

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

- 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]**
- Retrieve the title, genre, borrow_date, and return_date of all books borrowed by the member named "Alice Johnson".
 - Display each book title along with the author's name.
 - Retrieve the member_name and the number of books borrowed by each member.
 - Retrieve** the genre and the number of times it has been borrowed, focusing on the genre that has been borrowed the most.
 - Retrieve the title of** books that have not been borrowed by any member.
 - Retrieve the name of members, the title of the books, and the borrow_date for all books borrowed before July 10, 2023.
 - Display authors who have written more than one book.
 - Retrieve the book_id, title of the book, genre, published year, author name, and author nationality for books published before the year 1925.
 - 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.
 - 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.