Assignment-1(SQL)
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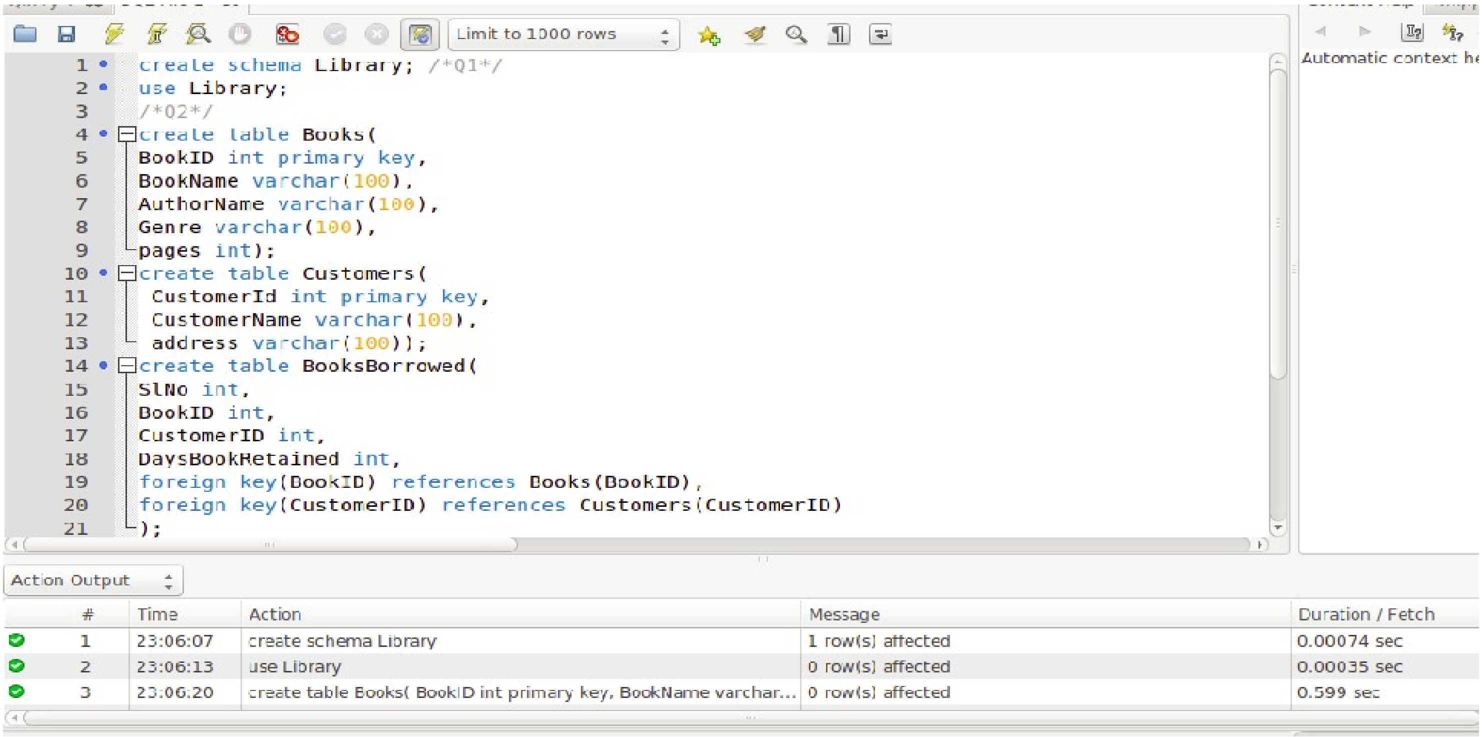
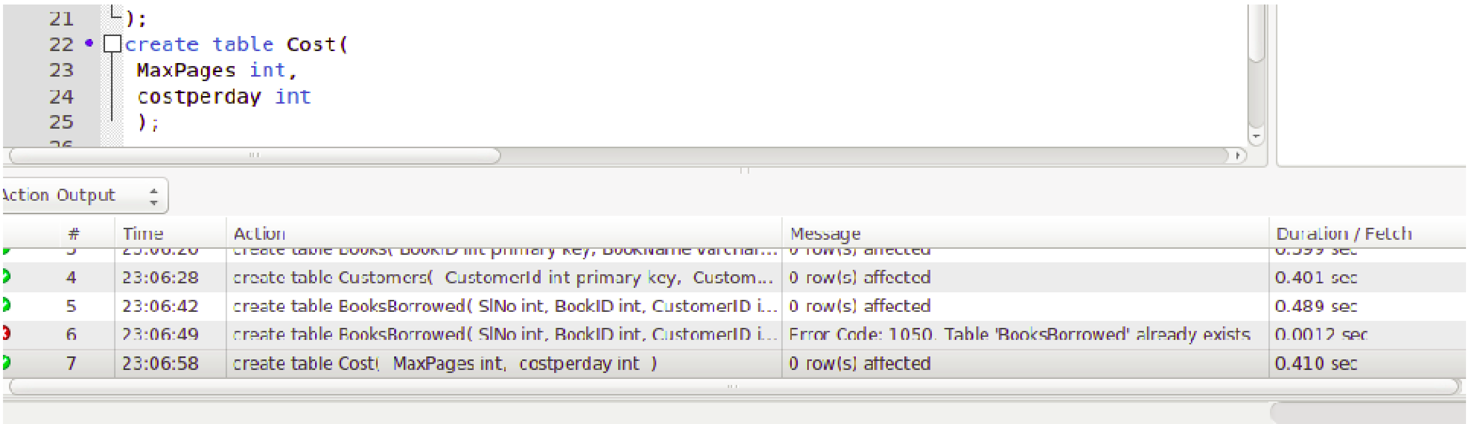
1. Create Schema Library

2. 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



```
create schema Library; /*Q1*/
use Library;
/*Q2*/
create table Books(
BookID int primary key,
BookName varchar(100),
AuthorName varchar(100),
Genre varchar(100),
pages int);
create table Customers(
 CustomerId int primary key,
 CustomerName varchar(100),
 address varchar(100));
create table BooksBorrowed(
SlNo int,
BookID int,
CustomerID int,
DaysBookRetained int,
foreign key(BookID) references Books(BookID),
foreign key(CustomerID) references Customers(CustomerID)
);
```

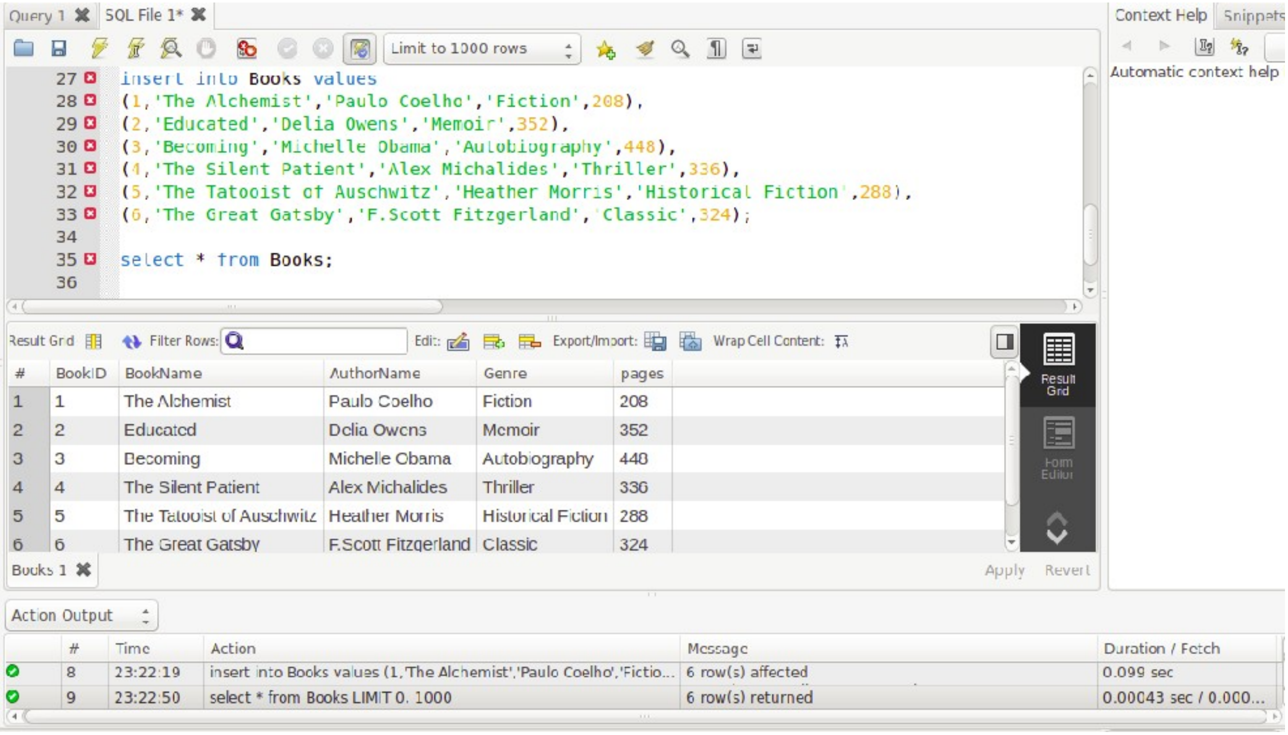
	#	Time	Action	Message	Duration / Fetch
✓	1	23:06:07	create schema Library	1 row(s) affected	0.00074 sec
✓	2	23:06:13	use Library	0 row(s) affected	0.00035 sec
✓	3	23:06:20	create table Books(BookID int primary key, BookName varchar...	0 row(s) affected	0.599 sec



```
);
create table Cost(
 MaxPages int,
 costperday int
 );
```

	#	Time	Action	Message	Duration / Fetch
✓	3	23:06:20	create table Books(BookID int primary key, BookName varchar...	0 row(s) affected	0.599 sec
✓	4	23:06:28	create table Customers(CustomerId int primary key, Custom...	0 row(s) affected	0.401 sec
✓	5	23:06:42	create table BooksBorrowed(SlNo int, BookID int, CustomerID i...	0 row(s) affected	0.489 sec
✗	6	23:06:49	create table BooksBorrowed(SlNo int, BookID int, CustomerID i...	Error Code: 1050. Table 'BooksBorrowed' already exists	0.0012 sec
✓	7	23:06:58	create table Cost(MaxPages int, costperday int)	0 row(s) affected	0.410 sec

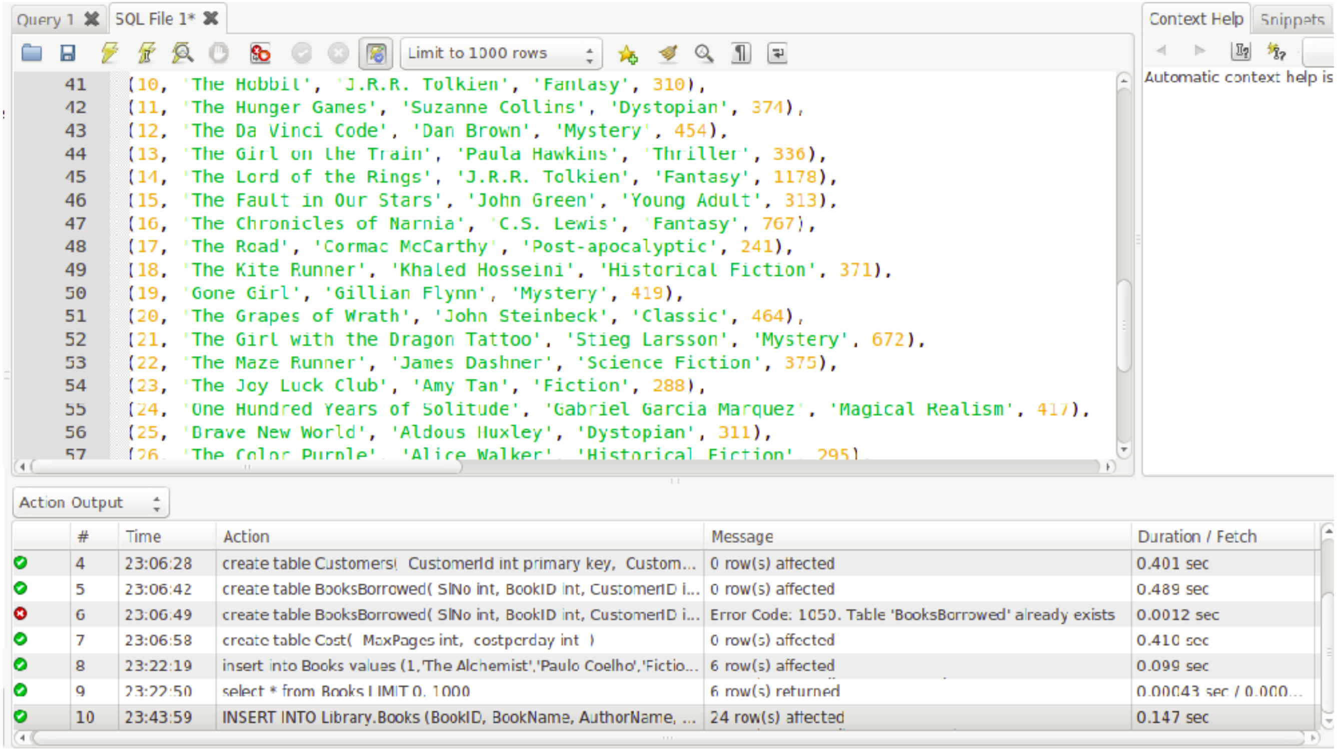
3.Google Search for books along with authors, genre and pages. Insert atleast 5 authors and 5 different genres into Books Table. Make sure you have atleast 30 records.



```sql
insert into Books values
(1,'The Alchemist','Paulo Coelho','Fiction',208),
(2,'Educated','Delia Owens','Memoir',352),
(3,'Becoming','Michelle Obama','Autobiography',448),
(4,'The Silent Patient','Alex Michalides','Thriller',336),
(5,'The Tatooist of Auschwitz','Heather Morris','Historical Fiction',288),
(6,'The Great Gatsby','F.Scott Fitzgerland','Classic',324);

select * from Books;
```

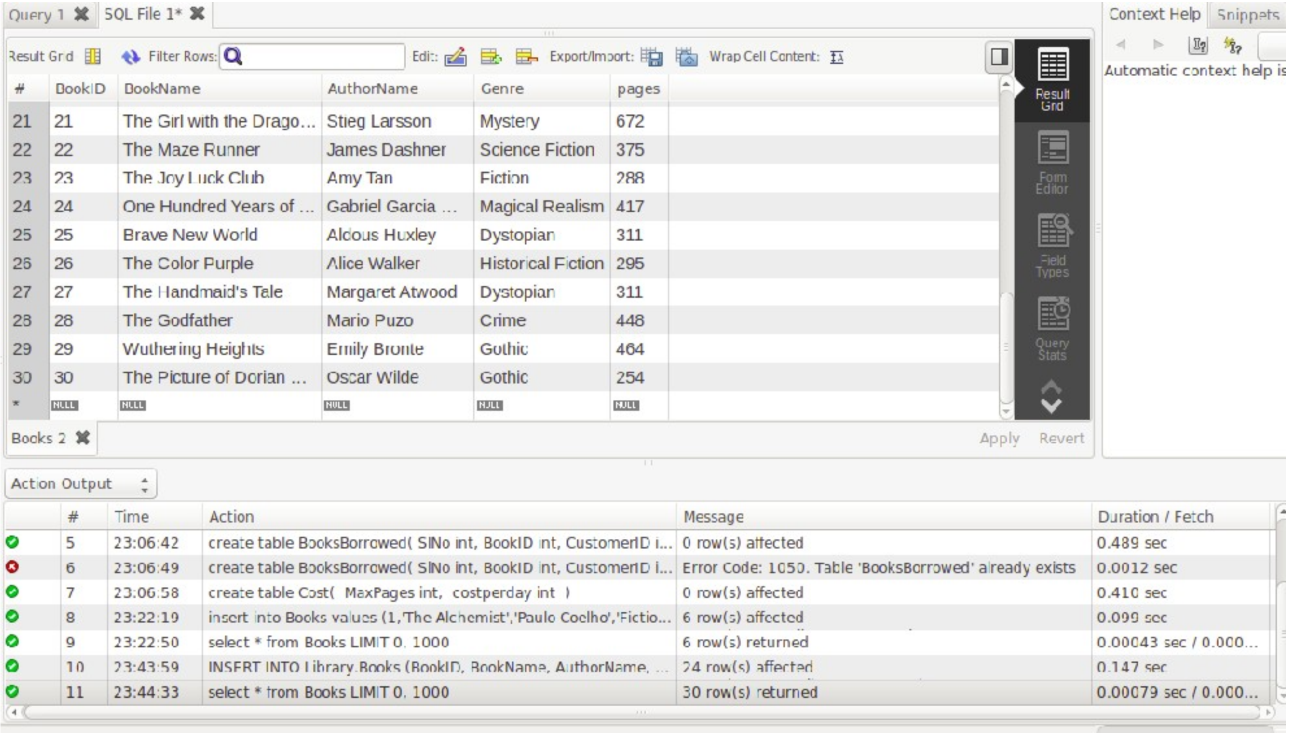
#	BookID	BookName	AuthorName	Genre	pages
1	1	The Alchemist	Paulo Coelho	Fiction	208
2	2	Educated	Delia Owens	Memoir	352
3	3	Becoming	Michelle Obama	Autobiography	448
4	4	The Silent Patient	Alex Michalides	Thriller	336
5	5	The Tatooist of Auschwitz	Heather Morris	Historical Fiction	288
6	6	The Great Gatsby	F.Scott Fitzgerland	Classic	324

	#	Time	Action	Message	Duration / Fetch
✓	8	23:22:19	insert into Books values (1,'The Alchemist','Paulo Coelho','Fictio...	6 row(s) affected	0.099 sec
✓	9	23:22:50	select * from Books LIMIT 0, 1000	6 row(s) returned	0.00043 sec / 0.000...



```sql
(10, 'The Hobbit', 'J.R.R. Tolkien', 'Fantasy', 310),
(11, 'The Hunger Games', 'Suzanne Collins', 'Dystopian', 374),
(12, 'The Da Vinci Code', 'Dan Brown', 'Mystery', 454),
(13, 'The Girl on the Train', 'Paula Hawkins', 'Thriller', 336),
(14, 'The Lord of the Rings', 'J.R.R. Tolkien', 'Fantasy', 1178),
(15, 'The Fault in Our Stars', 'John Green', 'Young Adult', 313),
(16, 'The Chronicles of Narnia', 'C.S. Lewis', 'Fantasy', 767),
(17, 'The Road', 'Cormac McCarthy', 'Post-apocalyptic', 241),
(18, 'The Kite Runner', 'Khaled Hosseini', 'Historical Fiction', 371),
(19, 'Gone Girl', 'Gillian Flynn', 'Mystery', 419),
(20, 'The Grapes of Wrath', 'John Steinbeck', 'Classic', 464),
(21, 'The Girl with the Dragon Tattoo', 'Stieg Larsson', 'Mystery', 672),
(22, 'The Maze Runner', 'James Dashner', 'Science Fiction', 375),
(23, 'The Joy Luck Club', 'Amy Tan', 'Fiction', 288),
(24, 'One Hundred Years of Solitude', 'Gabriel Garcia Marquez', 'Magical Realism', 417),
(25, 'Brave New World', 'Aldous Huxley', 'Dystopian', 311),
(26, 'The Color Purple', 'Alice Walker', 'Historical Fiction', 295),
```

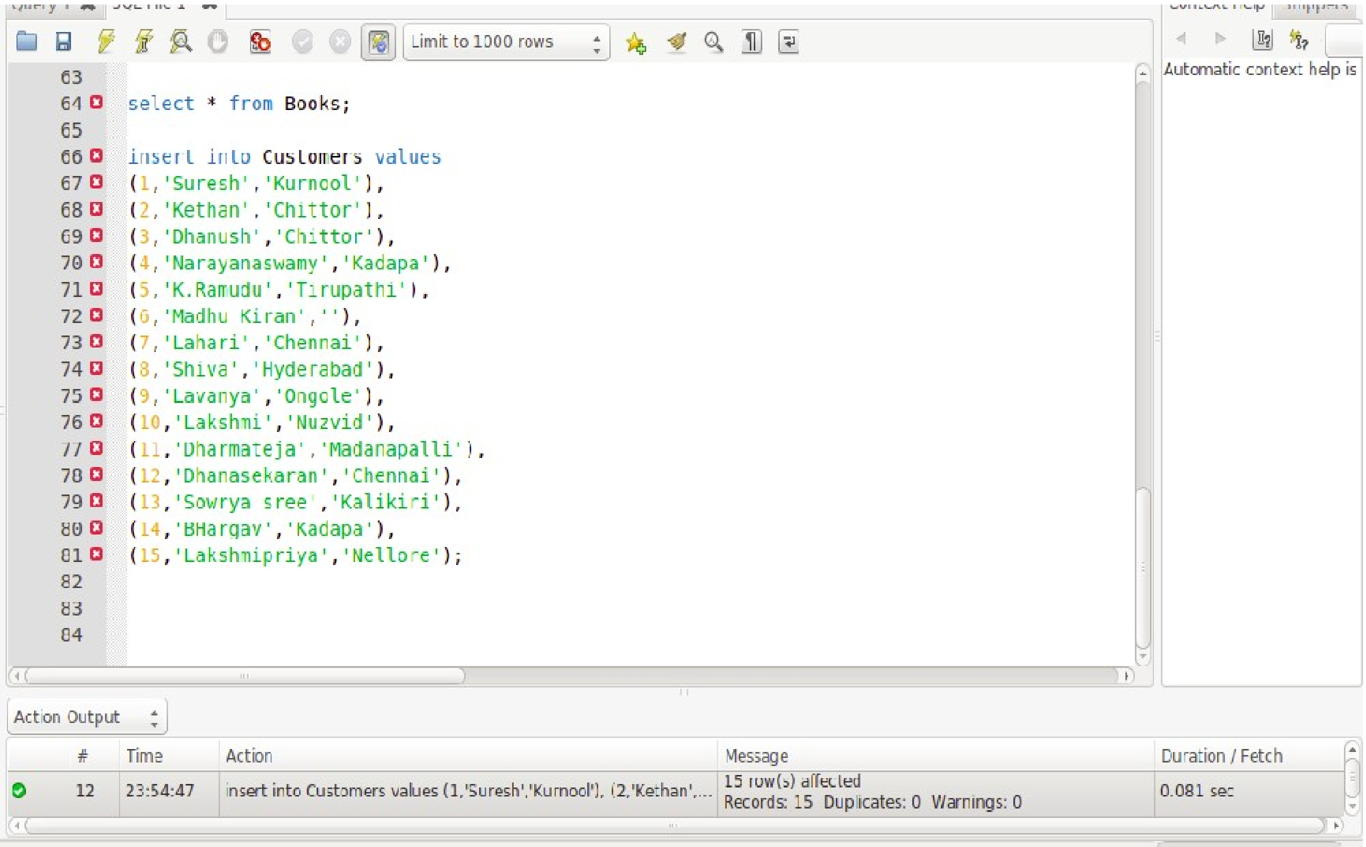
	#	Time	Action	Message	Duration / Fetch
✓	4	23:06:28	create table Customers(CustomerId int primary key, Custom...	0 row(s) affected	0.401 sec
✓	5	23:06:42	create table BooksBorrowed(SlNo int, BookID int, CustomerID i...	0 row(s) affected	0.489 sec
✗	6	23:06:49	create table BooksBorrowed(SlNo int, BookID int, CustomerID i...	Error Code: 1050. Table 'BooksBorrowed' already exists	0.0012 sec
✓	7	23:06:58	create table Cost(MaxPages int, costperday int)	0 row(s) affected	0.410 sec
✓	8	23:22:19	insert into Books values (1,'The Alchemist','Paulo Coelho','Fictio...	6 row(s) affected	0.099 sec
✓	9	23:22:50	select * from Books LIMIT 0, 1000	6 row(s) returned	0.00043 sec / 0.000...
✓	10	23:43:59	INSERT INTO Library.Books (BookID, BookName, AuthorName, ...	24 row(s) affected	0.147 sec



#	BookID	BookName	AuthorName	Genre	pages
21	21	The Girl with the Drago...	Stieg Larsson	Mystery	672
22	22	The Maze Runner	James Dashner	Science Fiction	375
23	23	The Joy Luck Club	Amy Tan	Fiction	288
24	24	One Hundred Years of ...	Gabriel Garcia ...	Magical Realism	417
25	25	Brave New World	Aldous Huxley	Dystopian	311
26	26	The Color Purple	Alice Walker	Historical Fiction	295
27	27	The Handmaid's Tale	Margaret Atwood	Dystopian	311
28	28	The Godfather	Mario Puzo	Crime	448
29	29	Wuthering Heights	Emily Bronte	Gothic	464
30	30	The Picture of Dorian ...	Oscar Wilde	Gothic	254
*	NULL	NULL	NULL	NULL	NULL

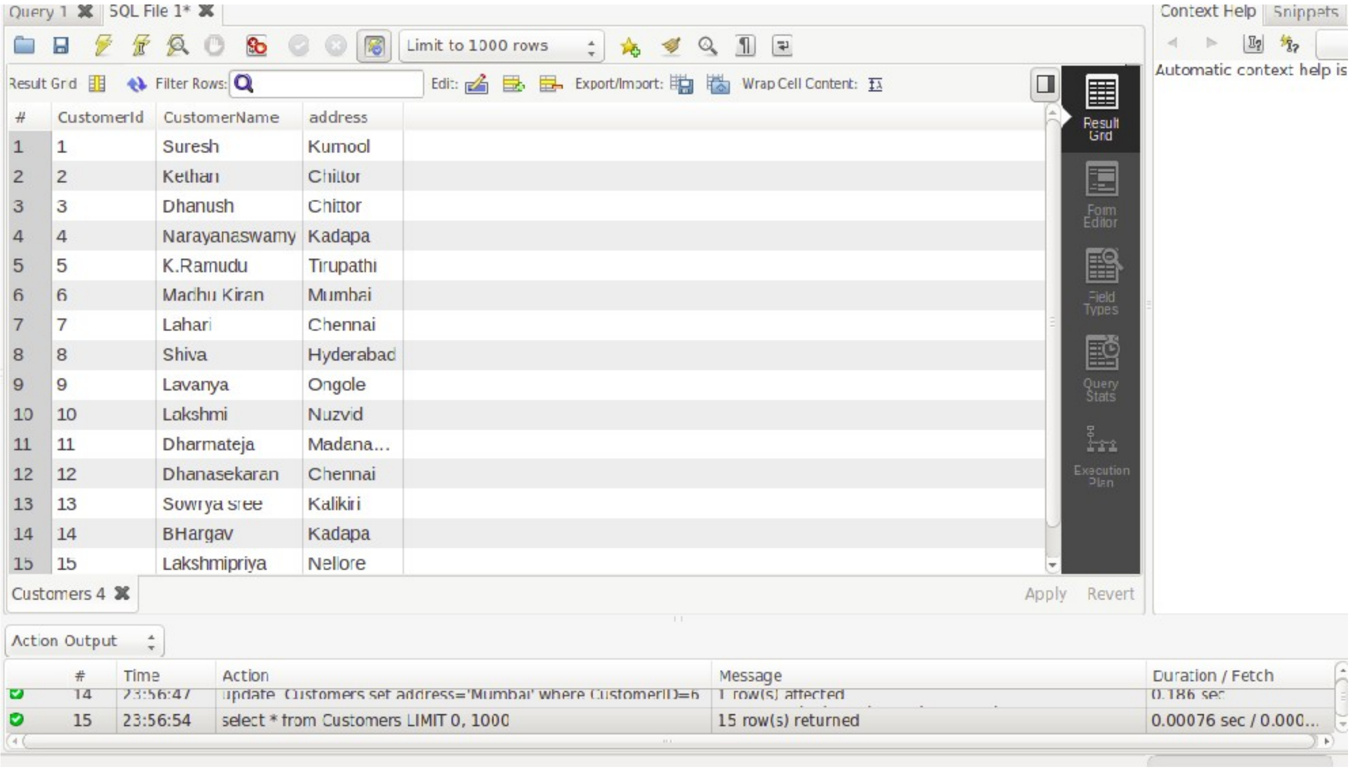
	#	Time	Action	Message	Duration / Fetch
✓	5	23:06:42	create table BooksBorrowed(SlNo int, BookID int, CustomerID i...	0 row(s) affected	0.489 sec
✗	6	23:06:49	create table BooksBorrowed(SlNo int, BookID int, CustomerID i...	Error Code: 1050. Table 'BooksBorrowed' already exists	0.0012 sec
✓	7	23:06:58	create table Cost(MaxPages int, costperday int)	0 row(s) affected	0.410 sec
✓	8	23:22:19	insert into Books values (1,'The Alchemist','Paulo Coelho','Fictio...	6 row(s) affected	0.099 sec
✓	9	23:22:50	select * from Books LIMIT 0, 1000	6 row(s) returned	0.00043 sec / 0.000...
✓	10	23:43:59	INSERT INTO Library.Books (BookID, BookName, AuthorName, ...	24 row(s) affected	0.147 sec
✓	11	23:44:33	select * from Books LIMIT 0, 1000	30 row(s) returned	0.00079 sec / 0.000...

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



```
select * from Books;

insert into Customers values
(1,'Suresh','Kurnool'),
(2,'Kethan','Chittor'),
(3,'Dhanush','Chittor'),
(4,'Narayanaswamy','Kadapa'),
(5,'K.Ramudu','Tirupathi'),
(6,'Madhu Kiran',''),
(7,'Lahari','Chennai'),
(8,'Shiva','Hyderabad'),
(9,'Lavanya','Ongole'),
(10,'Lakshmi','Nuzvid'),
(11,'Dharmateja','Madanapalli'),
(12,'Dhanasekaran','Chennai'),
(13,'Sowrya sree','Kalikiri'),
(14,'BHargav','Kadapa'),
(15,'Lakshmipriya','Nellore');
```

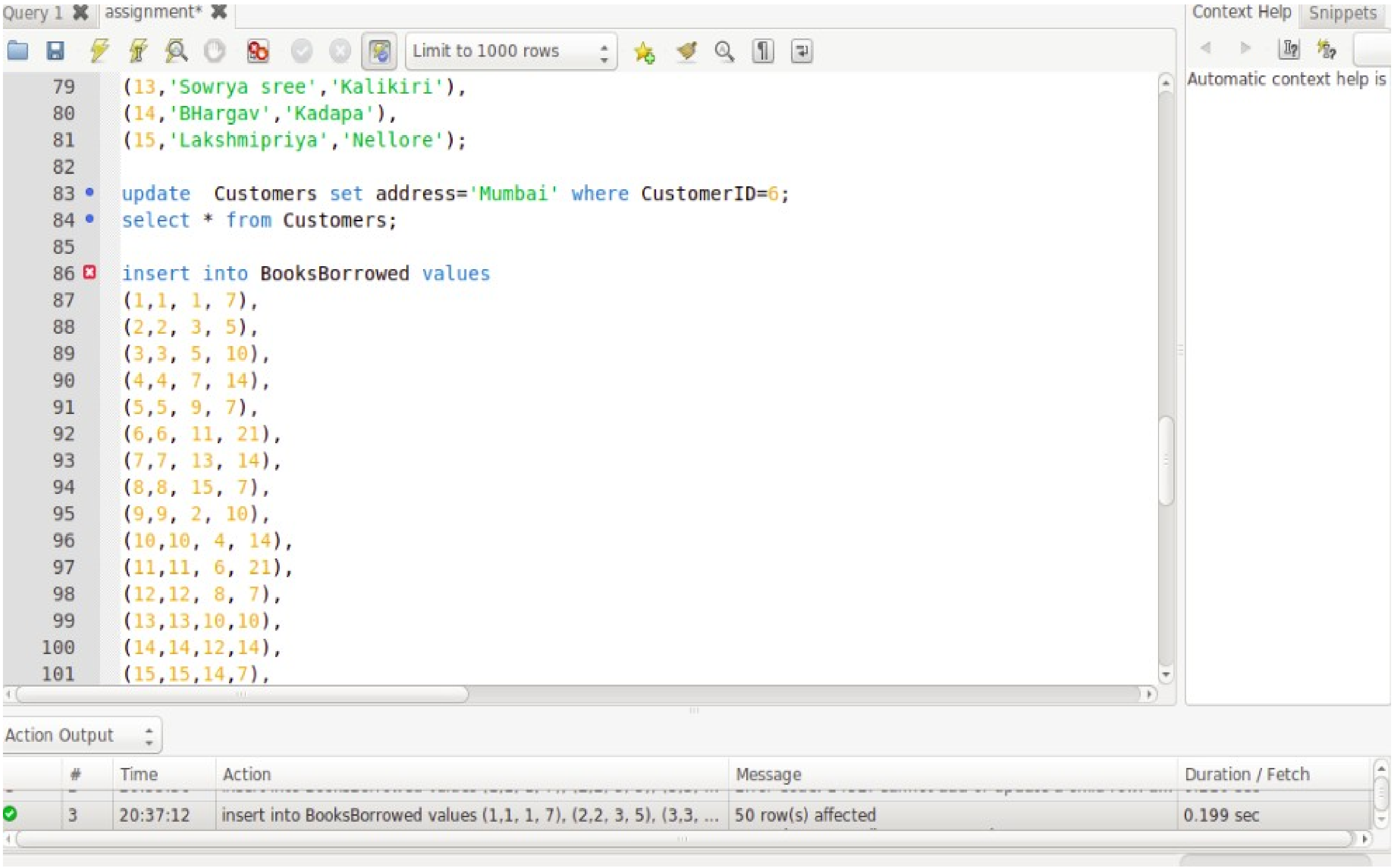
	#	Time	Action	Message	Duration / Fetch
✓	12	23:54:47	insert into Customers values (1,'Suresh','Kurnool'), (2,'Kethan',...	15 row(s) affected Records: 15 Duplicates: 0 Warnings: 0	0.081 sec



#	CustomerId	CustomerName	address
1	1	Suresh	Kurnool
2	2	Kethan	Chittor
3	3	Dhanush	Chittor
4	4	Narayanaswamy	Kadapa
5	5	K.Ramudu	Tirupathi
6	6	Madhu Kiran	Mumbai
7	7	Lahari	Chennai
8	8	Shiva	Hyderabad
9	9	Lavanya	Ongole
10	10	Lakshmi	Nuzvid
11	11	Dharmateja	Madena...
12	12	Dhanasekaran	Chennai
13	13	Sowrya sree	Kalikiri
14	14	BHargav	Kadapa
15	15	Lakshmipriya	Nellore

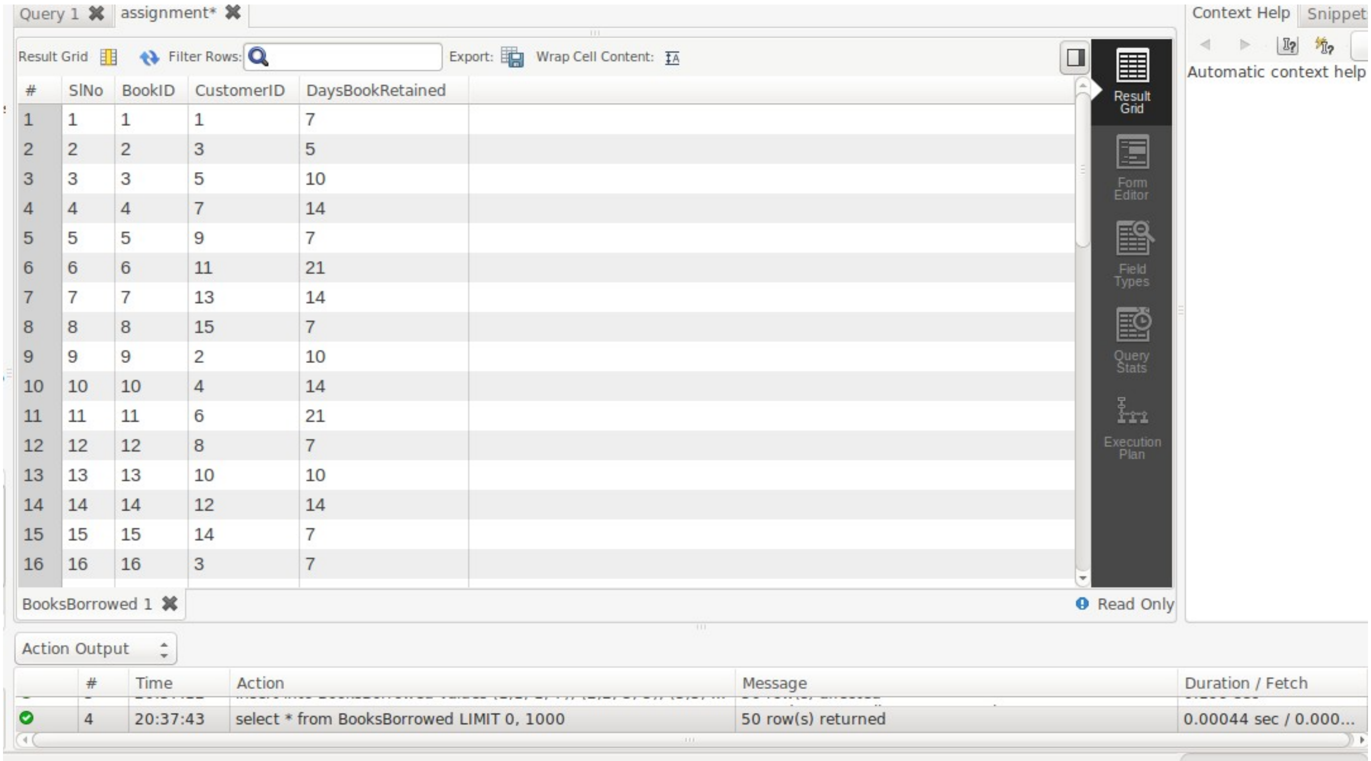
	#	Time	Action	Message	Duration / Fetch
✓	14	23:56:47	update Customers set address='Mumbai' where CustomerID=6	1 row(s) affected	0.186 sec
✓	15	23:56:54	select * from Customers LIMIT 0, 1000	15 row(s) returned	0.00076 sec / 0.000...

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



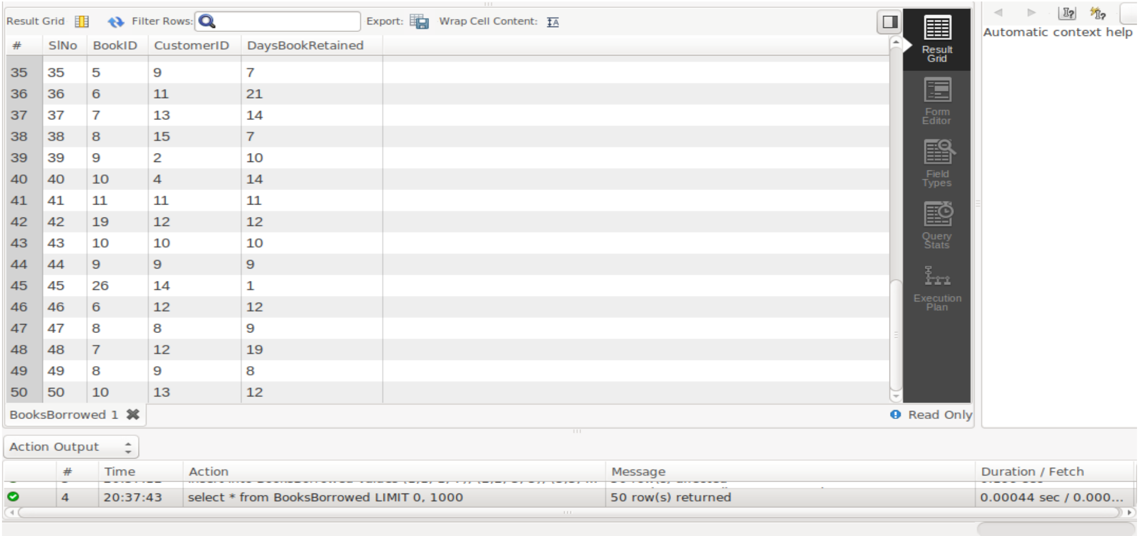
```
(13,'Sowrya sree','Kalikiri'),
(14,'BHargav','Kadapa'),
(15,'Lakshmipriya','Nellore');

update  Customers set address='Mumbai' where CustomerID=6;
select * from Customers;

insert into BooksBorrowed values
(1,1, 1, 7),
(2,2, 3, 5),
(3,3, 5, 10),
(4,4, 7, 14),
(5,5, 9, 7),
(6,6, 11, 21),
(7,7, 13, 14),
(8,8, 15, 7),
(9,9, 2, 10),
(10,10, 4, 14),
(11,11, 6, 21),
(12,12, 8, 7),
(13,13,10,10),
(14,14,12,14),
(15,15,14,7),
```

	#	Time	Action	Message	Duration / Fetch
✓	3	20:37:12	insert into BooksBorrowed values (1,1, 1, 7), (2,2, 3, 5), (3,3, ...	50 row(s) affected	0.199 sec



#	SlNo	BookID	CustomerID	DaysBookRetained
1	1	1	1	7
2	2	2	3	5
3	3	3	5	10
4	4	4	7	14
5	5	5	9	7
6	6	6	11	21
7	7	7	13	14
8	8	8	15	7
9	9	9	2	10
10	10	10	4	14
11	11	11	6	21
12	12	12	8	7
13	13	13	10	10
14	14	14	12	14
15	15	15	14	7
16	16	16	3	7

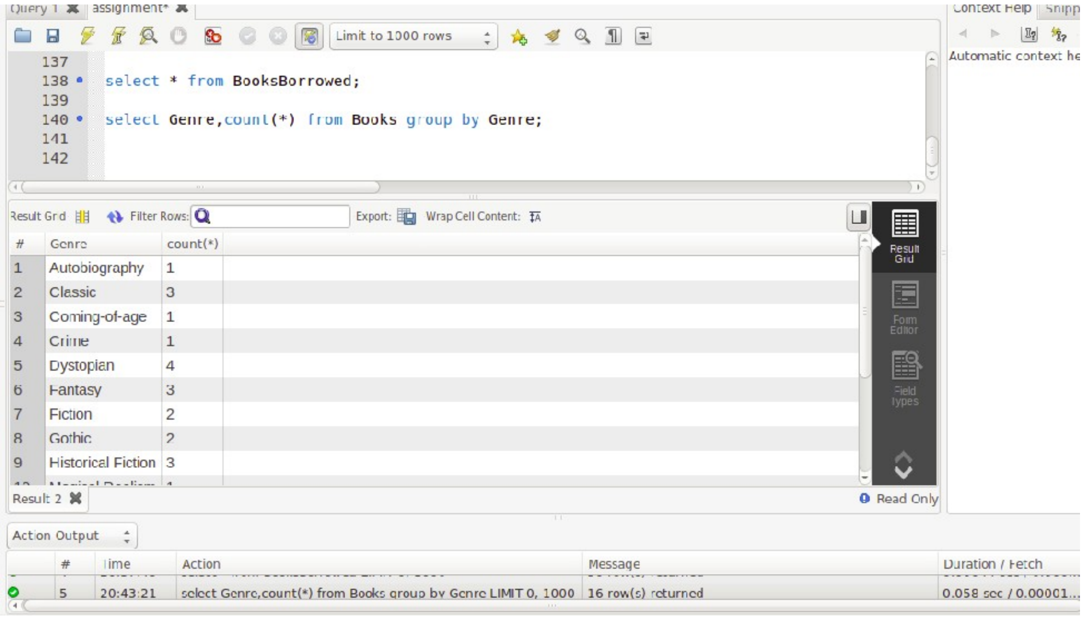
#	Time	Action	Message	Duration / Fetch
4	20:37:43	select * from BooksBorrowed LIMIT 0, 1000	50 row(s) returned	0.00044 sec / 0.000...



#	SlNo	BookID	CustomerID	DaysBookRetained
35	35	5	9	7
36	36	6	11	21
37	37	7	13	14
38	38	8	15	7
39	39	9	2	10
40	40	10	4	14
41	41	11	11	11
42	42	19	12	12
43	43	10	10	10
44	44	9	9	9
45	45	26	14	1
46	46	6	12	12
47	47	8	8	9
48	48	7	12	19
49	49	8	9	8
50	50	10	13	12

#	Time	Action	Message	Duration / Fetch
4	20:37:43	select * from BooksBorrowed LIMIT 0, 1000	50 row(s) returned	0.00044 sec / 0.000...

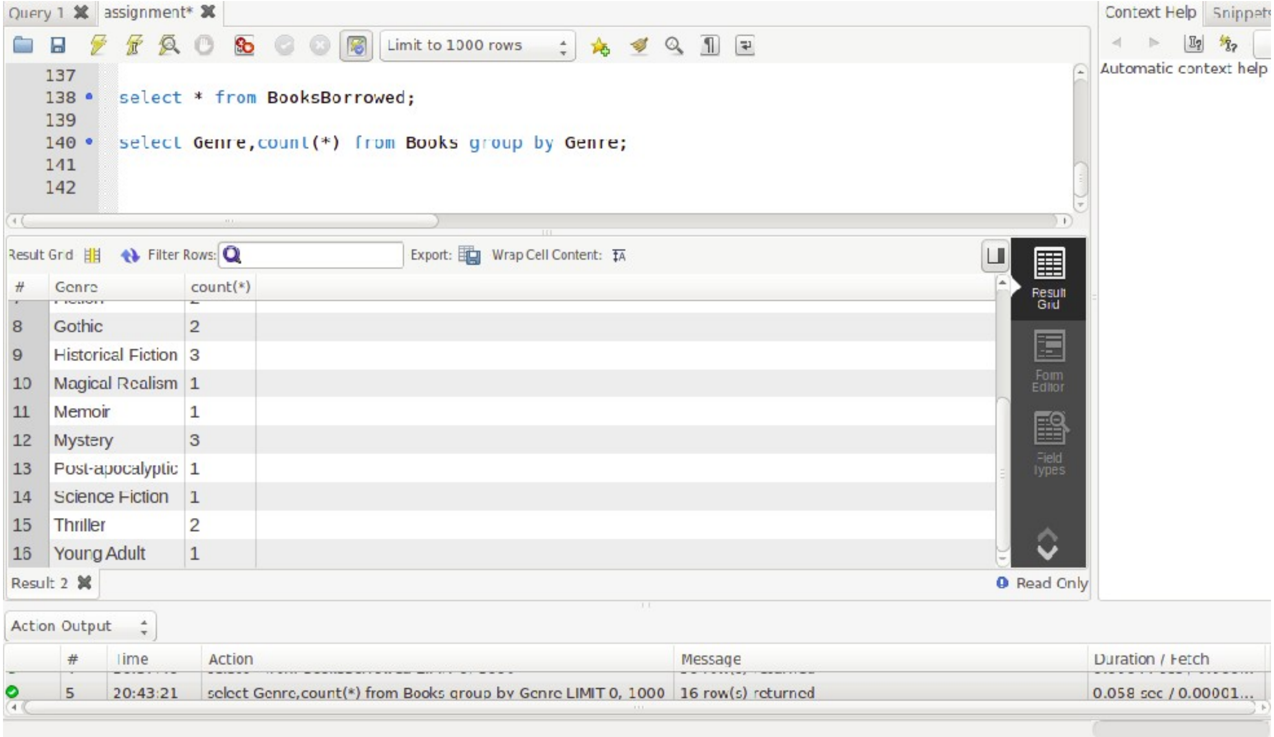
6.Retrieve the total number of books in each genre.



```
select * from BooksBorrowed;

select Genre,count(*) from Books group by Genre;
```

#	Genre	count(*)
1	Autobiography	1
2	Classic	3
3	Coming-of-age	1
4	Crime	1
5	Dystopian	4
6	Fantasy	3
7	Fiction	2
8	Gothic	2
9	Historical Fiction	3

#	Time	Action	Message	Duration / Fetch
5	20:43:21	select Genre,count(*) from Books group by Genre LIMIT 0, 1000	16 row(s) returned	0.058 sec / 0.00001...

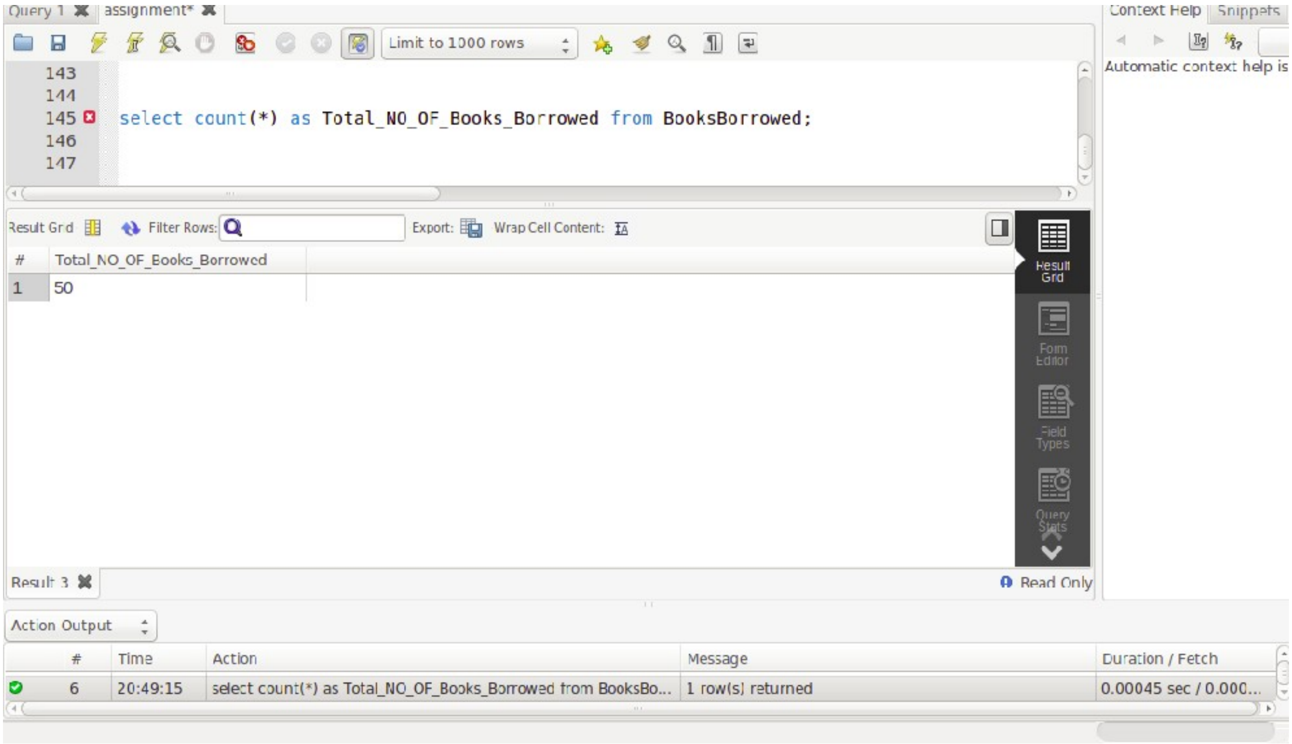


```
select * from BooksBorrowed;

select Genre,count(*) from Books group by Genre;
```

#	Genre	count(*)
8	Gothic	2
9	Historical Fiction	3
10	Magical Realism	1
11	Memoir	1
12	Mystery	3
13	Post-apocalyptic	1
14	Science Fiction	1
15	Thriller	2
16	Young Adult	1

#	Time	Action	Message	Duration / Fetch
5	20:43:21	select Genre,count(*) from Books group by Genre LIMIT 0, 1000	16 row(s) returned	0.058 sec / 0.00001...

7. Retrieve total number of books borrowed.

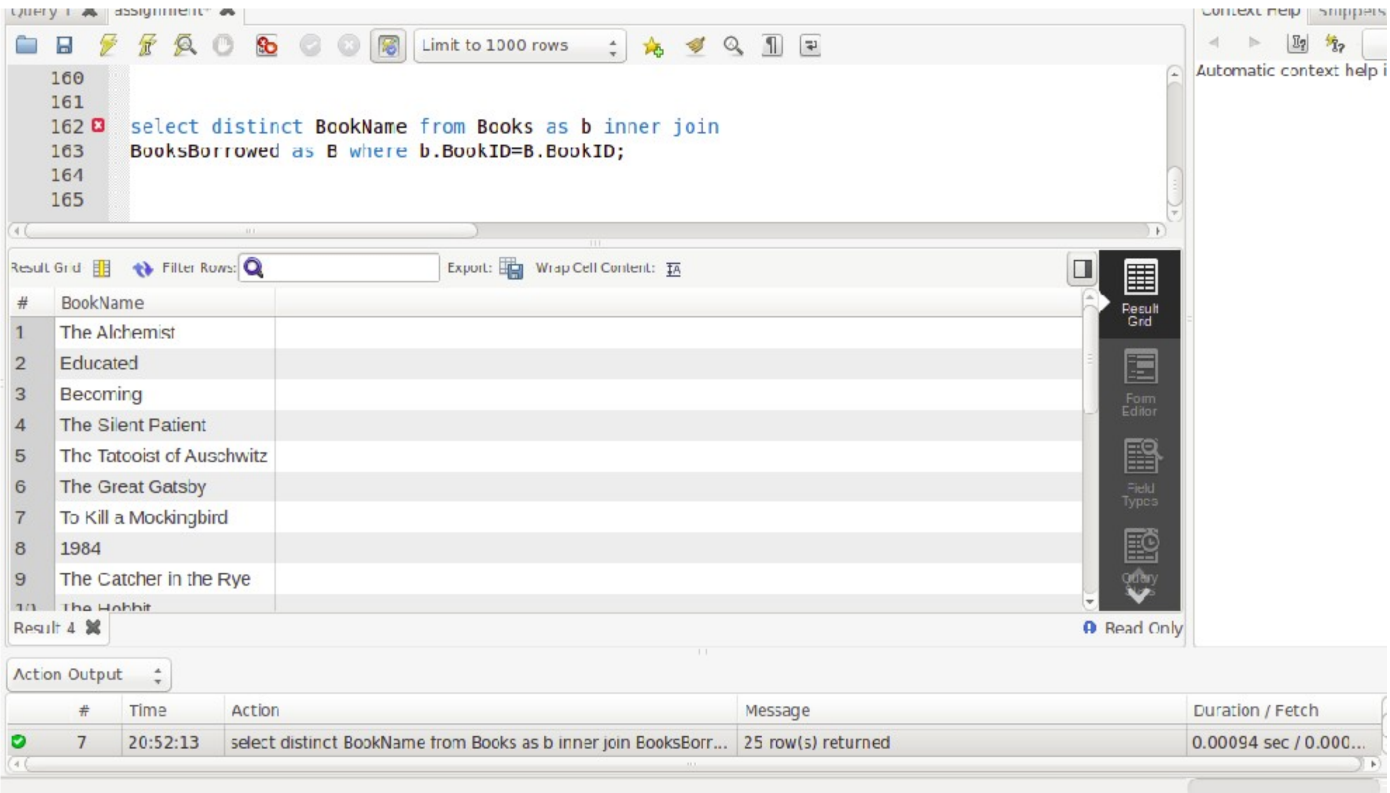


```
select count(*) as Total_NO_OF_Books_Borrowed from BooksBorrowed;
```

#	Total_NO_OF_Books_Borrowed
1	50

#	Time	Action	Message	Duration / Fetch
6	20:49:15	select count(*) as Total_NO_OF_Books_Borrowed from BooksBo...	1 row(s) returned	0.00045 sec / 0.000...

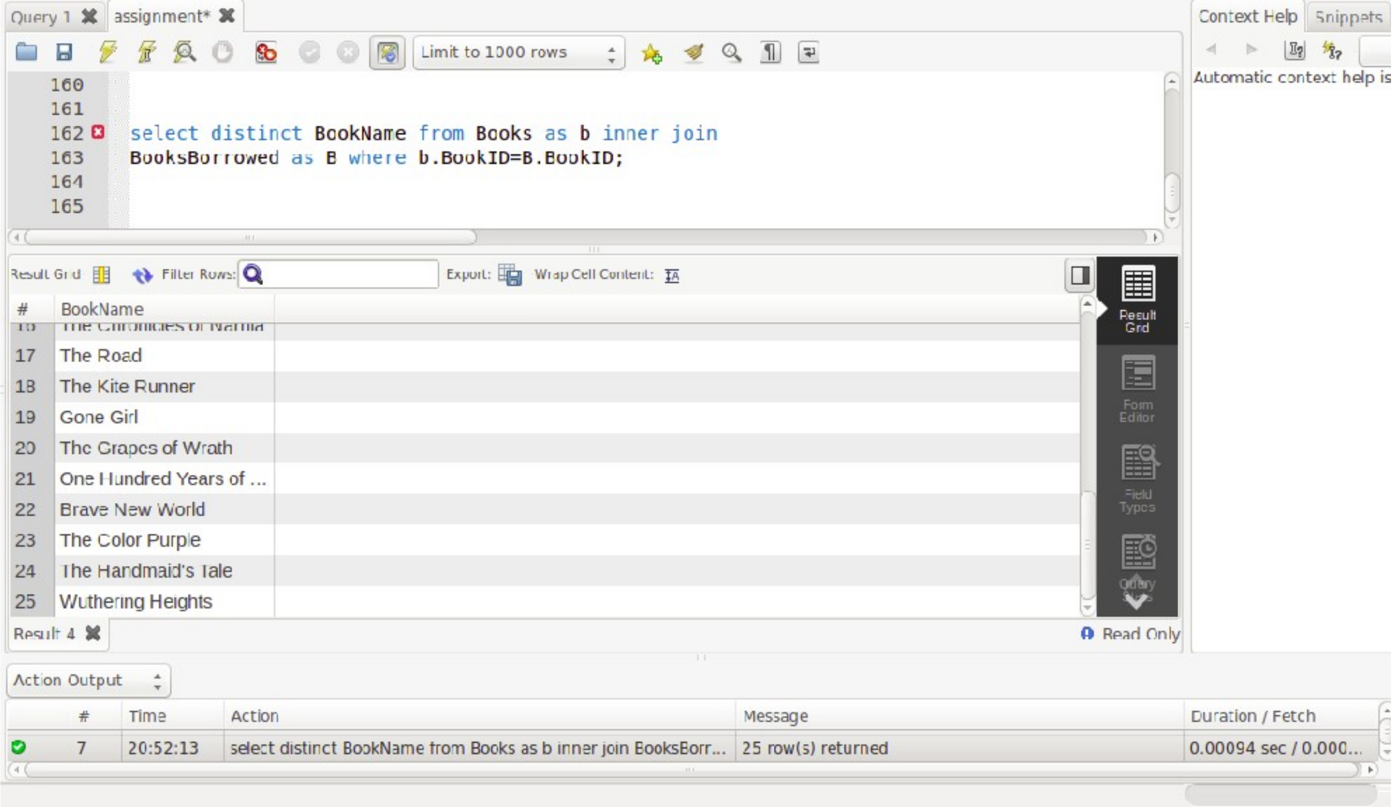
8. retrieve names of books borrowed without repetition



```
select distinct BookName from Books as b inner join
BooksBorrowed as B where b.BookID=B.BookID;
```

#	BookName
1	The Alchemist
2	Educated
3	Becoming
4	The Silent Patient
5	The Tatooist of Auschwitz
6	The Great Gatsby
7	To Kill a Mockingbird
8	1984
9	The Catcher in the Rye
10	The Hobbit

	#	Time	Action	Message	Duration / Fetch
✓	7	20:52:13	select distinct BookName from Books as b inner join BooksBorr...	25 row(s) returned	0.00094 sec / 0.000...

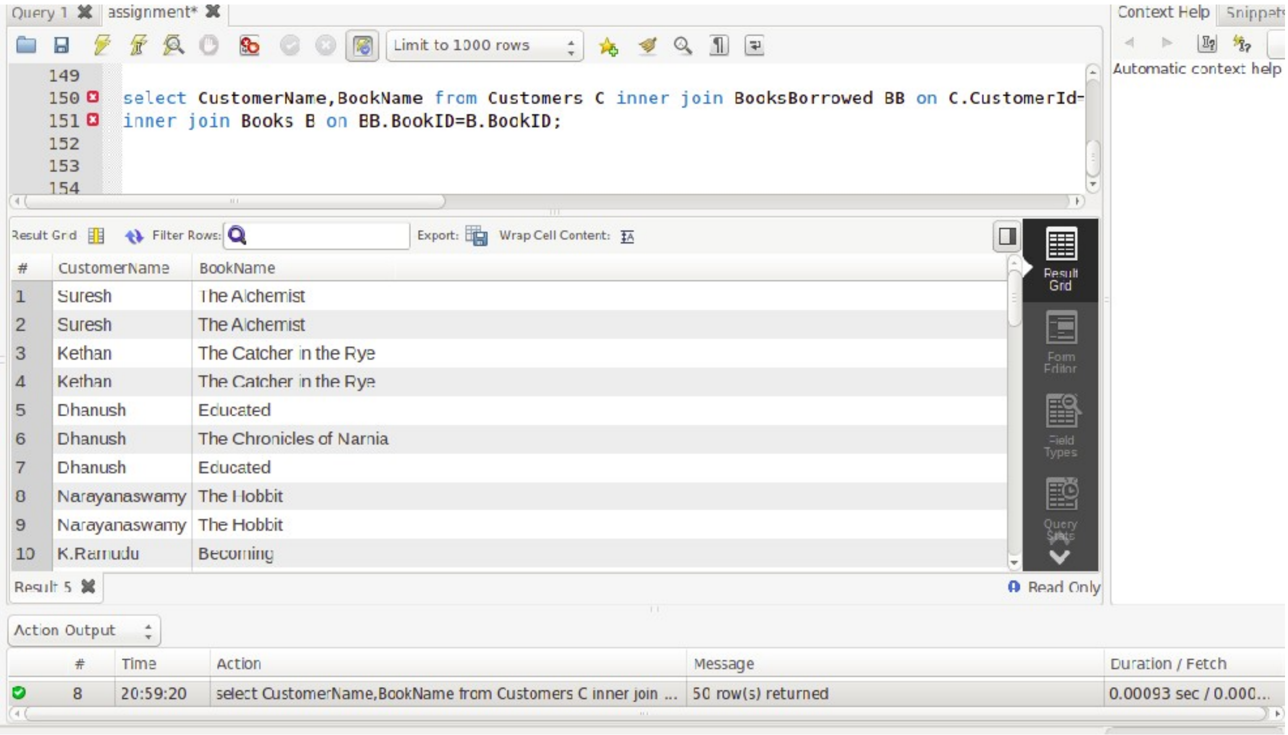


```
select distinct BookName from Books as b inner join
BooksBorrowed as B where b.BookID=B.BookID;
```

#	BookName
16	The Chronicles of Narnia
17	The Road
18	The Kite Runner
19	Gone Girl
20	The Grapes of Wrath
21	One Hundred Years of ...
22	Brave New World
23	The Color Purple
24	The Handmaid's Tale
25	Wuthering Heights

	#	Time	Action	Message	Duration / Fetch
✓	7	20:52:13	select distinct BookName from Books as b inner join BooksBorr...	25 row(s) returned	0.00094 sec / 0.000...

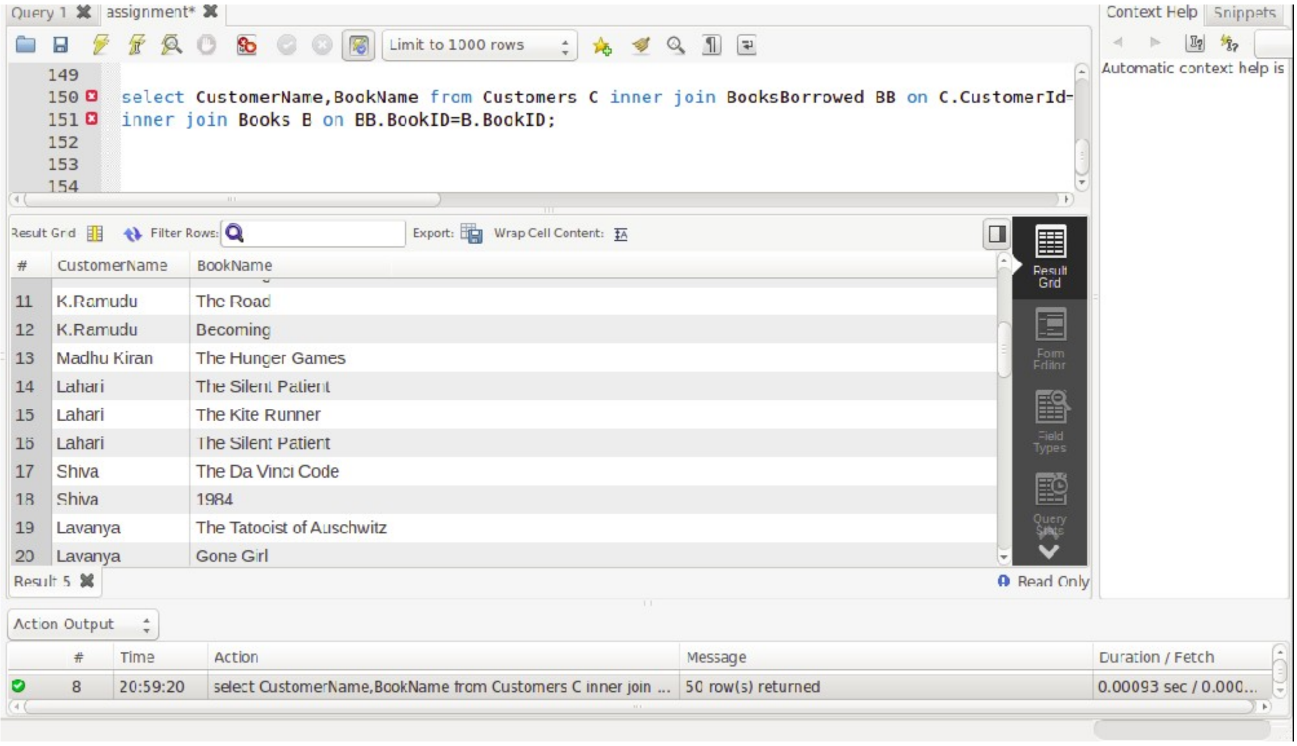
9. Retrieve the customerName, BookName for books borrowed.



```
select CustomerName,BookName from Customers C inner join BooksBorrowed BB on C.CustomerId=
inner join Books B on BB.BookID=B.BookID;
```

#	CustomerName	BookName
1	Suresh	The Alchemist
2	Suresh	The Alchemist
3	Kethan	The Catcher in the Rye
4	Kethan	The Catcher in the Rye
5	Dhanush	Educated
6	Dhanush	The Chronicles of Narnia
7	Dhanush	Educated
8	Narayanaswamy	The Hobbit
9	Narayanaswamy	The Hobbit
10	K.Ramudu	Becoming

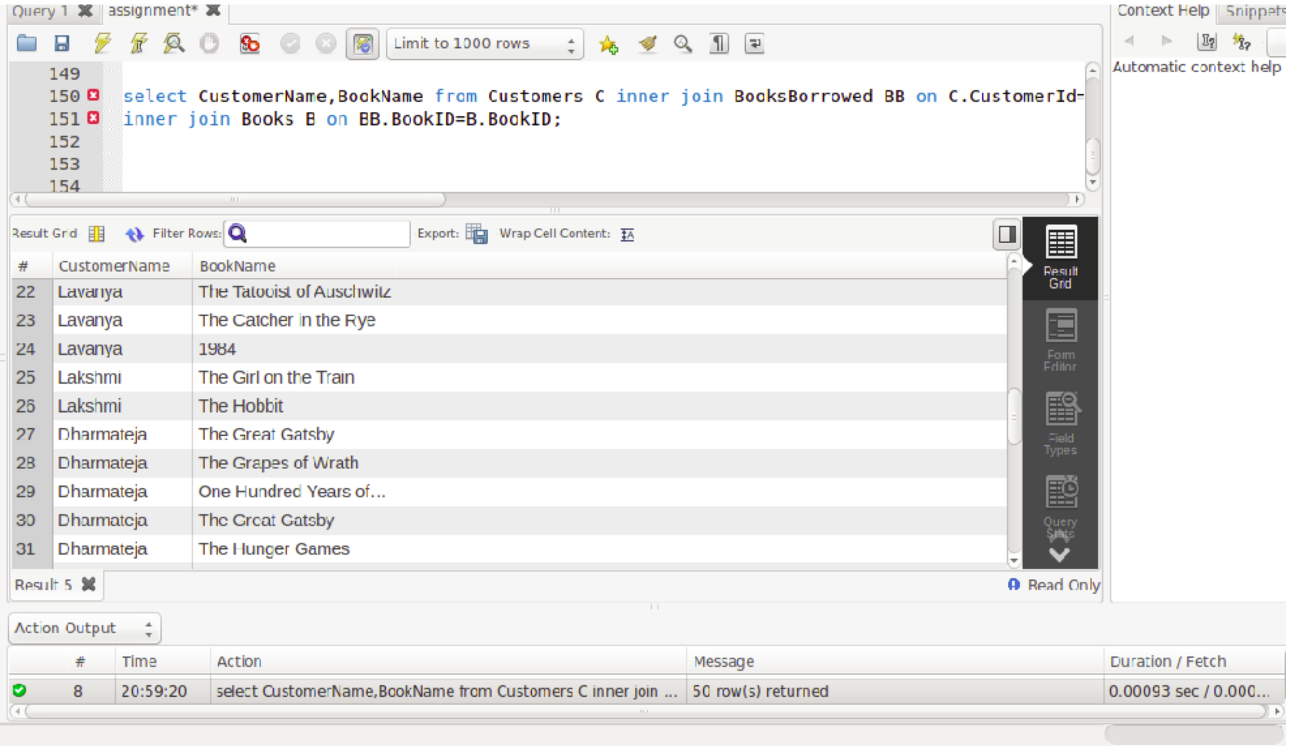
	#	Time	Action	Message	Duration / Fetch
✓	8	20:59:20	select CustomerName,BookName from Customers C inner join ...	50 row(s) returned	0.00093 sec / 0.000...



```
select CustomerName,BookName from Customers C inner join BooksBorrowed BB on C.CustomerId=
inner join Books B on BB.BookID=B.BookID;
```

#	CustomerName	BookName
11	K.Ramudu	The Road
12	K.Ramudu	Becoming
13	Madhu Kiran	The Hunger Games
14	Lahari	The Silent Patient
15	Lahari	The Kite Runner
16	Lahari	The Silent Patient
17	Shiva	The Da Vinci Code
18	Shiva	1984
19	Lavanya	The Tatooist of Auschwitz
20	Lavanya	Gone Girl

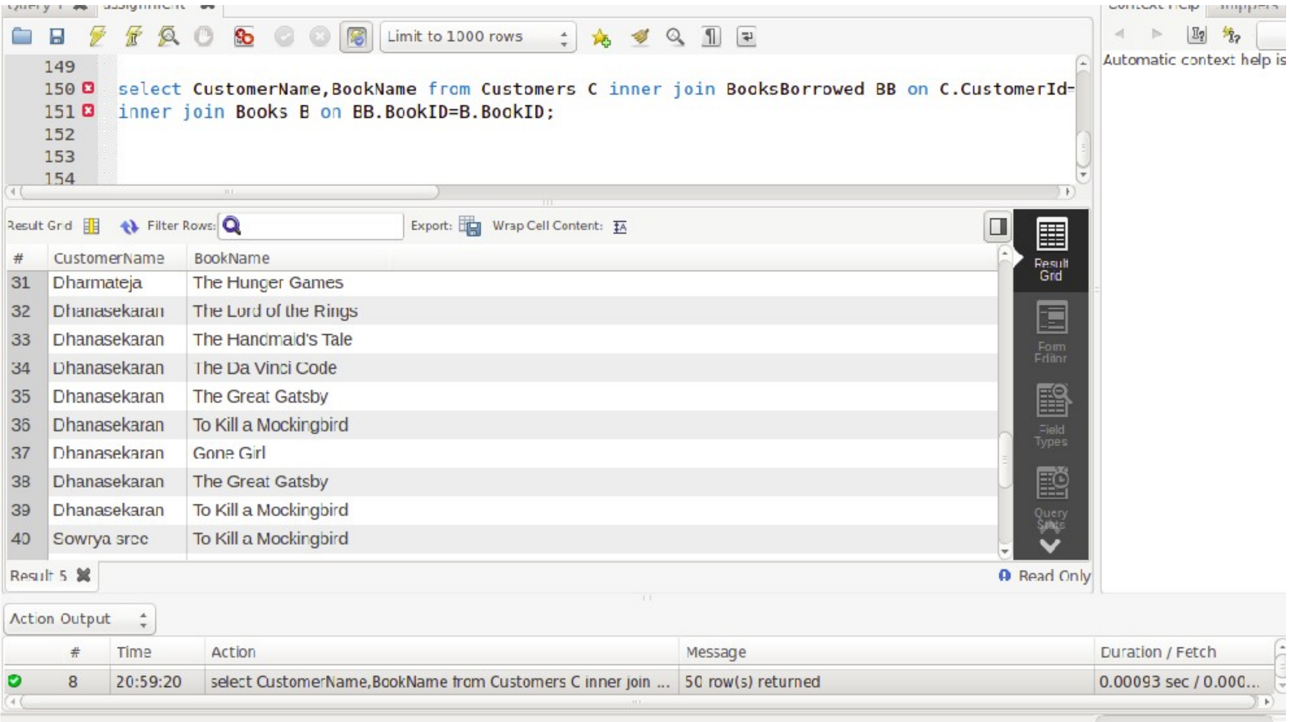
	#	Time	Action	Message	Duration / Fetch
✓	8	20:59:20	select CustomerName,BookName from Customers C inner join ...	50 row(s) returned	0.00093 sec / 0.000...



```
select CustomerName,BookName from Customers C inner join BooksBorrowed BB on C.CustomerId=
inner join Books B on BB.BookID=B.BookID;
```

#	CustomerName	BookName
22	Lavanya	The Tatooist of Auschwitz
23	Lavanya	The Catcher in the Rye
24	Lavanya	1984
25	Lakshmi	The Girl on the Train
26	Lakshmi	The Hobbit
27	Dharmateja	The Great Gatsby
28	Dharmateja	The Grapes of Wrath
29	Dharmateja	One Hundred Years of...
30	Dharmateja	The Great Gatsby
31	Dharmateja	The Hunger Games

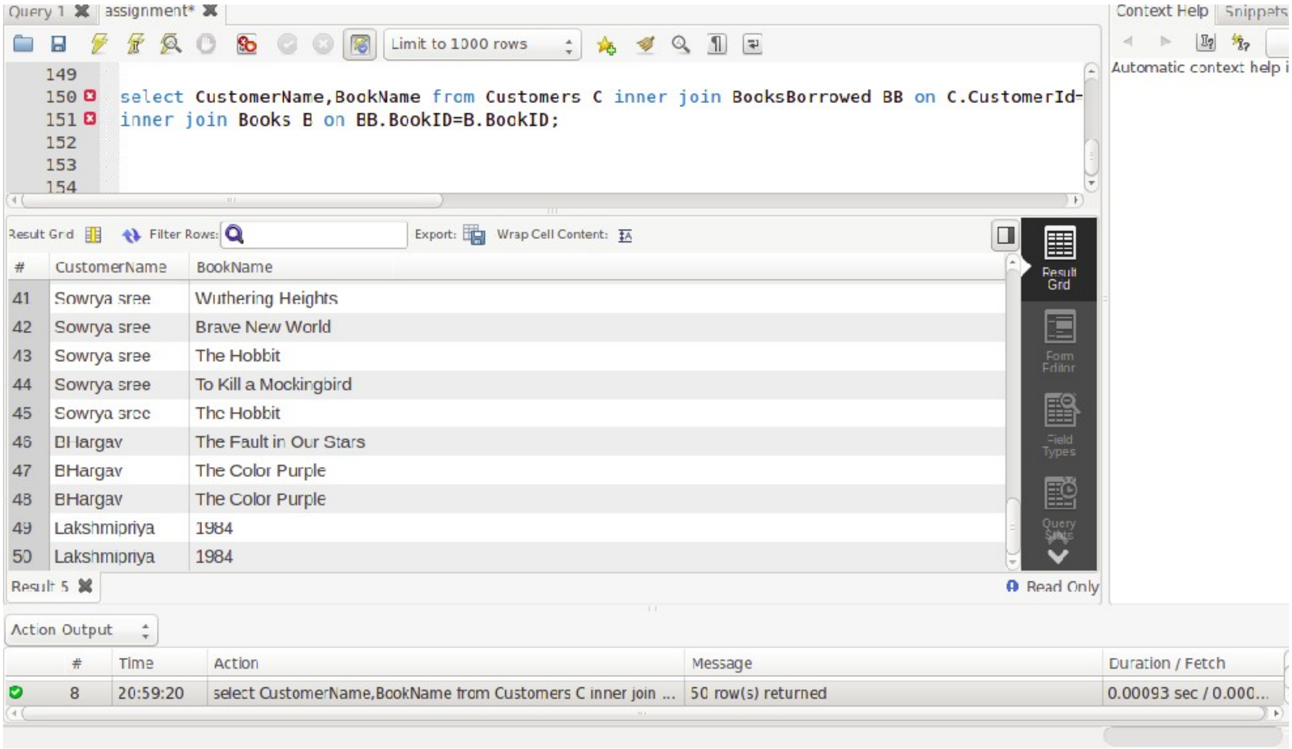
	#	Time	Action	Message	Duration / Fetch
✓	8	20:59:20	select CustomerName,BookName from Customers C inner join ...	50 row(s) returned	0.00093 sec / 0.000...



```
select CustomerName,BookName from Customers C inner join BooksBorrowed BB on C.CustomerId=
inner join Books B on BB.BookID=B.BookID;
```

#	CustomerName	BookName
31	Dharmateja	The Hunger Games
32	Dhanasekaran	The Lord of the Rings
33	Dhanasekaran	The Handmaid's Tale
34	Dhanasekaran	The Da Vinci Code
35	Dhanasekaran	The Great Gatsby
36	Dhanasekaran	To Kill a Mockingbird
37	Dhanasekaran	Gone Girl
38	Dhanasekaran	The Great Gatsby
39	Dhanasekaran	To Kill a Mockingbird
40	Sowrya sree	To Kill a Mockingbird

	#	Time	Action	Message	Duration / Fetch
✓	8	20:59:20	select CustomerName,BookName from Customers C inner join ...	50 row(s) returned	0.00093 sec / 0.000...

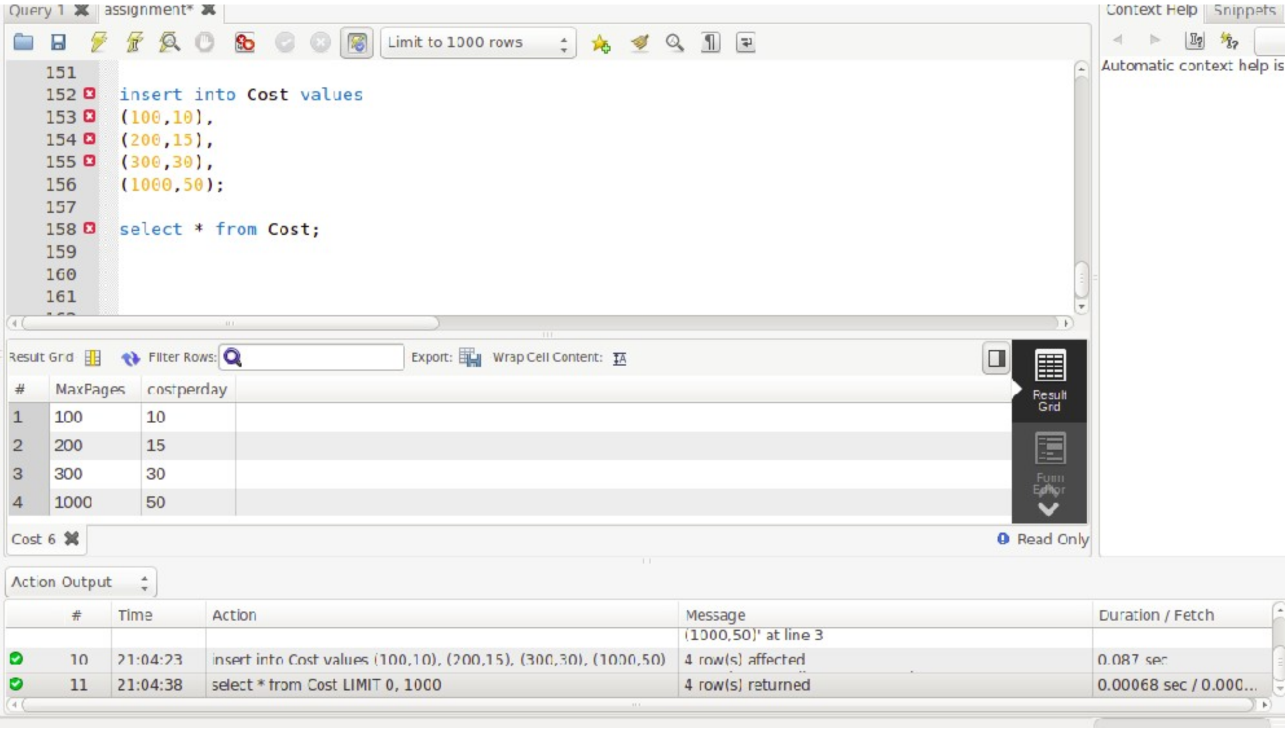


```
select CustomerName,BookName from Customers C inner join BooksBorrowed BB on C.CustomerId=
inner join Books B on BB.BookID=B.BookID;
```

#	CustomerName	BookName
41	Sowrya sree	Wuthering Heights
42	Sowrya sree	Brave New World
43	Sowrya sree	The Hobbit
44	Sowrya sree	To Kill a Mockingbird
45	Sowrya sree	The Hobbit
46	BHargav	The Fault in Our Stars
47	BHargav	The Color Purple
48	BHargav	The Color Purple
49	Lakshmipriya	1984
50	Lakshmipriya	1984

	#	Time	Action	Message	Duration / Fetch
✓	8	20:59:20	select CustomerName,BookName from Customers C inner join ...	50 row(s) returned	0.00093 sec / 0.000...

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

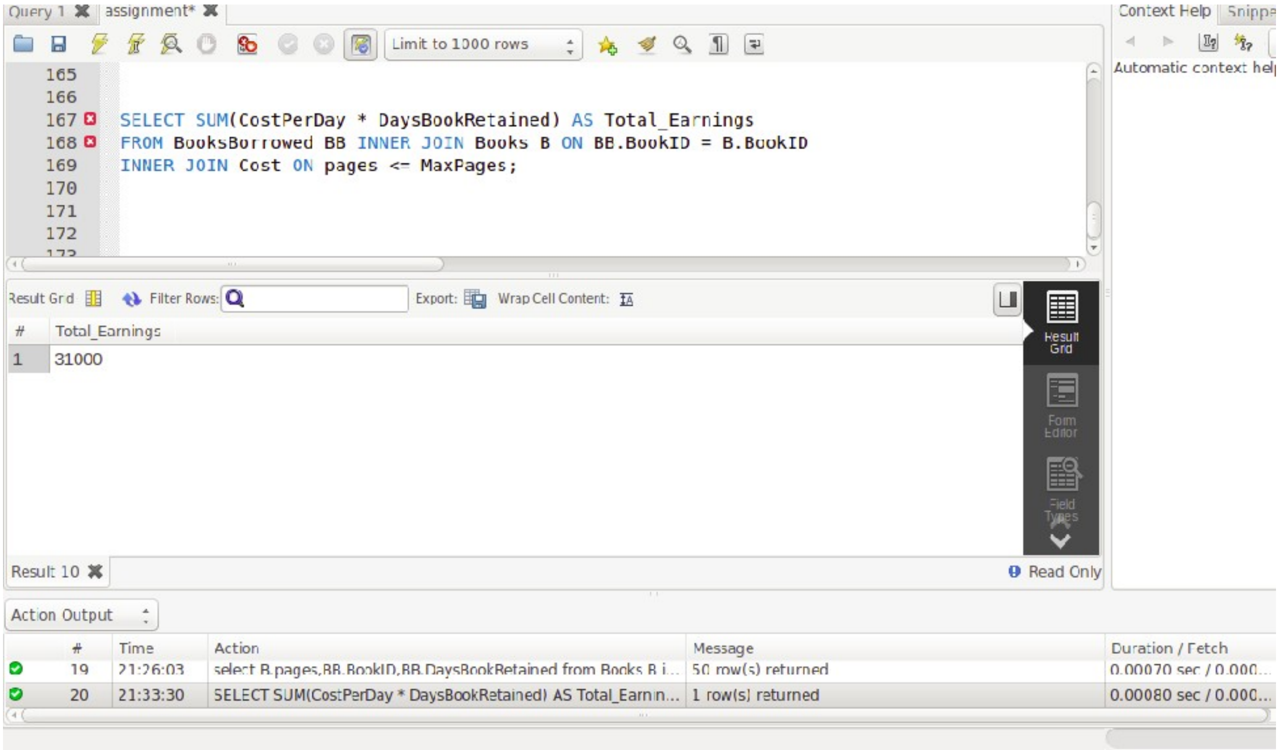


```
insert into Cost values
(100,10),
(200,15),
(300,30),
(1000,50);

select * from Cost;
```

#	MaxPages	costperday
1	100	10
2	200	15
3	300	30
4	1000	50

	#	Time	Action	Message	Duration / Fetch
				(1000,50)' at line 3	
✓	10	21:04:23	insert into Cost values (100,10), (200,15), (300,30), (1000,50)	4 row(s) affected	0.087 sec
✓	11	21:04:38	select * from Cost LIMIT 0, 1000	4 row(s) returned	0.00068 sec / 0.000...

11. total Earnings by Library.

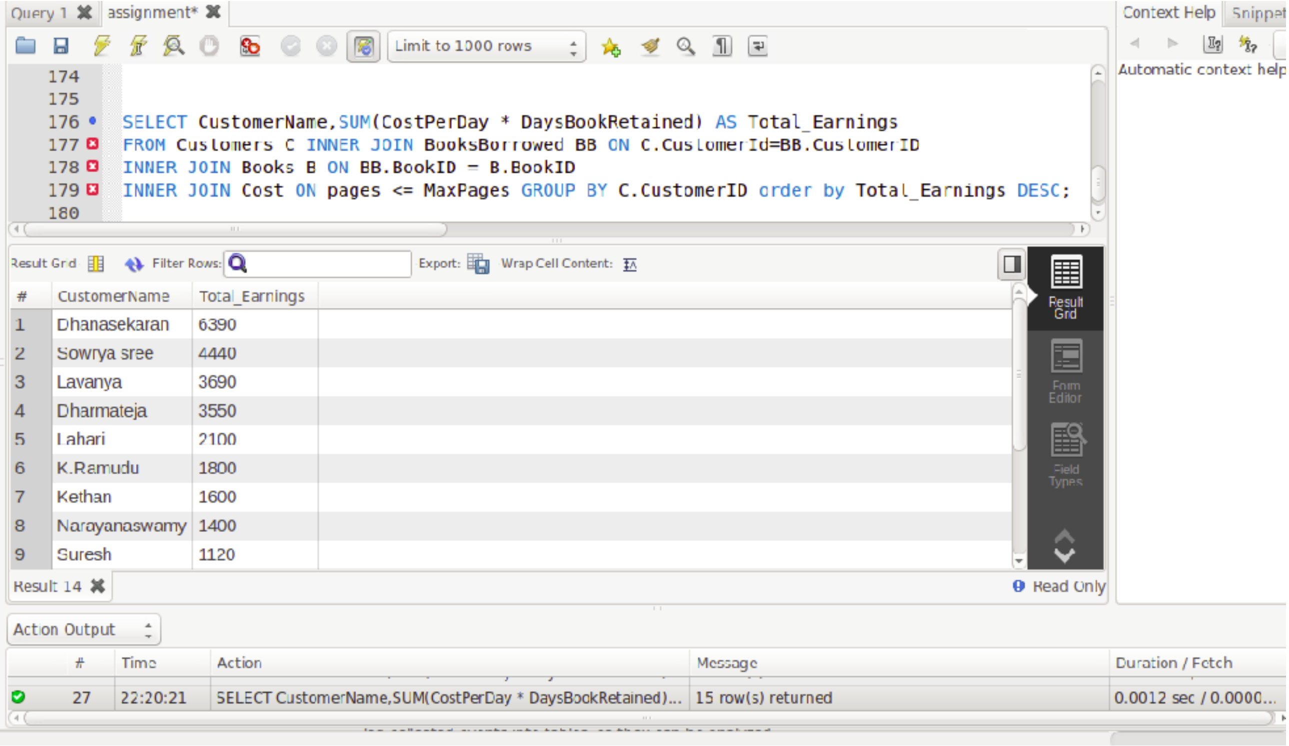


```
SELECT SUM(CostPerDay * DaysBookRetained) AS Total_Earnings
FROM BooksBorrowed BB INNER JOIN Books B ON BB.BookID = B.BookID
INNER JOIN Cost ON pages <= MaxPages;
```

#	Total_Earnings
1	31000

	#	Time	Action	Message	Duration / Fetch
✓	19	21:26:03	select B.pages,BB.BookID,BB.DaysBookRetained from Books B i...	50 row(s) returned	0.00070 sec / 0.000...
✓	20	21:33:30	SELECT SUM(CostPerDay * DaysBookRetained) AS Total_Earnin...	1 row(s) returned	0.00080 sec / 0.000...

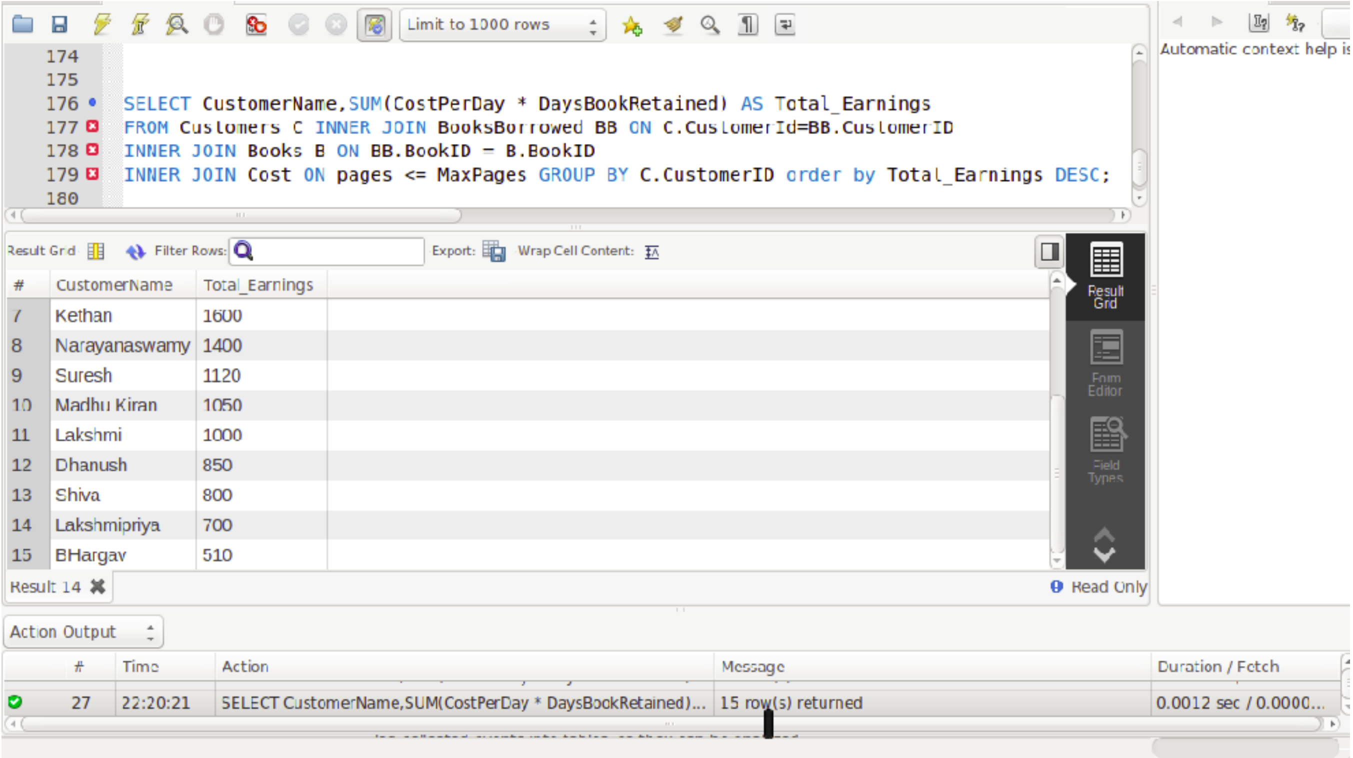
12. Amount paid by each customer. Rank the customers based in amount paid.



```
SELECT CustomerName,SUM(CostPerDay * DaysBookRetained) AS Total_Earnings
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 Total_Earnings DESC;
```

#	CustomerName	Total_Earnings
1	Dhanasekaran	6390
2	Sowrya sree	4440
3	Lavanya	3690
4	Dharmateja	3550
5	Lahari	2100
6	K.Ramudu	1800
7	Kethan	1600
8	Narayanaswamy	1400
9	Suresh	1120

	#	Time	Action	Message	Duration / Fetch
✓	27	22:20:21	SELECT CustomerName,SUM(CostPerDay * DaysBookRetained)...	15 row(s) returned	0.0012 sec / 0.0000...

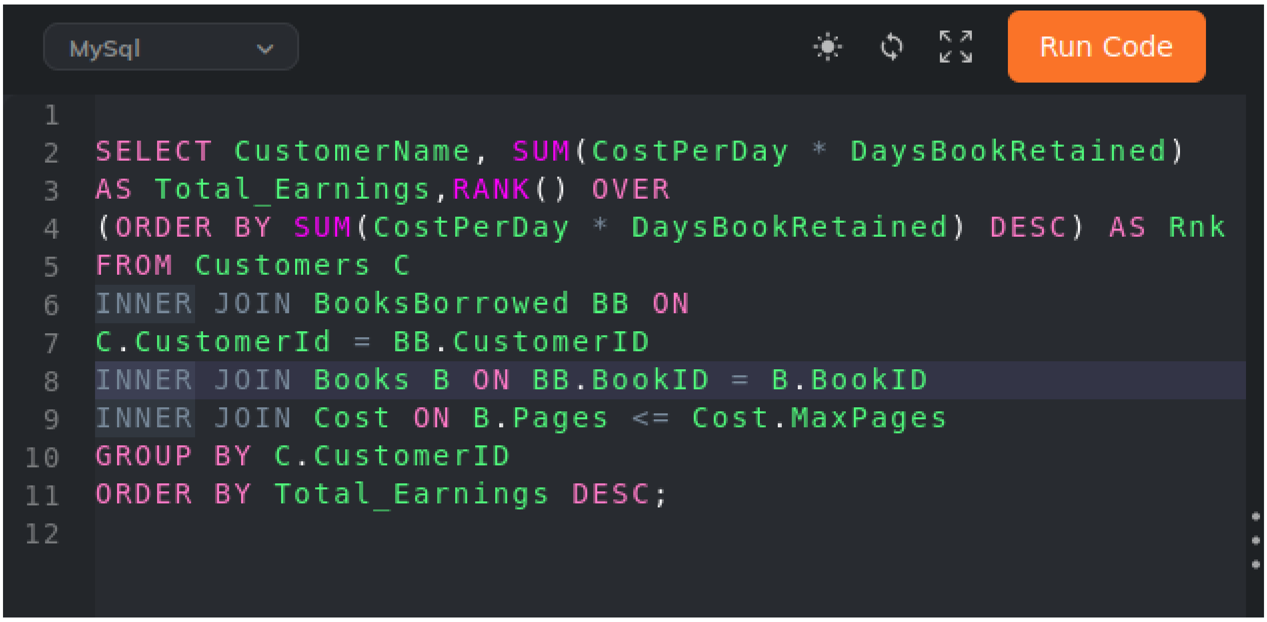


```
SELECT CustomerName,SUM(CostPerDay * DaysBookRetained) AS Total_Earnings
FROM Customers C INNER JOIN BooksBorrowed BB ON C.CustomerId=BB.CustomerID
INNER JOIN Books B ON BB.BookID = B.BookID
INNER JOIN Cost ON pages <= MaxPages GROUP BY C.CustomerID order by Total_Earnings DESC;
```

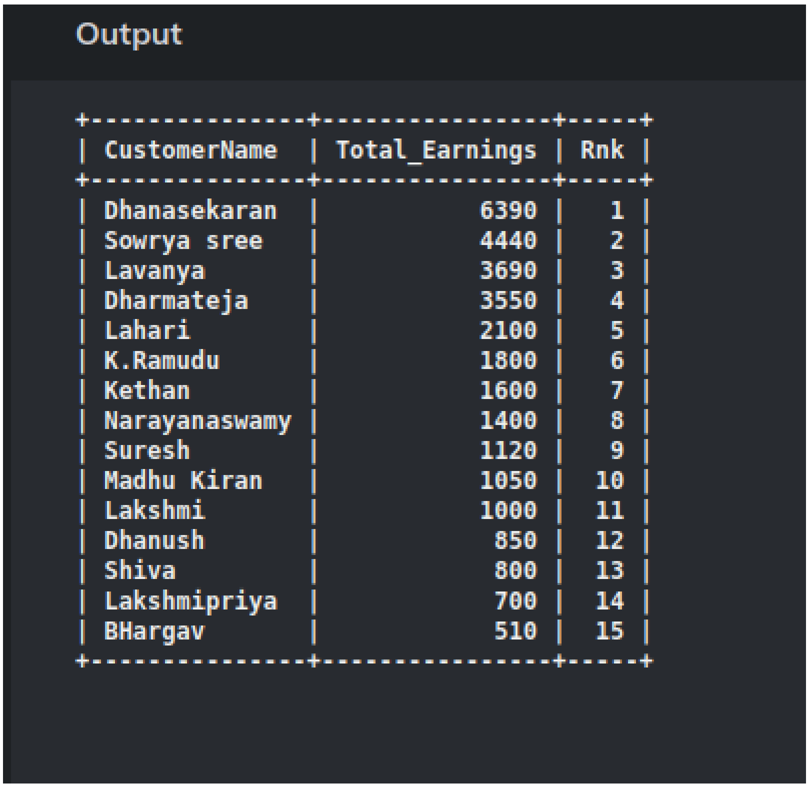
#	CustomerName	Total_Earnings
7	Kethan	1600
8	Narayanaswamy	1400
9	Suresh	1120
10	Madhu Kiran	1050
11	Lakshmi	1000
12	Dhanush	850
13	Shiva	800
14	Lakshmipriya	700
15	BHargav	510

	#	Time	Action	Message	Duration / Fetch
✓	27	22:20:21	SELECT CustomerName,SUM(CostPerDay * DaysBookRetained)...	15 row(s) returned	0.0012 sec / 0.0000...

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



```
SELECT CustomerName, SUM(CostPerDay * DaysBookRetained)
AS Total_Earnings,RANK() OVER
(ORDER BY SUM(CostPerDay * DaysBookRetained) DESC) AS Rnk
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 B.Pages <= Cost.MaxPages
GROUP BY C.CustomerID
ORDER BY Total_Earnings DESC;
```



Output

```
+---------------+----------------+-----+
| CustomerName  | Total_Earnings | Rnk |
+---------------+----------------+-----+
| Dhanasekaran  |           6390 |   1 |
| Sowrya sree   |           4440 |   2 |
| Lavanya       |           3690 |   3 |
| Dharmateja    |           3550 |   4 |
| Lahari        |           2100 |   5 |
| K.Ramudu      |           1800 |   6 |
| Kethan        |           1600 |   7 |
| Narayanaswamy |           1400 |   8 |
| Suresh        |           1120 |   9 |
| Madhu Kiran   |           1050 |  10 |
| Lakshmi       |           1000 |  11 |
| Dhanush       |            850 |  12 |
| Shiva         |            800 |  13 |
| Lakshmipriya  |            700 |  14 |
| BHargav       |            510 |  15 |
+---------------+----------------+-----+
```