PART – A

The table shown below displays some details of client bookings for taxis.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| JobID | JobDate | JobTime | DriverID | DriverName | TaxiID | ClientID | ClientName | JobPickUpAddress |
| 1 | 7/25/2014 | 10 | D1 | Joe Bull | T1 | C1 | Anne Woo | 1 Storrie Rd, Paisley |
| 2 | 7/25/2014 | 17 | D2 | Tom Win | T2 | C1 | Anne Woo | 3 High Street, Paisley |
| 3 | 7/29/2014 | 10 | D1 | Joe Bull | T1 | C1 | Anne Woo | 1 Storrie Rd, Paisley |
| 4 | 8/02/2014 | 05 | D1 | Joe Bull | T1 | C4 | Karen Bow | 3 High Street, Paisley |
| 5 | 8/02/2014 | 13 | D3 | Jim Jones | T3 | C2 | Mark Tin | 1A Lady Lane, Paisley |
| 6 | 8/02/2014 | 13 | D4 | Steven Win | T1 | C3 | John Seal | 22 Red Road, Paisley |
| 7 | 8/25/2014 | 10 | D2 | Tom Win | T2 | C5 | Karen Bow | 17 High Street, Paisley |

NORMALIZED FORM

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| JobID | JobDate | JobTime | DriverID | TaxiID | ClientID | JobPickUpAddress |
| 1 | 7/25/2014 | 10 | D1 | T1 | C1 | 1 Storrie Rd, Paisley |
| 2 | 7/29/2014 | 10 | D1 | T1 | C1 | 1 Storrie Rd, Paisley |
| 3 | 8/30/2014 | 11 | D2 | T2 | C1 | 3 High Street, Paisley |
| 4 | 8/02/2014 | 13 | D3 | T3 | C2 | 1A Lady Lane, Paisley |
| 5 | 8/02/2014 | 13 | D4 | T1 | C3 | 22 Red Road, Paisley |
| 6 | 8/25/2014 | 10 | D2 | T2 | C4 | 17 High Street, Paisley |
| 7 | 8/25/2014 | 10 | D2 | T2 | C4 | 17 High Street, Paisley |

CLIENT DETAILS

|  |  |  |
| --- | --- | --- |
| **ClientID (PK)** | Varchar(10) | NOT NULL |
| Client\_Name | char(50) | not null |

CLIENT DETAILS

|  |  |
| --- | --- |
| ClientID | Client\_Name |
| C1 | Anne Woo |
| C2 | Mark Tin |
| C3 | John Seal |
| C4 | Karen Bow |

DRIVER DETAILS

|  |  |  |
| --- | --- | --- |
| **DRIVERID (PK)** | Varchar(10) | NOT NULL |
| Driver\_Name | char(50) | not null |

DRIVER DETAILS

|  |  |
| --- | --- |
| DriverID | Driver\_Name |
| D1 | Joe Bull |
| D2 | Tom Win |
| D3 | Jim Jones |
| D4 | Steven Win |

|  |  |  |
| --- | --- | --- |
| FAST CAB |  |  |
| Column Name | Data Type | Constraints |
| **JobID – PK** | INT | not NULL |
| **JobDate - FK** | INT | not NULL |
| JobTime | INT | not NULL |
| **DriverID –FK** | varchar(10) | not NULL |
| TaxiID | varchar(10) | not NULL |
| **ClientID - FK** | varchar(10) | not NULL |
| JobPickUpAddress | varchar(100) | not NULL |

2)

|  |  |  |  |
| --- | --- | --- | --- |
| BOOK |  |  |  |
| **ISBN** | TITLE | EDITION | YEAR |
|  |  |  |  |
|  |  |  |  |
| BOOK COPY |  |  |  |
| **COPY NO** | **ISBN** | AVAILABLE |  |
|  |  |  |  |
|  |  |  |  |
| BORROWER |  |  |  |
| **BORROWER NO** | BORROWER NAME | BORROWER ADDRESS |  |
|  |  |  |  |
|  |  |  |  |
| BOOK LOAN |  |  |  |
| **COPY NO** | **DATE OUT** | DATE DUE | **BORROWER NO** |

PART – B

1. List all book titles.

 Title (BOOK)

1. List all book titles published by "Addison Wesley".

RESULT 1 🡨( Name = ‘Addison Wesley' (PUBLISHER))

FINAL 🡨Title (RESULT1)

1. List the book titles, and branch names, at each branch where all copies of that title are available for borrowing.

Result1 ←  ISBN, copy-no (BOOK COPY) BOOK COPY.ISBN =BOOK.ISBN ( ISBN, title (BOOK))

FINAL 🡨 **(**Branch\_name (Library\_Branch)  Result1)

OR

Result1 ← (title (Book))  Book.ISBN = BookCopy.ISBN (available = ‘yes’ (BookCopy))

Final ← (Branch\_name (Library\_Branch)  Result1)

1. (b) How many copies of the book titled The Lost Tribe are owned by each library branch?

RESULT 1 🡨( Title = ‘The Lost Tribe' (BOOK)) BOOK\_COPIES



FINAL 🡨Branch\_id, No\_of\_copies (RESULT1)

1. (a) How many copies of the book titled The Lost Tribe are owned by the library branch whose name is "Sharpstown"?

RESULT 1 🡨  Branch\_id ( Branch\_name = 'Sharpstown' (LIBRARY\_BRANCH))

RESULT 2 🡨  Book\_id (( Title='The Lost Tribe' (BOOK))

FINAL 🡨  No\_of\_copies (BOOK\_COPIES RESULT 1 RESULT 2)



1. List the names of borrowers with overdue books. (Assume currentDate has today's date.)

RESULT 1 🡨 name (BORROWER)

FINAL 🡨  Card\_no, due\_date<10/04/2015 (Book\_loans)  RESULT 1

OR

Borrower.borrowerName (Borrower))  Borrower.borrowerNo = BookLoan.borrowerNo (duedate < 10/04/2015 (BorrowerLoan))

OR

FINAL🡨 BORROWER Name (Result1) 🡨  (BORROWER NAME,BORROWER NO **(BORROWER))**  **BORROWER.** BORROWER NO = BOOK LOAN**.** BORROWER NO ( BORROWER NO, due\_date (< due\_date =10/04/2015 > (BOOK LOAN))

1. (c) Retrieve the names of all borrowers who do not have any books checked out.

RESULT 1 🡨  Card\_no (BORROWER) -  Card\_no (BOOK\_LOANS)

FINAL 🡨  Name (BORROWER RESULT 1)



1. (d) For each book that is loaned out from the "Sharpstown" branch and whose due date is today, retrieve the book title, the borrower's name, and the borrower's address. (Assume currentDate has today's date.)

RESULT 1 🡨  Branch\_id ( Branch\_name = 'Sharpstown' (LIBRARY\_BRANCH))

RESULT 2 🡨  Book\_id, Card\_no ((Due\_date='10/04/2015' (BOOK\_LOANS)) RESULT 1)



FINAL 🡨  Title, Name, Address (BOOK BORROWER RESULT 2)



1. (g) For each book authored (or co-authored) by "Stephen King", retrieve the title and the number of copies owned by the library branch whose name is "Central".

RESULT 1 🡨  Book\_id, Title ( Author\_name='Stephen King' (BOOK\_AUTHORS)) BOOK)



RESULT 2 🡨  Branch\_id ( Branch\_name=‘Central' (LIBRARY\_BRANCH))

FINAL 🡨  Title, No\_of\_copies (RESULT 1 RESULT 2 BOOK\_COPIES)



1. List all book titles that have been borrowed by "Peter Bloomfield".

Title (Book)) ( Book.ISBN = BookCopy.ISBN ( BookCopy.copyNo = BookLoan.copyNo

( BookLoan.borrowerNo = Borrower.borrowerName ( Borrower.borrowerName = ‘Peter Bloomfield’ (Borrower)))))

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



