CS 213: System Software Lab
Autumn 2024, IIT Dharwad
Assignment-6

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1) Given Two tables **Passenger** which provides details about each passenger and **Reservation** which records the reservations made by passengers where, AC is Air Conditioned class and SC is Sleeper Class. **[15 Marks]**

Passenger

pid	pname	age
0	'Sachin'	65
1	'Rahul'	66
2	'Sourav'	67
3	'Anil'	69

Reservation

pid	class	tid
0	'AC'	8200
1	'AC'	8201
2	'SC'	8201
2	'SC'	8204
3	'AC'	8202

a. Create the above tables and insert the values in the table. The format of the table creation and insertion of the values in the table is given in the **instruction** follow them accordingly. Attach appropriate screenshot. **[5 Marks]**

b. Answer the following questions: **[5 x 2 = 10 Marks]**

i) List all passengers with their age, reservation class and ticket ID, including those who may not have any reservations.

ii) Retrieve the reservation class and the total number of passengers in each reservation class.

iii) Retrieve the name and age of passengers above the age of 65 and who have an "AC" reservation.

iv) Retrieve the ticket IDs that are associated with more than one passenger.

v) Retrieve the reservation class and the average age of passengers in each reservation class.

2) Given 5 tables **Books** which store details about books in the library, **Authors** which stores information about authors, **Members** which stores library member's information, **Borrowing** which records when a member borrows a book, **BookAuthors** which represents Many-to-Many relationship table between books and authors. **[25 Marks]**

Books

book_id	title	genre	year_published
1	'To Kill a Mockingbird'	'Fiction'	1960
2	'1984'	'Dystopian'	1949
3	'Pride and Prejudice'	'Romance'	1813
4	'The Great Gatsby'	'Fiction'	1925
5	'Moby-Dick'	'Adventure'	1851
6	'War and Peace'	'Historical Fiction'	1869
7	'The Catcher in the Rye'	'Fiction'	1951

Authors

author_id	name	nationality
1	'Harper Lee'	'American'
2	'George Orwell'	'British'
3	'Jane Austen'	'British'
4	'F. Scott Fitzgerald'	'American'
5	'Herman Melville'	'American'
6	'Leo Tolstoy'	'Russian'
7	'J.D. Salinger'	'American'

Members

member_id	name	membership_date	membership_type
1	'Alice Johnson'	'2023-01-15'	'Regular'
2	'Bob Smith'	'2023-02-10'	'Premium'
3	'Carol Williams'	'2023-03-05'	'Regular'
4	'David Brown'	'2023-04-20'	'Premium'
5	'Eve Davis'	'2023-05-15'	'Regular'

Borrowing

borrow_id	member_id	book_id	borrow_date	return_date
1	1	1	'2023-07-01'	'2023-07-15'
2	2	2	'2023-07-05'	'2023-07-20'
3	3	3	'2023-07-10'	'2023-07-24'
4	4	1	'2023-07-12'	'2023-07-26'
5	5	2	'2023-07-15'	'2023-07-29'

BookAuthors

book_id	author_id
1	1
2	2
3	3
4	4
5	5
6	6

a) Create the above tables and insert the values in the table. The format of the table creation and insertion of the values in the table is given in the **instruction** follow them accordingly. Attach appropriate screenshot. **[5 Marks]**

b) Answer the following questions: **[10 x 2 = 20 Marks]**

i) Retrieve the title, genre, borrow_date, and return_date of all books borrowed by the member named "Alice Johnson".

ii) Display each book title along with the author's name.

iii) Retrieve the member_name and the number of books borrowed by each member.

iv) Retrieve the genre and the number of times it has been borrowed, focusing on the genre that has been borrowed the most.

v) Retrieve the title of books that have not been borrowed by any member.

vi) Retrieve the name of members, the title of the books, and the borrow_date for all books borrowed before July 10, 2023.

vii) Display authors who have written more than one book.

viii) Retrieve the book_id, title of the book, genre, published year, author name, and author nationality for books published before the year 1925.

ix) List members who have borrowed books from more than one genre, showing the member's name and the number of unique genres they have borrowed from.

x) Retrieve the nationality of authors whose books are currently being borrowed by members, along with the count of how many times those books have been borrowed.

Instructions:

- Posted on: 30/10/2024
- Due date: 5th November 2024 (11:59 PM)
- The assignment is available in the drive folder and in the moodle.
- The mode of submission is Moodle. Any other kind of submissions are not accepted.
- Save all the solutions in the single pdf (Ex: roll_number.pdf):
  A **Sample.pdf** is provided for your reference. Any violation of this will result in a 50% penalty.
- There will be a 100% penalty for plagiarism.
- Introducing irrelevant code is considered as malpractice.
- Late submission files are not considered for evaluation.