
VALUES('9789211746402','404','174287', '234785', 'How to Not Be Wrong');


INSERT INTO Books
VALUES('9784829465750','405','199834', '234785', 'Dracula');
```

--select * from Books;

--Job Table

INSERT INTO Job

VALUES('501', 'Librarian','Help people with homework and research questions.');

INSERT INTO Job

VALUES('502', 'Pages','Puts the books and other items on the shelves.');

INSERT INTO Job

VALUES('503', 'Library Managers','Coordinates phases of the library activities.');

INSERT INTO Job

VALUES('504', 'Library Assistant', 'Check materials out and in, collect fines and fees.');

INSERT INTO Job

VALUES('505', 'Library Directors', 'Preparing and overseeing the budget.');

--select * from Job;

--Member Table

INSERT INTO Member

VALUES('101','Chris Orto',TO_DATE('12/Dec/1993'),'7854135891');

INSERT INTO Member

VALUES('102','John Hare',TO_DATE('14/Feb/2000'),'9824782478');

```sql
INSERT INTO Member
VALUES('103', 'Sheryl Lee',TO_DATE('04/May/1992'),'1478244754');


INSERT INTO Member
VALUES('104', 'Derek Green',TO_DATE('18/Oct/1997'),'2453635574');


INSERT INTO Member
VALUES('105', 'Alex Brown',TO_DATE('21/Jul/1984'),'3254126696');


INSERT INTO MEMBER
VALUES('106', 'Alfred Johnson', '18/JUN/2000', '1894972000');


--select * from Member;



--Employee Table
INSERT INTO Employee
VALUES('601', '345248', '501', '101');


INSERT INTO Employee
VALUES('602','345248','502', '102');


INSERT INTO Employee
VALUES('603','345248','503', '103');


INSERT INTO Employee
VALUES('604','345248','504', '104');
```

INSERT INTO Employee

VALUES('605','345248','505','105');

--select * from Employee;

MEMBERACCOUNT Table

INSERT INTO MEMBERACCOUNT

VALUES('345248', '101', 'Employee', 'password');

INSERT INTO MEMBERACCOUNT

VALUES('327845', '102','Employee', 'notpassword');

INSERT INTO MEMBERACCOUNT

VALUES('389245', '103','Member', 'goodpassword');

INSERT INTO MEMBERACCOUNT

VALUES('336417', '104','Member', 'badpassword');

INSERT INTO MEMBERACCOUNT

VALUES('324812', '105','Member', 'extrmepassword');

--select * from MEMBERACCOUNT;

--BookCheckout Table

INSERT INTO BookCheckout

VALUES('901', '101','9780147512734','4','10',TO_DATE('15/Apr/2022'),TO_DATE('01/May/2022'));

```
INSERT INTO BookCheckout

VALUES('902', '102','9783942869133','2','8',TO_DATE('04/Apr/2022'),TO_DATE('20/Apr/2022'));


INSERT INTO BookCheckout

VALUES('903','103','9780090440764','1','10',TO_DATE('10/Feb/2022'),TO_DATE('24/Apr/2022'));


INSERT INTO BookCheckout (CheckoutID, MemberID, ISBN, AvailableCopy, TotalCopy, BorrowedDate)

VALUES('904','104','9789211746402','6','10',TO_DATE('21/Mar/2022'));


INSERT INTO BookCheckout (CheckoutID, MemberID, ISBN, AvailableCopy, TotalCopy, BorrowedDate)

VALUES('905','105','9784829465750','3','6',TO_DATE('14/Jan/2022'));


INSERT INTO BookCheckout (CheckoutID, MemberID, ISBN, AvailableCopy, TotalCopy, BorrowedDate)

VALUES('906','106','9784829465750','2','6',TO_DATE('14/Jan/2022'));


--select * from BookCheckout;



-- Scripts to update data (update (SQL DML) statements should be in various complexity, at least 2 per
table) (20 points)
/*
UPDATE AUTHOR

SET AuthorFirstName = 'Chris'

WHERE AuthorLastName = 'Davidson';


UPDATE AUTHOR

SET DOB ='14/Apr/1981'

WHERE AuthorID ='174387';
```

--select * from Author

UPDATE PUBLISHER

SET PublisherID = '287354'

WHERE PublisherDate = '15/Oct/2001';

UPDATE PUBLISHER

SET PublisherDate ='05/Sep/205'

WHERE PublisherName ='Rocket Scholar';

--select * from Publisher

UPDATE LIBRARY

SET LibraryAddress = '530 Bluejay Dr'

WHERE LibraryName ='Legacy Library';

UPDATE Library

SET LibraryName ='Sebring Library'

WHERE LibraryID ='324812';

--select * from Library

UPDATE SECTION

SET LibraryID ='324812'

WHERE SectionID ='401';

UPDATE SECTION

SET DeweyDecimal ='500'

```sql
WHERE SectionID ='405';

--select * from Section

UPDATE BOOKS
SET Title ='Of Mice and Men'
WHERE ISBN ='9780090440764';

UPDATE BOOKS
Set PublisherID ='287354'
WHERE AuthorID = '174287';
--select * from Books

UPDATE JOB
SET JobType ='Library Admin'
WHERE JobID ='503';

UPDATE Job
SET JobDesc ='Controls the library database.'
WHERE JobTYpe ='Library Admin';
--select * from Job

UPDATE Member
SET MemberName = 'Chris Ortiz'
WHERE MemberID = '101';

UPDATE Member
SET DOB ='17/Mar/2001'
WHERE PhoneNumber ='7854135891';
```

```sql
--select * from Member;


UPDATE EMPLOYEE

SET LibraryID = '324812'

WHERE EMPID ='602';


UPDATE EMPLOYEE

SET JOBID = '502'

WHERE MemberID ='104';


--select * from EMPLOYEE


UPDATE MEMBERACCOUNT

SET password ='?kHg]r4%?E}3/AG'

WHERE MemberID='103';


UPDATE MEMBERACCOUNT

SET LibraryID = '389245'

WHERE UserType = 'EMPLOYEE';


--select * from MEMBERACCOUNT


UPDATE BookCheckout

SET TotalCopy = '10'

where CheckoutID ='905';


UPDATE BookCheckout

SET ReturnDate ='03/Apr/2022'
```

Where BorrowedDate ='21/Mar/22';

--select * from BookCheckout

*/

At least 5 query scripts to answer questions about your organization and its operations (40 points)

   Must include at least 2 aggregation queries utilizing group by and order by.

   Should be in various complexity joining two, three, and four tables

*/

```sql
SELECT CONCAT(CONCAT(A.AuthorFirstName, ' '), A.AuthorLastName) as AUTHOR_NAME,

B.Title as BOOK_TITLE, M.MemberName as MEMBER_NAME,

BC.BorrowedDate as DATE_BORROWED

FROM AUTHOR A

JOIN BOOKS B USING (AuthorID)

JOIN BOOKCHECKOUT BC USING (ISBN)

JOIN MEMBER M USING (MEMBERID)

GROUP BY M.MEMBERNAME, B.TITLE, CONCAT(CONCAT(A.AuthorFirstName, ' '), A.AuthorLastName),
BC.BORROWEDDATE

ORDER BY MEMBER_NAME ASC, DATE_BORROWED DESC;
```

--Selects the Author name, book name, and the date checked out of all books that have been checked out

```sql
SELECT PUBLISHERNAME as PUBLISHER_NAME, PUBLISHER_COUNT as BOOKS_PUBLISHED

FROM (

SELECT P.PUBLISHERNAME,
```

```
(SELECT COUNT (B.ISBN)

FROM BOOKS B

JOIN PUBLISHER Pub ON B.PUBLISHERID = Pub.PUBLISHERID

WHERE Pub.PUBLISHERID = P.PUBLISHERID) AS PUBLISHER_COUNT

FROM PUBLISHER P)


GROUP BY PUBLISHERNAME, PUBLISHER_COUNT

ORDER BY PUBLISHER_COUNT DESC, PUBLISHERNAME ASC;
```
--Selects the name of each publisher and counts the number of books they've published

```
SELECT UNIQUE M.MEMBERNAME AS EMPLOYEE_NAME, M.PHONENUMBER AS PHONE_NUMBER,

ROUND(SYSDATE - BC.BORROWEDDATE) AS DAYS_SINCE_CHECKOUT

FROM EMPLOYEE E

JOIN MEMBER M ON E.MEMBERID = M.MEMBERID

JOIN BOOKCHECKOUT BC ON M.MEMBERID = BC.MEMBERID

WHERE BC.RETURNDATE IS NULL

ORDER BY DAYS_SINCE_CHECKOUT DESC, EMPLOYEE_NAME ASC;
```
--Selects the name and phone number of each employee who has not returned a book along with how long ago the book was checked out

```
SELECT CONCAT(CONCAT(AUTHORFIRSTNAME, ' '), AUTHORLASTNAME) AS AUTHOR_NAME, TITLE AS BOOK_TITLE

FROM AUTHOR

JOIN BOOKS USING (AUTHORID)

ORDER BY BOOK_TITLE ASC;
```
--Selects the name of a book along with the name of the author who wrote it

```sql
SELECT CONCAT(CONCAT(A.AUTHORFIRSTNAME, ' '), A.AUTHORLASTNAME) AS AUTHOR_NAME, B.TITLE
AS BOOK_TITLE,

J.JOBDESC as JOB_DESCRIPTION

FROM AUTHOR A

JOIN BOOKS B ON A.AUTHORID = B.AUTHORID

JOIN BOOKCHECKOUT BC ON B.ISBN = BC.ISBN

JOIN MEMBER M ON BC.MEMBERID = M.MEMBERID

JOIN EMPLOYEE E ON M.MEMBERID = E.MEMBERID

JOIN JOB J ON E.JOBID = J.JOBID;

--Selects the author's name, the name of the book, and the job description of the employee who
checked it out




/*

At least 4 scripts (update or insert) to demonstrate that you receive errors from the database because of
the constraints

(integrity, check, referential, not null constraints) implemented in your database.

   One script per constraint type (integrity, check, referential, not null)

*/


INSERT INTO AUTHOR (AuthorID)

VALUES ('489157');

--not null constraint


INSERT INTO AUTHOR
```

VALUES('123456', 'Sam', 'Gibbs', TO_DATE('19/Sep/1997'));

--integrity constraint

UPDATE SECTION

SET DeweyDecimal = 1234

WHERE SectionID = '405';

--CheckDewyIsValid check constraint

INSERT INTO BookCheckout

VALUES('901', '007','9780147512734','4','10',TO_DATE('15/Apr/2022'),TO_DATE('01/May/2022'));

--referential constraint