**DATABASE SCHEMA FOR A STUDENT LIBRARY SCENARIO**

Student(**stud\_no:integer**,stud\_name:string)

Membership(**Mem\_no:integer**,stud\_name:string)

Book(**book\_no:integer**,book\_name:string,author:string)

Iss\_rec(**iss\_no:integer**,iss\_date:date,mem\_no:integer,book\_no:integer)

For the above schema,perform the following:-

**A).** create the tables with the appropriate integrity constraints

**Create the table for student17:**

*create table student17 (stud\_no number(5)primary key,stud\_name varchar(20));*

*Table created.*

**Describe the table:**

*desc student17;*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Object Type](javascript:popupFieldHelp('22156222310565561','1109827695331478','Close')) | **TABLE** | [Object](javascript:popupFieldHelp('22174606305655533','1109827695331478','Close')) | **STUDENT17** |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [STUDENT17](javascript:ret_Column('CSEA17.STUDENT17');) | [STUD\_NO](javascript:ret_Column('STUD_NO');) | Number | - | 5 | 0 | 1 | - | - | - |
|  | [STUD\_NAME](javascript:ret_Column('STUD_NAME');) | Varchar2 | 20 | - | - | - | nullable | - | - |
| |  |  |  |  | | --- | --- | --- | --- | |  |  | 1 - 2 |  | | | | | | | | | | |

**Create the table for book17:**

*create table book17 (book\_no number(5)primary key,book\_name varchar(20),author varchar(10));*

*Table created.*

**Describe the table:**

*desc book17;*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Object Type](javascript:popupFieldHelp('22156222310565561','1109827695331478','Close')) | **TABLE** | [Object](javascript:popupFieldHelp('22174606305655533','1109827695331478','Close')) | **BOOK17** |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [BOOK17](javascript:ret_Column('CSEA17.BOOK17');) | [BOOK\_NO](javascript:ret_Column('BOOK_NO');) | Number | - | 5 | 0 | 1 | - | - | - |
|  | [BOOK\_NAME](javascript:ret_Column('BOOK_NAME');) | Varchar2 | 20 | - | - | - | nullable | - | - |
|  | [AUTHOR](javascript:ret_Column('AUTHOR');) | Varchar2 | 10 | - | - | - | nullable | - | - |
| |  |  |  |  | | --- | --- | --- | --- | |  |  | 1 - 3 |  | | | | | | | | | | |

**Create the tabe for membership17:**

*create table membership17 (mem\_no number(5) primary key,stud\_no number(5) references student17(stud\_no));*

*Table created.*

**Describe the table:**

*desc membership17;*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Object Type](javascript:popupFieldHelp('22156222310565561','1109827695331478','Close')) | **TABLE** | [Object](javascript:popupFieldHelp('22174606305655533','1109827695331478','Close')) | **MEMBERSHIP17** |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [MEMBERSHIP17](javascript:ret_Column('CSEA17.MEMBERSHIP17');) | [MEM\_NO](javascript:ret_Column('MEM_NO');) | Number | - | 5 | 0 | 1 | - | - | - |
|  | [STUD\_NO](javascript:ret_Column('STUD_NO');) | Number | - | 5 | 0 | - | nullable | - | - |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | 1 - 2 |  |  | | | | | | | | | | |

**Create the table for iss\_rec17:**

*create table iss\_rec17(iss\_no number(5)primary key,iss\_date date,mem\_no number(5)references membership17 (mem\_no),book\_no number(5)references book17(book\_no));*

Table created.

**Describe the table:**

*desc iss\_rec17;*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Object Type](javascript:popupFieldHelp('22156222310565561','1109827695331478','Close')) | **TABLE** | [Object](javascript:popupFieldHelp('22174606305655533','1109827695331478','Close')) | **ISS\_REC17** |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [ISS\_REC17](javascript:ret_Column('CSEA17.ISS_REC17');) | [ISS\_NO](javascript:ret_Column('ISS_NO');) | Number | - | 5 | 0 | 1 | - | - | - |
|  | [ISS\_DATE](javascript:ret_Column('ISS_DATE');) | Date | 7 | - | - | - | nullable | - | - |
|  | [MEM\_NO](javascript:ret_Column('MEM_NO');) | Number | - | 5 | 0 | - | nullable | - | - |
|  | [BOOK\_NO](javascript:ret_Column('BOOK_NO');) | Number | - | 5 | 0 | - | nullable | - | - |
| |  |  |  |  | | --- | --- | --- | --- | |  |  | 1 - 4 |  | | | | | | | | | | |

**b).** Insert around 10 records in each of the table.

**Insert a record into student17:**

*insert into student17 values (101,'arun');*

*insert into student17 values (102,'banu');*

*insert into student17 values (103,'calibraj');*

*insert into student17 values (104,'dhanush');*

*insert into student17 values (105,'eliza');*

**View :**

*select \* from student17;*

|  |  |  |
| --- | --- | --- |
| **STUD\_NO** | | **STUD\_NAME** |
| 101 | | arun |
| 102 | | banu |
| 103 | | calibraj |
| 104 | | dhanush |
| 105 | | eliza |
| 5 rows returned in 0.00 seconds | |

**Insert a record in membership17:**

*insert into membership17 values(10,101);*

*insert into membership17 values(11,102);*

*insert into membership17 values(12,103);*

*insert into membership17 values(13,104);*

*insert into membership17 values(14,105);*

**View:**

*select \* from membership17;*

|  |  |  |
| --- | --- | --- |
| **MEM\_NO** | | **STUD\_NO** |
| 10 | | 101 |
| 11 | | 102 |
| 12 | | 103 |
| 13 | | 104 |
| 14 | | 105 |
| 5 rows returned in 0.00 seconds | |  |

**Insert a record in book17:**

*insert into book17 values(1,'dbms book','vkj');*

*insert into book17 values(2,'maths book','veerarajan');*

*insert into book17 values(3,'computer c book','silver');*

*insert into book17 values(4,'ethics book','anantha');*

*insert into book17 values(5,'daa book','jeya');*

**View:**

*select \* from book17;*

|  |  |  |  |
| --- | --- | --- | --- |
| **BOOK\_NO** | | **BOOK\_NAME** | **AUTHOR** |
| 1 | | dbms book | vkj |
| 2 | | maths book | veerarajan |
| 3 | | computer c book | silver |
| 4 | | ethics book | anantha |
| 5 | | daa book | jeya |
| 5 rows returned in 0.00 seconds | |  |

**Insert a record in iss\_rec17:**

*insert into iss\_rec17 values(1001,'08-jan-2019',10,2);*

*insert into iss\_rec17 values(1002,'09-jan-2019',12,4);*

*insert into iss\_rec17 values(1003,'10-jan-2019',11,1);*

*insert into iss\_rec17 values(1004,'11-jan-2019',12,2);*

*insert into iss\_rec17 values(1005,'11-jan-2019',14,5);*

**View :**

*select \* from iss\_rec17;*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ISS\_NO** | | **ISS\_DATE** | **MEM\_NO** | | **BOOK\_NO** | |
| 1001 | | 08-JAN-19 | 10 | | 2 | |
| 1002 | | 09-JAN-19 | 12 | | 4 | |
| 1003 | | 10-JAN-19 | 11 | | 1 | |
| 1004 | | 11-JAN-19 | 12 | | 2 | |
| 1005 | | 11-JAN-19 | 14 | | 5 | |
| 5 rows returned in 0.00 seconds | | |  | |

**C).**Lists all the student names with their membership numbers

*select s.stud\_name,s.stud\_no, m.mem\_no from student17 s,membership17 m where s.stud\_no=m.stud\_no;*

**output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **STUD\_NAME** | | **STUD\_NO** | **MEM\_NO** |
| arun | | 101 | 10 |
| banu | | 102 | 11 |
| calibraj | | 103 | 12 |
| dhanush | | 104 | 13 |
| eliza | | 105 | 14 |
| 5 rows returned in 0.07 seconds | |  |

**D).**List all the issues for the current date with student and book names

*select s.stud\_name,i.iss\_date,i.iss\_no,b.book\_name from student17 s,membership17 m,book17 b,iss\_rec17 i where i.book\_no=b.book\_no and i.mem\_no=m.mem\_no and m.stud\_no=s.stud\_no and i.iss\_date=to\_char('11-jan-2019');*

**Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **STUD\_NAME** | **ISS\_DATE** | **ISS\_NO** | **BOOK\_NAME** |
| calibraj | 11-JAN-19 | 1004 | maths book |
| eliza | 11-JAN-19 | 1005 | daa book |
|  |  |  |  |

**E).** List the details of students who borrowed book whose author is VEERARAJAN.

*select s.stud\_name,s.stud\_no from student17 s,membership17 m,iss\_rec17 i,book17 b where s.stud\_no=m.stud\_no and m.mem\_no=i.mem\_no and b.book\_no=i.book\_no and b.author='veerarajan';*

**Output:**

|  |  |  |
| --- | --- | --- |
| **STUD\_NAME** | | **STUD\_NO** |
| arun | | 101 |
| calibraj | | 103 |
| 2 rows returned in 0.00 seconds | |

**F).**give a count of how many books have been bought by each student.

***1).****select mem\_no,count(book\_no) from iss\_rec17 group by mem\_no;*

**Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **MEM\_NO** | | **COUNT(BOOK\_NO)** | |
| 11 | | 1 | |
| 14 | | 1 | |
| 10 | | 1 | |
| 12 | | 2 | |
| 4 rows returned in 0.00 seconds | |

***2).****select s.stud\_no,count(b.book\_no) from student17 s,membership17 m, iss\_rec17 i,book17 b where m.stud\_no=s.stud\_no and m.mem\_no=i.mem\_no and b.book\_no=i.book\_no group by s.stud\_no;*

**Output:**

|  |  |
| --- | --- |
| **STUD\_NO** | **COUNT(B.BOOK\_NO)** |
| 102 | 1 |
| 101 | 1 |
| 105 | 1 |
| 103 | 2 |

**G)**.give a list of books taken by students with stud\_no as 103.

*select s.stud\_no,b.book\_no,b.book\_name from student17 s,membership17 m,book17 b,iss\_rec17 i where i.book\_no=b.book\_no and i.mem\_no=m.mem\_no and m.stud\_no=s.stud\_no and s.stud\_no=103;*

**Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **STUD\_NO** | | **BOOK\_NO** | **BOOK\_NAME** |
| 103 | | 4 | ethics book |
| 103 | | 2 | maths book |
| 2 rows returned in 0.00 seconds | |  |

**H)**.List the book details which are issued as of today.

*select i.iss\_no,b.book\_no,b.book\_name,b.author from student17 s,membership17 m,book17 b,iss\_rec17 i where s.stud\_no=m.stud\_no and m.mem\_no=i.mem\_no and b.book\_no=i.book\_no and i.iss\_date='10-jan-2019';*

**Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ISS\_NO** | | **BOOK\_NO** | **BOOK\_NAME** | **AUTHOR** |
| 1003 | | 1 | dbms book | vkj |
| 1 rows returned in 0.00 seconds | |  |

**I)**.create a view which lists out the iss\_no,iss\_date,stud\_name,book name

*create view iss\_details17 as select i.iss\_no,i.iss\_date,s.stud\_name,b.book\_name from student17 s,book17 b,membership17 m,iss\_rec17 i where i.mem\_no=m.mem\_no and m.stud\_no=s.stud\_no and i.book\_no=b.book\_no;*

**Output:**

View created.

**VIEW:**

*select \* from iss\_details17;*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ISS\_NO** | | **ISS\_DATE** | **STUD\_NAME** | **BOOK\_NAME** |
| 1001 | | 08-JAN-19 | arun | maths book |
| 1002 | | 09-JAN-19 | calibraj | ethics book |
| 1003 | | 10-JAN-19 | banu | dbms book |
| 1004 | | 11-JAN-19 | calibraj | maths book |
| 1005 | | 11-JAN-19 | eliza | daa book |
| 5 rows returned in 0.00 seconds | |  |