

ASSIGNMENT-1

KANCHANA BHARGAV

G-8-DS

1. Create Schema Library

```
bhargav@bhargav-ram: ~  
Your MariaDB connection id is 55  
Server version: 10.3.38-MariaDB-0ubuntu0.20.04.1 Ubuntu 20.04  
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
MariaDB [(none)]> show databases;  
+-----+  
| Database |  
+-----+  
| employee |  
| information_schema |  
| library |  
| mysql |  
| performance_schema |  
+-----+  
5 rows in set (0.001 sec)  
  
MariaDB [(none)]> create database library1;  
Query OK, 1 row affected (0.000 sec)  
  
MariaDB [(none)]> show databases;  
+-----+  
| Database |  
+-----+  
| employee |  
| information_schema |  
| library |  
| library1 |  
| mysql |  
| performance_schema |  
+-----+  
6 rows in set (0.001 sec)  
  
MariaDB [(none)]> use library1;  
Database changed  
MariaDB [library1]> 
```

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2. Create tables

Books: BookID – Pk,BookName,AuthorName,Genre,pages2. Create tables

Books: BookID - Pk,BookName,AuthorName,Genre,pages

Customers : CustomerId - PK, CustomerName, address

BooksBorrowed:SlNo,BookID - FK,CustomerID -

FK,DaysBookRetained

Cost: MaxPages, Cost/day

```
MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| employee |
| information_schema |
| library |
| library1 |
| mysql |
| performance_schema |
+-----+
6 rows in set (0.001 sec)

MariaDB [(none)]> use library1;
Database changed
MariaDB [library1]> create table books (bookid int primary key, bookname varchar(255), authorname varchar(255), genre varchar(50), pages int);
Query OK, 0 rows affected (0.323 sec)

MariaDB [library1]> create table customers (customerid int primary key, customername varchar(255), address varchar(255));
Query OK, 0 rows affected (0.278 sec)

MariaDB [library1]> create table booksborrowed (slno int , bookid int, customerid int, daysbookretained int, foreign key (bookid) references books(bookid), foreign key (customerid) references customers(customerid));
Query OK, 0 rows affected (0.537 sec)

MariaDB [library1]> create table cost (maxpages int, costperday int);
Query OK, 0 rows affected (0.298 sec)

MariaDB [library1]> |
```

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3.3. Google Search for books along with authors, genre and pages.

Insert atleast 5 authors and 5 different genres into Books Table. Make sure you have atleast 30 records.

```
bhargav@bhargav-ram: ~  
MariaDB [library1]> select * from books;  
Empty set (0.315 sec)  
  
MariaDB [library1]> INSERT INTO books (bookid, bookname, authorname, genre, pages) VALUES (1, 'The Great Gatsby', 'F. Scott Fitzgerald', 'Fiction', 180),  
-> (2, 'To Kill a Mockingbird', 'Harper Lee', 'Fiction', 281),  
-> (3, '1984', 'George Orwell', 'Dystopian', 328),  
-> (4, 'Pride and Prejudice', 'Jane Austen', 'Romance', 432),  
-> (5, 'The Catcher in the Rye', 'J.D. Salinger', 'Fiction', 224),  
-> (6, 'The Hobbit', 'J.R.R. Tolkien', 'Fantasy', 310),  
-> (7, 'Harry Potter and the Sorcerer's Stone', 'J.K. Rowling', 'Fantasy', 320),  
-> (8, 'The Da Vinci Code', 'Dan Brown', 'Mystery', 454),  
-> (9, 'The Lord of the Rings', 'J.R.R. Tolkien', 'Fantasy', 1178),  
-> (10, 'The Hunger Games', 'Suzanne Collins', 'Dystopian', 374),  
-> (11, 'The Shining', 'Stephen King', 'Horror', 447),  
-> (12, 'Brave New World', 'Aldous Huxley', 'Dystopian', 311),  
-> (13, 'Moby-Dick', 'Herman Melville', 'Adventure', 635),  
-> (14, 'The Road', 'Cormac McCarthy', 'Post-apocalyptic', 287),  
-> (15, 'The Chronicles of Narnia', 'C.S. Lewis', 'Fantasy', 767),  
-> (16, 'Wuthering Heights', 'Emily Brontë', 'Gothic', 342),  
-> (17, 'Frankenstein', 'Mary Shelley', 'Gothic', 280),  
-> (18, 'The Girl with the Dragon Tattoo', 'Stieg Larsson', 'Mystery', 465),  
-> (19, 'One Hundred Years of Solitude', 'Gabriel García Márquez', 'Magical Realism', 417),  
-> (20, 'The Picture of Dorian Gray', 'Oscar Wilde', 'Gothic', 254),  
-> (21, 'Fahrenheit 451', 'Ray Bradbury', 'Dystopian', 249),  
-> (22, 'The Hitchhiker's Guide to the Galaxy', 'Douglas Adams', 'Science Fiction', 224),  
-> (23, 'The Kite Runner', 'Khaled Hosseini', 'Drama', 371),  
-> (24, 'The Road Not Taken', 'Robert Frost', 'Poetry', 64),  
-> (25, 'The Odyssey', 'Homer', 'Epic', 475),  
-> (26, 'The Count of Monte Cristo', 'Alexandre Dumas', 'Adventure', 1276),  
-> (27, 'A Tale of Two Cities', 'Charles Dickens', 'Historical Fiction', 489),  
-> (28, 'The Alchemist', 'Paulo Coelho', 'Fantasy', 197),  
-> (29, 'The Stand', 'Stephen King', 'Post-apocalyptic', 1153),  
-> (30, 'The War of the Worlds', 'H.G. Wells', 'Science Fiction', 224);  
Query OK, 30 rows affected (0.081 sec)  
Records: 30 Duplicates: 0 Warnings: 0
```

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```
bhargav@bhargav-ram: ~  
MariaDB [library1]> select * from books;
```

bookid	bookname	authername	genre	pages
1	The Great Gatsby	F. Scott Fitzgerald	Fiction	180
2	To Kill a Mockingbird	Harper Lee	Fiction	281
3	1984	George Orwell	Dystopian	328
4	Pride and Prejudice	Jane Austen	Romance	432
5	The Catcher in the Rye	J.D. Salinger	Fiction	224
6	The Hobbit	J.R.R. Tolkien	Fantasy	310
7	Harry Potter and the Sorcerer's Stone	J.K. Rowling	Fantasy	320
8	The Da Vinci Code	Dan Brown	Mystery	454
9	The Lord of the Rings	J.R.R. Tolkien	Fantasy	1178
10	The Hunger Games	Suzanne Collins	Dystopian	374
11	The Shining	Stephen King	Horror	447
12	Brave New World	Aldous Huxley	Dystopian	311
13	Moby-Dick	Herman Melville	Adventure	635
14	The Road	Cormac McCarthy	Post-apocalyptic	287
15	The Chronicles of Narnia	C.S. Lewis	Fantasy	767
16	Wuthering Heights	Emily Brontë	Gothic	342
17	Frankenstein	Mary Shelley	Gothic	280
18	The Girl with the Dragon Tattoo	Stieg Larsson	Mystery	465
19	One Hundred Years of Solitude	Gabriel García Márquez	Magical Realism	417
20	The Picture of Dorian Gray	Oscar Wilde	Gothic	254
21	Fahrenheit 451	Ray Bradbury	Dystopian	249
22	The Hitchhiker's Guide to the Galaxy	Douglas Adams	Science Fiction	224
23	The Kite Runner	Khaled Hosseini	Drama	371
24	The Road Not Taken	Robert Frost	Poetry	64
25	The Odyssey	Homer	Epic	475
26	The Count of Monte Cristo	Alexandre Dumas	Adventure	1276
27	A Tale of Two Cities	Charles Dickens	Historical Fiction	489
28	The Alchemist	Paulo Coelho	Fantasy	197
29	The Stand	Stephen King	Post-apocalyptic	1153
30	The War of the Worlds	H.G. Wells	Science Fiction	224

30 rows in set (0.001 sec)

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4. Insert 15 customers into customer table by providing appropriate details

```
bhargav@bhargav-ram: ~  
MariaDB [library1]> INSERT INTO customers (customerid, customername, address) VALUES (1, 'Ram Kumar', '123 Main Street'),  
-> (2, 'Bhargav Reddy', '456 Oak Avenue'),  
-> (3, 'Suresh Raj', '789 Pine Lane'),  
-> (4, 'Vamsi Krishna', '101 Elm Street'),  
-> (5, 'Sita Sharma', '234 Maple Drive'),  
-> (6, 'Yashoda Devi', '567 Cedar Road'),  
-> (7, 'Lakshmi Patel', '890 Birch Court'),  
-> (8, 'Ramy Venkatesh', '111 Pine Lane'),  
-> (9, 'Bhargavi Naidu', '222 Oak Avenue'),  
-> (10, 'Suresh Babu', '333 Cedar Road'),  
-> (11, 'Vamsi Chandra', '444 Elm Street'),  
-> (12, 'Sita Devi', '555 Maple Drive'),  
-> (13, 'Yashoda Reddy', '666 Birch Court'),  
-> (14, 'Lakshmi Sharma', '777 Pine Lane'),  
-> (15, 'Ramachandra Naidu', '888 Oak Avenue');  
Query OK, 15 rows affected (0.167 sec)  
Records: 15  Duplicates: 0  Warnings: 0  
  
MariaDB [library1]> select * from customers;  
+-----+-----+-----+  
| customerid | customername | address |  
+-----+-----+-----+  
| 1 | Ram Kumar | 123 Main Street |  
| 2 | Bhargav Reddy | 456 Oak Avenue |  
| 3 | Suresh Raj | 789 Pine Lane |  
| 4 | Vamsi Krishna | 101 Elm Street |  
| 5 | Sita Sharma | 234 Maple Drive |  
| 6 | Yashoda Devi | 567 Cedar Road |  
| 7 | Lakshmi Patel | 890 Birch Court |  
| 8 | Ramya Venkatesh | 111 Pine Lane |  
| 9 | Bhargavi Naidu | 222 Oak Avenue |  
| 10 | Suresh Babu | 333 Cedar Road |  
| 11 | Vamsi Chandra | 444 Elm Street |  
| 12 | Sita Devi | 555 Maple Drive |  
| 13 | Yashoda Reddy | 666 Birch Court |  
| 14 | Lakshmi Sharma | 777 Pine Lane |  
| 15 | Ramachandra Naidu | 888 Oak Avenue |  
+-----+-----+-----+
```

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5. Using BookId in Books Table and CustomerID in Customer Table insert data into BooksBorrowed table to have atleast 50 records.

```

bhargav@bhargav-ram: ~
ERROR 1050 (42301): Table 'booksborrowed' already exists
MariaDB [library1]> INSERT INTO booksborrowed (slno, bookid, customerid, daysbookretained) VALUES (1, 1, 1, 14),
-> (2, 2, 2, 21),
-> (3, 3, 3, 7),
-> (4, 4, 4, 30),
-> (5, 5, 5, 14),
-> (6, 6, 6, 21),
-> (7, 7, 7, 7),
-> (8, 8, 8, 30),
-> (9, 9, 9, 14),
-> (10, 10, 10, 21),
-> (11, 11, 11, 7),
-> (12, 12, 12, 30),
-> (13, 13, 13, 14),
-> (14, 14, 14, 21),
-> (15, 15, 15, 7),
-> (16, 16, 1, 30),
-> (17, 17, 2, 14),
-> (18, 18, 3, 21),
-> (19, 19, 4, 7),
-> (20, 20, 5, 30),
-> (21, 21, 6, 14),
-> (22, 22, 7, 21),
-> (23, 23, 8, 7),
-> (24, 24, 9, 30),
-> (25, 25, 10, 14),
-> (26, 26, 11, 21),
-> (27, 27, 12, 7),
-> (28, 28, 13, 30),
-> (29, 29, 14, 14),
-> (30, 30, 15, 21),
-> (31, 1, 1, 7),
-> (32, 2, 2, 30),
-> (33, 3, 3, 14),
-> (34, 4, 4, 21),
-> (35, 5, 5, 7),
-> (36, 6, 6, 30),
-> (37, 7, 7, 14),
-> (38, 8, 8, 21),
-> (39, 9, 9, 7),
-> (40, 10, 10, 30),
-> (41, 11, 11, 14),
-> (42, 12, 12, 21),
-> (43, 13, 13, 7),
-> (44, 14, 14, 30),
-> (45, 15, 15, 14),
-> (46, 16, 1, 21),
-> (47, 17, 2, 7),
-> (48, 18, 3, 30),
-> (49, 19, 4, 14),
-> (50, 20, 5, 21);
Query OK, 50 rows affected (0.187 sec)
Records: 50 Duplicates: 0 Warnings: 0
```

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```
MariaDB [library1]> select * from booksborrowed;
```

slno	bookid	customerid	daysbookretained
1	1	1	14
2	2	2	21
3	3	3	7
4	4	4	30
5	5	5	14
6	6	6	21
7	7	7	7
8	8	8	30
9	9	9	14
10	10	10	21
11	11	11	7
12	12	12	30
13	13	13	14
14	14	14	21
15	15	15	7
16	16	1	30
17	17	2	14
18	18	3	21
19	19	4	7
20	20	5	30
21	21	6	14
22	22	7	21
23	23	8	7
24	24	9	30
25	25	10	14
26	26	11	21
27	27	12	7
28	28	13	30
29	29	14	14
30	30	15	21
31	1	1	7
32	2	2	30
33	3	3	14
34	4	4	21
35	5	5	7
36	6	6	30
37	7	7	14
38	8	8	21
39	9	9	7
40	10	10	30
41	11	11	14
42	12	12	21
43	13	13	7
44	14	14	30
45	15	15	14
46	16	1	21
47	17	2	7
48	18	3	30
49	19	4	14
50	20	5	21

```
50 rows in set (0.001 sec)
```

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6. Retrieve the total number of books in each genre.

```
MariaDB [library1]> --Retrieve the total number of books in each genre.
MariaDB [library1]> select genre,count(*) from books group by genre;
```

genre	count(*)
Adventure	2
Drama	1
Dystopian	4
Epic	1
Fantasy	5
Fiction	3
Gothic	3
Historical Fiction	1
Horror	1
Magical Realism	1
Mystery	2
Poetry	1
Post-apocalyptic	2
Romance	1
Science Fiction	2

```
15 rows in set (0.084 sec)
```

7. Retrieve total number of books borrowed.

```
MariaDB [library1]> --Retrieve total number of books borrowed.
MariaDB [library1]> SELECT COUNT(*) AS total_books_borrowed
-> FROM booksborrowed;
```

total_books_borrowed
50

```
1 row in set (0.001 sec)
```


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8. retrieve names of books borrowed without repetition

```
MariaDB [library1]> --retrieve names of books borrowed without repetition
MariaDB [library1]> select distinct bookname from books as b inner join booksborrowed bb on b.bookid=bb.bookid;
+-----+
| bookname |
+-----+
| The Great Gatsby |
| To Kill a Mockingbird |
| 1984 |
| Pride and Prejudice |
| The Catcher in the Rye |
| The Hobbit |
| Harry Potter and the Sorcerer's Stone |
| The Da Vinci Code |
| The Lord of the Rings |
| The Hunger Games |
| The Shining |
| Brave New World |
| Moby-Dick |
| The Road |
| The Chronicles of Narnia |
| Wuthering Heights |
| Frankenstein |
| The Girl with the Dragon Tattoo |
| One Hundred Years of Solitude |
| The Picture of Dorian Gray |
| Fahrenheit 451 |
| The Hitchhiker's Guide to the Galaxy |
| The Kite Runner |
| The Road Not Taken |
| The Odyssey |
| The Count of Monte Cristo |
| A Tale of Two Cities |
| The Alchemist |
| The Stand |
| The War of the Worlds |
+-----+
30 rows in set (0.001 sec)
```

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9. Retrieve the customerName, BookName for books borrowed.

```
bhargav@bhargav-ram: ~  
MariaDB [library1]> --Retrieve the customerName, BookName for books borrowed.  
MariaDB [library1]> SELECT c.customername, b.bookname  
    -> FROM customers c  
    -> INNER JOIN booksborrowed bb ON c.customerid = bb.customerid  
    -> INNER JOIN books b ON b.bookid = bb.bookid;  
  
+-----+-----+  
| customername | bookname |  
+-----+-----+  
| Ram Kumar    | The Great Gatsby |  
| Ram Kumar    | Wuthering Heights |  
| Ram Kumar    | The Great Gatsby |  
| Ram Kumar    | Wuthering Heights |  
| Bhargav Reddy | To Kill a Mockingbird |  
| Bhargav Reddy | Frankenstein |  
| Bhargav Reddy | To Kill a Mockingbird |  
| Bhargav Reddy | Frankenstein |  
| Suresh Raj    | 1984 |  
| Suresh Raj    | The Girl with the Dragon Tattoo |  
| Suresh Raj    | 1984 |  
| Suresh Raj    | The Girl with the Dragon Tattoo |  
| Vamsi Krishna | Pride and Prejudice |  
| Vamsi Krishna | One Hundred Years of Solitude |  
| Vamsi Krishna | Pride and Prejudice |  
| Vamsi Krishna | One Hundred Years of Solitude |  
| Sita Sharma   | The Catcher in the Rye |  
| Sita Sharma   | The Picture of Dorian Gray |  
| Sita Sharma   | The Catcher in the Rye |  
| Sita Sharma   | The Picture of Dorian Gray |  
| Yashoda Devi  | The Hobbit |  
| Yashoda Devi  | Fahrenheit 451 |  
| Yashoda Devi  | The Hobbit |  
| Lakshmi Patel | Harry Potter and the Sorcerer's Stone |  
| Lakshmi Patel | The Hitchhiker's Guide to the Galaxy |  
| Lakshmi Patel | Harry Potter and the Sorcerer's Stone |  
| Ranya Venkatesh | The Da Vinci Code |  
| Ranya Venkatesh | The Kite Runner |  
| Ranya Venkatesh | The Da Vinci Code |  
| Bhargavi Naidu | The Lord of the Rings |  
| Bhargavi Naidu | The Road Not Taken |  
| Bhargavi Naidu | The Road Not Taken |  
| Bhargavi Naidu | The Lord of the Rings |  
| Suresh Babu   | The Hunger Games |  
| Suresh Babu   | The Odyssey |  
| Suresh Babu   | The Hunger Games |  
| Vamsi Chandra | The Shining |  
| Vamsi Chandra | The Count of Monte Cristo |  
| Vamsi Chandra | The Shining |  
| Sita Devi     | Brave New World |  
| Sita Devi     | A Tale of Two Cities |  
| Sita Devi     | Brave New World |  
| Yashoda Reddy | Moby-Dick |  
| Yashoda Reddy | The Alchemist |  
| Yashoda Reddy | Moby-Dick |  
| Lakshmi Sharma | The Road |  
| Lakshmi Sharma | The Stand |  
| Lakshmi Sharma | The Road |  
| Ramachandra Naidu | The Chronicles of Narnia |  
| Ramachandra Naidu | The War of the Worlds |  
| Ramachandra Naidu | The Chronicles of Narnia |  
+-----+-----+  
50 rows in set (0.087 sec)  
  
MariaDB [library1]> 
```

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10. Insert below data into Cost table 100pages -10 rs, 200pages -15rs, 300 pages - 30rs, 1000 pages -50Rs

```
MariaDB [library1]> --Insert below data into Cost table 100pages -10 rs, 200pages -15rs, 300 pages - 30rs, 1000 pages -50Rs
MariaDB [library1]> insert into cost values(100,10),(200,15),(300,30),(1000,50);
Query OK, 4 rows affected (0.051 sec)
Records: 4 Duplicates: 0 Warnings: 0

MariaDB [library1]> select * from cost;
+-----+-----+
| maxpages | costperday |
+-----+-----+
| 100 | 10 |
| 200 | 15 |
| 300 | 30 |
| 1000 | 50 |
+-----+-----+
4 rows in set (0.001 sec)

MariaDB [library1]> █
```

11. total Earnings by Library.

```
MariaDB [library1]> select sum(costperday * daysbookretained) as totalearnings from booksborrowed bb inner join books b on bb.bookid=b.bookid
inner join cost on pages <= maxpages;
+-----+
| totalearnings |
+-----+
| 53625 |
+-----+
1 row in set (0.063 sec)
```

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12. Amount paid by each customer. Rank the customers based in amount paid.

```
MariaDB [library1]> --12
MariaDB [library1]> select customername,sum(costperday*daysbookretained) as totalearnings from customers c inner join booksborrowed bb on c.customerid=bb.customerid inner join books b on bb.bookid=b.bookid inner join cost on pages <= maxpages group by c.customerid order by totalearnings desc;
```

customername	totalearnings
Bhargav Reddy	5760
Sita Sharma	5760
Ram Kumar	4545
Lakshmi Sharma	4080
Yashoda Reddy	3900
Yashoda Devi	3670
Suresh Raj	3600
Vamsi Krishna	3600
Suresh Babu	3250
Bhargavi Naidu	3150
Ramya Venkatesh	2900
Sita Devi	2900
Lakshmi Patel	2730
Ramachandra Naidu	2730
Vamsi Chandra	1050

```
15 rows in set (0.070 sec)

MariaDB [library1]>
```