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#********* Library Management system**********

 # creating database
 create database Library_Management;
 # using database
 use Library_Management;
 # creating publisher table
 create table tbl_publisher (publisher_PublisherName varchar(255)
primary key,
 publisher_PublisherAddress
text,
 publisher_PublisherPhone
varchar(15));
 # Loaded publisher data
 select * from tbl_publisher;
 # creating borrower table
 create table tbl_borrower (
 borrower_CardNo int primary
key auto_increment,
                           borrower_BorrowerName varchar(255),
                           borrower_BorrowerAddress text,
                           borrower_BorrowerPhone varchar(15));

  # loaded borrower data.
 select * from tbl_borrower;
 # creating library branch table
 create table tbl_library_branch (

library_branch_BranchID int primary key auto_increment,
                                  library_branch_BranchName
varchar(255),
                                  library_branch_BranchAddress
text);
 # loaded library branch data.
 select * from tbl_library_branch;
 # creating book table
 create table tbl_book (book_BookID int primary key
auto_increment,
 book_Title varchar(255),
 book_PublisherName varchar(255),
                         foreign key (book_PublisherName)
references tbl_publisher(publisher_PublisherName)
                         on update cascade on delete cascade);
# loaded book data.
 select * from tbl_book;
 # creating book authors table
 create table tbl_book_authors (book_authors_AuthorID int primary
key auto_increment,
 book_authors_BookID
int,
 book_authors_AuthorName varchar(255),
                                 foreign key (book_authors_BookID)
references tbl_book(book_BookID)
                                 on update cascade on delete
cascade);
 # loaded book authors data.
 select * from tbl_book_authors;
 # creating book copies table
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 create table tbl_book_copies (book_copies_CopiesID int primary
key auto_increment,
  book_copies_BookID int,
                              book_copies_BranchID int,
                              book_copies_No_Of_Copies int,
                              foreign key (book_copies_BookID)
references tbl_book(book_BookID)
                              on update cascade on delete
cascade,
                              foreign key (book_copies_BranchID)
references tbl_library_branch(library_branch_BranchID)
                              on update cascade on delete
cascade);
 # loaded book copies data.
 select * from tbl_book_copies;
 # creating book loans table
 create table tbl_book_loans (book_loans_LoansID int primary key
auto_increment,
 book_loans_BookID int,
                             book_loans_BranchID int,
                             book_loans_CardNo int,
                             book_loans_DateOut DATE,
                             book_loans_DueDate DATE,
                             foreign key (book_loans_BookID)
references  tbl_book(book_BookID)
                             on update cascade on delete cascade,
                             foreign key (book_loans_BranchID)
references tbl_library_branch(library_branch_BranchID)
                             on update cascade on delete cascade,
                            foreign key (book_loans_CardNo)
references tbl_borrower(borrower_CardNo)
 on update cascade on delete
cascade);
 # loaded book loans data.
 select * from tbl_book_loans;
 /* 1. How many copies of the book titled "The Lost Tribe" are
owned by the library branch whose name is "Sharpstown"?*/
 with cte_1 as (select * from tbl_book inner join tbl_book_copies
on tbl_book.book_BookID = tbl_book_copies.book_copies_BookID),
 cte_2 as (select * from cte_1 inner join tbl_library_branch on
cte_1.book_copies_branchid =
tbl_library_branch.library_branch_branchid),
 cte_3 as (select * from cte_2 where library_branch_branchname =
"Sharpstown")
 select book_copies_no_of_copies from cte_3 where book_title =
"The Lost Tribe";
-- 2.How many copies of the book titled "The Lost Tribe" are owned by
each library branch?

 with cte_1 as (select * from tbl_book inner join tbl_book_copies
on tbl_book.book_BookID = tbl_book_copies.book_copies_BookID),
 cte_2 as (select * from cte_1 inner join tbl_library_branch on
cte_1.book_copies_branchid =
tbl_library_branch.library_branch_branchid),
 cte_3 as (select * from cte_2 where book_title = "The Lost
Tribe")
 select library_branch_branchname,sum(book_copies_no_of_copies)
from cte_3 group by library_branch_branchname;
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-- 3. Retrieve the names of all borrowers who do not have any books
checked out.

 with cte_1 as (select * from tbl_borrower b left join
tbl_book_loans bl on b.borrower_cardno = bl.book_loans_cardno)
 select borrower_borrowername from cte_1 where book_loans_cardno
is null;
/*4. For each book that is loaned out from the "Sharpstown"
branch and whose DueDate is 2/3/18, --
retrieve the book title, the borrower's name, and the
borrower's address.*/
with cte_1 as (select * from tbl_library_branch lb inner join
tbl_book_loans bl on lb.library_branch_branchid =
bl.book_loans_branchid),
 cte_2 as (select * from cte_1 where book_loans_duedate =
"2018-02-03" and library_branch_branchname = "Sharpstown"),
 cte_3 as (select * from cte_2 inner join tbl_book b on cte_2
 .book_loans_bookid = b.book_bookid)
 select book_title,borrower_borrowername,borrower_borroweraddress
from cte_3 inner join tbl_borrower br on cte_3.book_loans_cardno
= br.borrower_cardno;
/* 5. For each library branch, retrieve the branch name and the
total number of books loaned out from that branch.*/
 with cte_1 as (select * from tbl_library_branch lb inner join
tbl_book_loans bl on lb.library_branch_branchid =
bl.book_loans_branchid)
 select library_branch_branchname,count(book_loans_loansid) as
Total_no_of_books_loanedout from cte_1 group by
library_branch_branchname;
/* 6. Retrieve the names, addresses, and number of books checked
out for all borrowers who have more than five books checked out.*/
 with cte_1 as (select * from tbl_borrower b inner join
tbl_book_loans bl on b.borrower_cardno = bl.book_loans_cardno)
 select
borrower_borrowername,borrower_borroweraddress,count(book_loans_loansid)
 as no_of_books_checkedout from cte_1 group by
borrower_cardno having no_of_books_checkedout>5;
/* 7. For each book authored by "Stephen King", retrieve the
title and the number of copies owned by the library branch whose
name is "Central".*/
 with cte_1 as (select * from tbl_book b inner join
tbl_book_authors ba on b.book_bookid = ba.book_authors_bookid),
 cte_2 as (select * from cte_1 inner join tbl_book_copies bc on
cte_1.book_bookid = bc.book_copies_bookid where
book_authors_authorname = "Stephen King"),
 cte_3 as (select * from cte_2 inner join tbl_library_branch lb on
cte_2.book_copies_branchid = lb.library_branch_branchid)
 select book_title,book_copies_no_of_copies from cte_3 where
 library_branch_branchname = "Central";
library_branch_branchname = "Central";
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