# Name

**CS 425 – Database Organization HW 1**

**Submission:** Individual effort and submit

**Instructions** Try to answer all the questions using what you have learned in class. Please make your query general not data related

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Staff** | | **Reservation** | | |
| |  |  | | --- | --- | | **sID** | **sName** | | S1 | Joan | | S2 | Pam | | S3 | Greg | | | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **bID** | **mID** | **sId** | **Quantity** | **numberOfDays** | **Status** | | b1 | M2 | S1 | 1 | 1 | Closed | | b2 | M3 | S1 | 2 | 2 | PassDue | | b2 | M1 | S3 | 1 | 2 | Closed | | | |
| **Member** | | **Book** |
| |  |  | | --- | --- | | **mID** | **mName** | | M1 | Sam | | M2 | Paul | | M3 | Ron | | M4 | Laura | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **bID** | **bTittle** | **numberOfCopy** | **Category** | **bAuthor** | | b1 | Algorithm | 2 | Math | Aline | | b2 | Database | 3 | CS | Sean | | b3 | Gone with the wind | 4 | Fiction | John | |

Question 1 (3 Points)

Write a relational algebra expression that returns the name of the member that borrowed a book titled ‘Algorithm ‘

Question 2 (3 Points) Write a relational algebra expression that returns the name of members that never borrowed any book

Question 3 (5 Points) Write a relational algebra expression that return the name of members that borrowed all the books available in the library

Question 4 (5 Points)

Write a relational algebra expression that returns the member’s name that never borrowed any book authored by ‘Aline’

Question 5 (5 Points)

Write a relational algebra expression that return the member’s name that borrowed at least 10 books so far (10 or more different books)

Question 6 (5 Points)

Write a relational algebra expression that returns the member’s name that borrowed more ‘fiction’ books than ‘math’.

Question 7 (3 Points)

Write a relational algebra expression that returns the name of Staff that assisted checkout books for ‘Sam’.

Question 8 (4 Points)

Write a relational algebra expression that returns the staff’s name that never served any member

Question 9 (4 Points)

Write a relational algebra expression that returns memeber’s name and the average number of days they borrowed books for

Question 10 (4 Points)

Write a relational algebra expression that returns the book category that ‘Sam ‘never borrowed

Question 11 (5 Points) Write a relational algebra expression that returns member names that on average borrow books for the longest period

Question 12 (4 points) Write a relational algebra expression that returns the staff names that served all the members