LIBRARY MANAGEMENT SYSTEM

Project for SQL Module

1. Description:

Following database schema is designed to function as a backend storage database for a web application built to manage a library.

By storing information in a relational database, all the tasks related to daily functioning of the library can be performed easily and much more efficiently. Some of the benefits of using this system to store data over traditional paper registers are as follows:
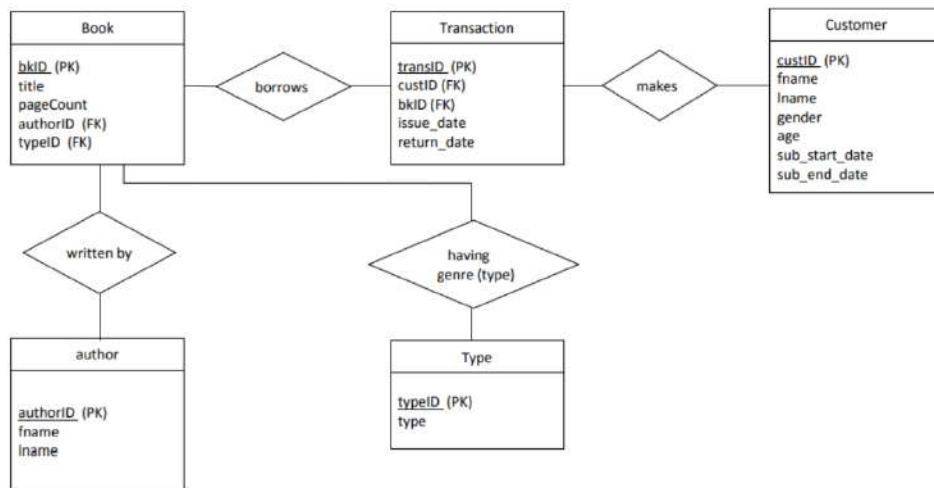
- Updating and modifying booklist in the library is much easier and efficient
- Maintaining customer details and their account is easy and efficient.
- Calculations like due payments can be done automatically by DBMS, thus eliminating human error
- RDBMS provides many ways to analyze available data, thus helping in making more informed decisions about inventory management and other aspects of library management

This database contains 5 tables:

1. Author
2. Type (Genre of book)
3. Book
4. Customer
5. Transaction

How these tables/entities are related to each other is shown pictorially on next page through ER diagram, i.e., Entity Relationship Diagram.

2. ER-Diagram (Entity Relation – Diagram) for Library Management System:

Book

bkID (PK)
title
pageCount
authorID (FK)
typeID (FK)

borrows

Transaction

transID (PK)
custID (FK)
bkID (FK)
issue_date
return_date

makes

Customer

custID (PK)
fname
lname
gender
age
sub_start_date
sub_end_date

written by

having genre (type)

author

authorID (PK)
fname
lname

Type

typeID (PK)
type

Navigator

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INSTANCE
Administration   Schemas

Information

No object selected

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Limit to 1000 rows

```sql
1   create database ldm;
2   use ldm;
3   CREATE TABLE author (
4     authorID INT,
5     fname VARCHAR(50),
6     lname VARCHAR(50),
7     PRIMARY KEY(authorID)
8   );
9   INSERT INTO author VALUES
10    (1, 'William Dean', 'Howells'),
11    (2, 'Frederic', 'Brown'),
12    (3, 'Jack', 'London'),
13    (4, 'Albert', 'Blaisdell'),
14    (5, 'Ellis', 'Butler'),
```

SQL Additions

Jump to

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Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
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✓	2	20:31:55	use ldm	0 row(s) affected	0.000 sec
✓	3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
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Object Info   Session

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Information

No object selected

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Limit to 1000 rows

```
13      (4, 'Albert', 'Blaisdell'),
14      (5, 'Ellis', 'Butler'),
15      (6, 'Arthur', 'Machen'),
16      (7, 'Titus', 'Lucretius'),
17      (8, 'Rabindranath', 'Tagore'),
18      (9, 'Isaac', 'Asimov'),
19      (10, 'Charles', 'Dickens'),
20      (11, 'Ralph Waldo', 'Emerson'),
21      (12, 'Dorothy', 'Canfield'),
22      (13, 'Givoanni', 'Boccaccio'),
23      (14, 'George', 'Orwell'),
24      (15, 'Publius', 'Ovid'),
25      (16, 'Robert Louis', 'Stevenson'),
26      (17, 'Virginia', 'Woolf'),
```

SQL Additions

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Type here to search

Rain tomorrow

ENG

20:37:13
22-08-2023

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File   Edit   View   Query   Database   Server   Tools   Scripting   Help

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Limit to 1000 rows

```
26      (17, 'Virginia', 'Woolf'),
27      (18, 'George', 'Eliot'),
28      (19, 'Amelia B.', 'Edwards'),
29      (20, 'Fyodor', 'Dostoevsky'),
30      (21, 'Emily', 'Dickinson'),
31      (22, 'Edna', 'Ferber'),
32      (23, 'Joseph Sheridan', 'LeFanu'),
33      (24, 'John', 'DosPassos'),
34      (25, 'Ruth', 'Stuart'),
35      (26, 'Vladimir', 'Nabokov'),
36      (27, 'Johanna', 'Spyri'),
37      (28, 'Ernest', 'Dowson'),
38      (29, 'Mary Hallock', 'Foote'),
39      (30, 'Zane', 'Grey'),
```

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Information

No object selected

Object Info   Session

SQL Additions

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Information

No object selected

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Limit to 1000 rows

```
39        (30, 'Zane', 'Grey'),
40        (31, 'H. P.', 'Lovecraft'),
41        (32, 'Samuel', 'Pepys'),
42        (33, 'Kate Dickinson', 'Sweetser'),
43        (34, 'William', 'Lampton'),
44        (35, 'Mother', 'Goose'),
45        (36, 'Eleanor Hallowell', 'Abbott');
46
47  •  ⊖  CREATE TABLE type (
48          typeID INT,
49          type VARCHAR(50),
50          PRIMARY KEY (typeID)
51        );
52  •     INSERT into type VALUES
```

SQLAdditions

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🗇 Action Output

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Object Info   Session

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Information

No object selected

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Limit to 1000 rows

```
52 •   INSERT into type VALUES
53     (1, 'Science fiction'),
54     (2, 'Satire'),
55     (3, 'Drama'),
56     (4, 'Action and Adventure'),
57     (5, 'Romance'),
58     (6, 'Mystery'),
59     (7, 'Horror'),
60     (8, 'Health'),
61     (9, 'Guide'),
62     (10, 'Diaries'),
63     (11, 'Comics'),
64     (12, 'Diaries'),
65     (13, 'Journals'),
```

SQL Additions

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Output

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Object Info   Session

```
65    (13, 'Journals'),
66    (14, 'Biographies'),
67    (15, 'Fantasy'),
68    (16, 'History'),
69    (17, 'Science'),
70    (18, 'Art');
71
72 ● ⊖ CREATE TABLE book (
73      bkID INT,
74      title VARCHAR(50),
75      pageCount INT,
76      authorID INT,
77      typeID INT,
78      PRIMARY KEY (bkID),
```

Output

Action Output

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Limit to 1000 rows

```
78        PRIMARY KEY (bkID),
79        CONSTRAINT fk_bk_author FOREIGN KEY (authorID) REFERENCES author(authorID),
80        CONSTRAINT fk_bk_type FOREIGN KEY (typeID) REFERENCES type(typeID)
81        );
82  •     INSERT INTO book VALUES
83        (1, 'A Daughter of the Snows', 199, 3, 9),
84        (2, 'The Near East: 10,000 Years of History', 298, 9, 13),
85        (3, 'The Cocoon:A Rest-Cure Comedy', 90, 25, 12),
86        (4, 'The Freakshow Murders', 321, 2, 3),
87        (5, 'Pharaohs, Fellahs and Explorers', 367, 19, 9),
88        (6, 'Hard Times', 293, 10, 1),
89        (7, 'A Modern Instance', 222, 1, 12),
90        (8, 'The Real Mother Goose', 88, 35, 1),
91        (9, 'A Thousand Miles Up the Nile', 110, 19, 18),
```

SQL Additions

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Information

No object selected

Object Info Session

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Limit to 1000 rows

```
 91        (9, 'A Thousand Miles Up the Nile', 110, 19, 18),
 92        (10, 'Children of Blood and Bone', 137, 7, 13),
 93        (11, 'A pushcart at the curb', 95, 24, 1),
 94        (12, 'The Desert and the Sown', 126, 29, 10),
 95        (13, 'Three Soldiers', 223, 24, 16),
 96        (14, 'The End of Eternity', 168, 9, 1),
 97        (15, 'Annie Kilburn', 291, 1, 12),
 98        (16, 'A Touch of Sun and Other Stories', 141, 29, 9),
 99        (17, 'Show Boat', 151, 22, 18),
100        (18, 'The Call of the Wild', 362, 3, 18),
101        (19, 'My Mark Twain', 339, 1, 9),
102        (20, 'Broken Ties', 134, 8, 5),
103        (21, 'Short Stories From American History', 305, 4, 8),
104        (22, 'Mrs Rosie and the Priest', 104, 13, 14),
```

SQL Additions

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Limit to 1000 rows

```
104        (22, 'Mrs Rosie and the Priest', 104, 13, 14),
105        (23, 'So Big', 209, 22, 3),
106        (24, 'Monsieur Maurice ', 92, 19, 8),
107        (25, 'The Master of Ballantrae', 236, 16, 13),
108        (26, 'The Unlived Life of Little Mary Ellen', 99, 25, 6),
109        (27, 'Mouse - The Last Train', 184, 2, 14),
110        (28, 'Edith Bonham', 122, 29, 7),
111        (29, 'Maybe Mother Goose', 161, 35, 14),
112        (30, 'The Noble Gases', 321, 9, 5),
113        (31, 'Rainy Week', 98, 36, 7),
114        (32, 'A Hazard of New Fortunes', 144, 1, 4),
115        (33, 'A Plot for Murder', 108, 2, 13),
116        (34, 'Nature', 357, 11, 8),
117        (35, 'Hickory Dickory Dock', 326, 35, 6),
```

SQLAdditions

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```
117     (35, 'Hickory Dickory Dock', 326, 35, 6),
118     (36, 'Big Fat Hen', 232, 35, 12),
119     (37, 'The Lone Star Ranger', 328, 30, 9),
120     (38, 'The Great Fire of London', 252, 32, 9),
121     (39, 'White Nights', 265, 20, 14),
122     (40, 'In a Glass Darkly', 173, 23, 9),
123     (41, 'Fanny herself', 248, 22, 10),
124     (42, 'Loaded', 273, 2, 4),
125     (43, 'A Foregone Conclusion', 121, 1, 15),
126     (44, 'The Hill of Dreams', 175, 6, 6),
127     (45, 'Adventure', 217, 3, 8),
128     (46, 'A Tagore Reader', 285, 8, 4),
129     (47, 'A Tale of Two Cities', 331, 10, 13),
130     (48, 'Dombey and Son', 344, 10, 14),
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Object Info   Session

```sql
130    (48, 'Dombey and Son', 344, 10, 14),
131    (49, 'Famous Women', 273, 13, 1),
132    (50, 'Rejection, The Ruling Spirit', 358, 5, 2);
133
134  ⊖ CREATE TABLE customer (
135    custID INT,
136    fname VARCHAR(30),
137    lname VARCHAR(30),
138    gender varchar(1),
139    age INT(3),
140    sub_start_date DATE,
141    sub_end_date DATE,
142    PRIMARY KEY (custID)
143    );
```

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SQL Additions

Limit to 1000 rows

```
143        );
144   ●    INSERT INTO customer VALUES
145        (1, 'Hazel', 'Green', 'F', 28, '2020-05-15', '2023-05-15'),
146        (2, 'Ashley', 'Marshall', 'F', 20, '2020-10-28', '2023-10-28'),
147        (3, 'Ansley', 'Green', 'F', 22, '2021-07-12', '2024-07-12'),
148        (4, 'Alcock', 'Chapman', 'F', 22, '2020-01-25', '2023-01-25'),
149        (5, 'Meadow', 'Taylor', 'F', 23, '2020-12-30', '2023-12-30'),
150        (6, 'Green', 'Wright', 'M', 32, '2020-03-09', '2023-03-09'),
151        (7, 'Paxton', 'Foster', 'M', 34, '2020-03-03', '2023-03-03'),
152        (8, 'Gray', 'King', 'M', 62, '2020-06-26', '2023-06-26'),
153        (9, 'Jones', 'Collins', 'M', 25, '2020-01-26', '2023-01-26'),
154        (10, 'Leslie', 'Young', 'F', 42, '2020-02-10', '2023-02-10'),
155        (11, 'Hailey', 'Hill', 'F', 27, '2021-01-16', '2024-01-16'),
156        (12, 'Washington', 'Martin', 'M', 24, '2021-05-23', '2024-05-23'),
```

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toggle automatic help.

Context Help   Snippets

Navigator

MANAGEMENT
- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

Administration   Schemas

Information

No object selected

Object Info   Session

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	20:31:49	create database ldm	1 row(s) affected	0.000 sec
2	20:31:55	use ldm	0 row(s) affected	0.000 sec
3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
4	20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
5	20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
6	20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Type here to search

83%   27°C Mostly cloudy   ENG   20:40:05   22-08-2023

sql_project - Warning - not su... ×

File   Edit   View   Query   Database   Server   Tools   Scripting   Help

Navigator

MANAGEMENT
- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

Administration   Schemas

Information

No object selected

Object Info   Session

completesql_project*   ×

Limit to 1000 rows

```
143         );
144    •    INSERT INTO customer VALUES
145         (1, 'Hazel', 'Green', 'F', 28, '2020-05-15', '2023-05-15'),
146         (2, 'Ashley', 'Marshall', 'F', 20, '2020-10-28', '2023-10-28'),
147         (3, 'Ansley', 'Green', 'F', 22, '2021-07-12', '2024-07-12'),
148         (4, 'Alcock', 'Chapman', 'F', 22, '2020-01-25', '2023-01-25'),
149         (5, 'Meadow', 'Taylor', 'F', 23, '2020-12-30', '2023-12-30'),
150         (6, 'Green', 'Wright', 'M', 32, '2020-03-09', '2023-03-09'),
151         (7, 'Paxton', 'Foster', 'M', 34, '2020-03-03', '2023-03-03'),
152         (8, 'Gray', 'King', 'M', 62, '2020-06-26', '2023-06-26'),
153         (9, 'Jones', 'Collins', 'M', 25, '2020-01-26', '2023-01-26'),
154         (10, 'Leslie', 'Young', 'F', 42, '2020-02-10', '2023-02-10'),
155         (11, 'Hailey', 'Hill', 'F', 27, '2021-01-16', '2024-01-16'),
156         (12, 'Washington', 'Martin', 'M', 24, '2021-05-23', '2024-05-23'),
```

SQL Additions

Jump to

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or to toggle automatic help.

Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	20:31:49	create database ldm	1 row(s) affected	0.000 sec
2	20:31:55	use ldm	0 row(s) affected	0.000 sec
3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
4	20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
5	20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
6	20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Type here to search

83%   27°C   Mostly cloudy   ENG   20:40:52   22-08-2023

MySQL Workbench

sql_project - Warning - not su... ×

File   Edit   View   Query   Database   Server   Tools   Scripting   Help

Navigator

MANAGEMENT
- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

Administration   Schemas

Information

No object selected

completesql project* ×

Limit to 1000 rows

```
156    (12, 'Washington', 'Martin', 'M', 24, '2021-05-23', '2024-05-23'),
157    (13, 'Ramirez', 'Green', 'M', 33, '2020-08-28', '2023-08-28'),
158    (14, 'Morgan', 'Smith', 'M', 29, '2021-05-15', '2024-05-15'),
159    (15, 'Perez', 'Baker', 'M', 53, '2020-10-27', '2023-10-27'),
160    (16, 'Alfie', 'Watson', 'M', 26, '2021-04-05', '2024-04-05'),
161    (17, 'Madison', 'Jackson', 'F', 35, '2021-02-15', '2024-02-15'),
162    (18, 'Beverly', 'Moore', 'F', 22, '2020-11-19', '2023-11-19'),
163    (19, 'Kaden', 'Anderson', 'M', 26, '2021-11-11', '2024-11-11'),
164    (20, 'Carter', 'Adams', 'M', 27, '2021-07-08', '2024-07-08'),
165    (21, 'Ackland', 'Adams', 'F', 28, '2021-05-19', '2024-05-19'),
166    (22, 'Hadley', 'Parker', 'F', 37, '2020-11-21', '2023-11-21'),
167    (23, 'Henderson', 'Cook', 'M', 38, '2021-08-06', '2024-08-06'),
168    (24, 'Wright', 'Young', 'M', 35, '2021-05-14', '2024-05-14'),
169    (25, 'Lindsey', 'Wilkinson', 'F', 28, '2021-10-08', '2024-10-08'),
```

SQL Additions

Jump to

Automatic context help is
disabled. Use the toolbar t
manually get help for the
current caret position or t
toggle automatic help.

Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	20:31:49	create database ldm	1 row(s) affected	0.000 sec
2	20:31:55	use ldm	0 row(s) affected	0.000 sec
3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
4	20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
5	20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
6	20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Object Info   Session

sql_project - Warning - not su... ×

File Edit View Query Database Server Tools Scripting Help

Navigator

MANAGEMENT
- Server Status
- Client Connections
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- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

Administration Schemas

Information

No object selected

completesql project* ×

Limit to 1000 rows

```
169    (25, 'Lindsey', 'Wilkinson', 'F', 28, '2021-10-08', '2024-10-08'),
170    (26, 'Wren', 'Chapman', 'F', 25, '2021-11-06', '2024-11-06'),
171    (27, 'Love', 'Chapman', 'F', 19, '2021-10-15', '2024-10-15'),
172    (28, 'Wes', 'Bell', 'M', 23, '2021-01-25', '2024-01-25'),
173    (29, 'Tyler', 'Carter', 'M', 27, '2021-08-24', '2024-08-24'),
174    (30, 'Edwin', 'Cook', 'M', 39, '2021-08-17', '2024-08-17'),
175    (31, 'Sally', 'Wood', 'F', 45, '2020-06-07', '2023-06-07'),
176    (32, 'Nelson', 'Smith', 'M', 27, '2020-11-15', '2023-11-15'),
177    (33, 'Arabelle', 'Brown', 'F', 52, '2021-03-11', '2024-03-11'),
178    (34, 'Carter', 'Harrison', 'M', 21, '2021-11-30', '2024-11-30'),
179    (35, 'Baker', 'Bell', 'M', 20, '2021-03-24', '2024-03-24'),
180    (36, 'Cherish', 'Cooper', 'F', 34, '2020-01-31', '2023-01-31'),
181    (37, 'Remington', 'Wright', 'M', 29, '2020-08-14', '2023-08-14'),
182    (38, 'Edwards', 'King', 'M', 24, '2020-02-01', '2023-02-01'),
```

SQLAdditions

Automatic context help is
disabled. Use the toolbar t
manually get help for the
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toggle automatic help.

Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	20:31:49	create database ldm	1 row(s) affected	0.000 sec
2	20:31:55	use ldm	0 row(s) affected	0.000 sec
3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
4	20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
5	20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
6	20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Object Info Session

Type here to search

27°C Mostly cloudy   ENG   20:41:47   22-08-2023

sql_project - Warning - not su... ×

File   Edit   View   Query   Database   Server   Tools   Scripting   Help

MANAGEMENT
- Server Status
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- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

Administration   Schemas

Information

No object selected

completesql project*   ×

Limit to 1000 rows

```
182        (38, 'Edwards', 'King', 'M', 24, '2020-02-01', '2023-02-01'),
183        (39, 'Harleigh', 'Taylor', 'F', 26, '2020-05-05', '2023-05-05'),
184        (40, 'Ryleigh', 'Clark', 'F', 45, '2020-10-29', '2023-10-29'),
185        (41, 'Albert', 'Richardson', 'F', 57, '2021-03-19', '2024-03-19'),
186        (42, 'Lee', 'Ward', 'M', 36, '2020-05-13', '2023-05-13'),
187        (43, 'Kaylin', 'Bell', 'F', 28, '2020-09-12', '2023-09-12'),
188        (44, 'Agard', 'Young', 'F', 23, '2021-04-03', '2024-04-03'),
189        (45, 'Turner', 'Hall', 'M', 24, '2021-01-07', '2024-01-07'),
190        (46, 'Akes', 'White', 'F', 20, '2021-03-08', '2024-03-08'),
191        (47, 'Lewis', 'Lee', 'M', 35, '2021-01-30', '2024-01-30'),
192        (48, 'Karson', 'Cook', 'M', 30, '2021-06-26', '2024-06-26'),
193        (49, 'Hayden', 'Young', 'M', 31, '2020-12-15', '2023-12-15'),
194        (50, 'Sterling', 'Shaw', 'M', 26, '2021-06-24', '2024-06-24');
195
```

SQLAdditions

Jump to

Automatic context help is
disabled. Use the toolbar t
manually get help for the
current caret position or to
toggle automatic help.

Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	20:31:49	create database ldm	1 row(s) affected	0.000 sec
2	20:31:55	use ldm	0 row(s) affected	0.000 sec
3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
4	20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
5	20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
6	20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Object Info   Session

Type here to search

83%   27°C Mostly cloudy   ENG   20:41:55
22-08-2023

sql_project - Warning - not su... ×

File   Edit   View   Query   Database   Server   Tools   Scripting   Help

Navigator

MANAGEMENT
- Server Status
- Client Connections
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- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

Administration   Schemas

Information

No object selected

completesql project*

Limit to 1000 rows

```
195
196  ●  ⊖  CREATE TABLE transaction (
197          transID INT,
198          custID INT,
199          bkID INT,
200          issue_date DATETIME,
201          return_date DATETIME,
202          PRIMARY KEY (transID),
203          CONSTRAINT fk_trans_cust FOREIGN KEY (custID) REFERENCES customer(custID),
204          CONSTRAINT fk_trans_bk FOREIGN KEY (bkID) REFERENCES book(bkID)
205       );
206  ●   INSERT INTO transaction VALUES
207          (1, 37, 24, '2021-08-31 04:30:00', '2021-09-17 00:15:00'),
208          (2, 32, 17, '2021-10-01 14:28:00', '2021-10-07 11:22:00'),
```

SQL Additions

◄   ►   Jump to

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
●	1	20:31:49	create database ldm	1 row(s) affected	0.000 sec
●	2	20:31:55	use ldm	0 row(s) affected	0.000 sec
●	3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
●	4	20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
●	5	20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
●	6	20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Object Info   Session

Type here to search

83%   27°C Mostly cloudy   ENG   20:42:24   22-08-2023

sql_project - Warning - not su... ×

File Edit View Query Database Server Tools Scripting Help

Navigator

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

Administration Schemas

Information

No object selected

completesql_project* ×

Limit to 1000 rows

```
208      (2, 32, 17, '2021-10-01 14:28:00', '2021-10-07 11:22:00'),
209      (3, 40, 29, '2021-10-02 10:45:00', '2021-10-10 17:16:00'),
210      (4, 36, 44, '2021-10-03 15:57:00', '2021-10-09 10:43:00'),
211      (5, 11, 16, '2021-10-07 13:19:00', '2021-10-15 18:55:00'),
212      (6, 29, 34, '2021-10-09 08:32:00', '2021-10-14 08:17:00'),
213      (7, 23, 26, '2021-10-09 15:48:00', '2021-10-21 10:51:00'),
214      (8, 3, 34, '2021-10-10 19:55:00', '2021-10-15 09:20:00'),
215      (9, 37, 50, '2021-10-14 10:25:00', '2021-10-14 12:52:00'),
216      (10, 36, 39, '2021-10-16 08:53:00', '2021-10-29 18:47:00'),
217      (11, 47, 14, '2021-10-24 10:50:00', '2021-11-05 18:19:00'),
218      (12, 32, 30, '2021-10-24 13:48:00', '2021-10-28 19:33:00'),
219      (13, 7, 33, '2021-10-27 08:10:00', '2021-11-10 14:34:00'),
220      (14, 32, 12, '2021-10-27 09:27:00', '2021-11-13 18:23:00'),
221      (15, 44, 19, '2021-10-29 14:39:00', '2021-11-07 18:34:00'),
```

SQL Additions

Jump to

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or to toggle automatic help.

Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓	1 20:31:49	create database ldm	1 row(s) affected	0.000 sec
✓	2 20:31:55	use ldm	0 row(s) affected	0.000 sec
✓	3 20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
✓	4 20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
✓	5 20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
✓	6 20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Object Info Session

Type here to search

83% 27°C Mostly cloudy ENG 20:42:51 22-08-2023

sql_project - Warning - not su... ×

File   Edit   View   Query   Database   Server   Tools   Scripting   Help

Navigator

MANAGEMENT
- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

Administration   Schemas

Information

No object selected

Object Info   Session

completesql project*

Limit to 1000 rows

```
221       (15, 44, 19, '2021-10-29 14:39:00', '2021-11-07 18:34:00'),
222       (16, 11, 1, '2021-11-03 15:11:00', '2021-11-04 19:42:00'),
223       (17, 15, 3, '2021-11-06 11:51:00', '2021-11-12 11:49:00'),
224       (18, 4, 36, '2021-11-06 16:24:00', '2021-11-11 14:00:00'),
225       (19, 8, 44, '2021-11-12 14:02:00', '2021-11-13 15:21:00'),
226       (20, 33, 21, '2021-11-14 20:35:00', '2021-11-30 07:56:00'),
227       (21, 23, 18, '2021-11-16 07:40:00', '2021-11-24 11:57:00'),
228       (22, 13, 29, '2021-11-17 18:29:00', '2021-11-18 11:27:00'),
229       (23, 42, 31, '2021-11-19 18:54:00', '2021-12-05 14:59:00'),
230       (24, 11, 48, '2021-11-20 17:26:00', '2021-11-26 08:16:00'),
231       (25, 29, 42, '2021-11-23 12:20:00', '2021-11-24 10:13:00'),
232       (26, 37, 48, '2021-11-24 12:45:00', '2021-11-27 10:13:00'),
233       (27, 7, 20, '2021-11-26 19:55:00', '2021-12-03 15:55:00'),
234       (28, 39, 31, '2021-12-02 12:51:00', '2021-12-17 08:13:00'),
```

SQL Additions

◄   ►   Jump to

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓	1	20:31:49	create database ldm	1 row(s) affected	0.000 sec
✓	2	20:31:55	use ldm	0 row(s) affected	0.000 sec
✓	3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
✓	4	20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
✓	5	20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
✓	6	20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Type here to search

83%   27°C Mostly cloudy   ENG   20:42:57
22-08-2023

Navigator

MANAGEMENT
- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE
Administration   Schemas

Information

No object selected

completesql_project*

Limit to 1000 rows

```
234    (28, 39, 31, '2021-12-02 12:51:00', '2021-12-17 08:13:00'),
235    (29, 49, 17, '2021-12-14 10:11:00', '2021-12-21 09:41:00'),
236    (30, 37, 3, '2021-12-14 12:11:00', '2021-12-14 12:13:00'),
237    (31, 1, 49, '2021-12-15 15:21:00', '2021-12-17 09:45:00'),
238    (32, 49, 10, '2021-12-16 11:16:00', '2022-01-02 13:42:00'),
239    (33, 34, 26, '2021-12-19 17:38:00', '2021-12-30 09:59:00'),
240    (34, 21, 28, '2021-12-21 11:05:00', '2022-01-06 17:13:00'),
241    (35, 31, 14, '2021-12-22 09:48:00', '2022-01-06 16:37:00'),
242    (36, 10, 20, '2021-12-22 14:12:00', '2021-12-22 16:44:00'),
243    (37, 25, 50, '2021-12-22 15:27:00', '2021-12-29 08:56:00'),
244    (38, 25, 32, '2021-12-22 19:01:00', '2022-01-04 11:16:00'),
245    (39, 11, 24, '2021-12-26 19:09:00', '2022-01-11 19:14:00'),
246    (40, 45, 31, '2021-12-28 19:35:00', '2022-01-07 09:41:00'),
247    (41, 36, 17, '2022-01-05 12:30:00', '2022-01-08 17:51:00'),
```

SQLAdditions

Automatic context help is
disabled. Use the toolbar t
manually get help for the
current caret position or t
toggle automatic help.

Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	20:31:49	create database ldm	1 row(s) affected	0.000 sec
2	20:31:55	use ldm	0 row(s) affected	0.000 sec
3	20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
4	20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
5	20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
6	20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Object Info   Session

sql_project - Warning - not su... ×

File   Edit   View   Query   Database   Server   Tools   Scripting   Help

completesql_project*

Limit to 1000 rows

```
247     (41, 36, 17, '2022-01-05 12:30:00', '2022-01-08 17:51:00'),
248     (42, 21, 16, '2022-01-07 12:04:00', '2022-01-12 16:31:00'),
249     (43, 27, 47, '2022-01-11 16:47:00', '2022-01-11 17:20:00'),
250     (44, 1, 23, '2022-01-12 08:13:00', '2022-01-22 13:34:00'),
251     (45, 11, 1, '2022-01-14 10:22:00', '2022-01-26 13:43:00'),
252     (46, 5, 20, '2022-01-14 13:19:00', '2022-01-22 10:37:00'),
253     (47, 22, 14, '2022-01-16 18:40:00', '2022-02-02 12:10:00'),
254     (48, 14, 14, '2022-01-19 13:28:00', '2022-01-23 19:36:00'),
255     (49, 45, 9, '2022-01-27 12:06:00', '2022-02-02 15:06:00'),
256     (50, 20, 13, '2022-01-27 13:47:00', '2022-02-10 11:31:00'),
257     (51, 24, 18, '2022-01-29 15:54:00', '2022-02-02 08:59:00'),
258     (52, 6, 4, '2022-01-30 15:25:00', '2022-02-04 09:19:00'),
259     (53, 39, 2, '2022-01-30 17:01:00', '2022-02-13 11:13:00'),
260     (54, 47, 26, '2022-02-02 11:02:00', '2022-02-12 11:36:00'),
```

SQL Additions

◀   ▶ | 🔡 🔧 | Jump to

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or to toggle automatic help.

Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓	1 20:31:49	create database ldm	1 row(s) affected	0.000 sec
✓	2 20:31:55	use ldm	0 row(s) affected	0.000 sec
✓	3 20:31:58	CREATE TABLE author (authorID INT, fname VARCHAR(50), lname VARCHAR(...	0 row(s) affected	0.016 sec
✓	4 20:32:13	INSERT INTO author VALUES (1, 'William Dean', 'Howells'), (2, 'Frederic', 'Brown'), ...	36 row(s) affected Records: 36 Duplicates: 0 Warnings: 0	0.000 sec
✓	5 20:32:17	CREATE TABLE type (typeID INT, type VARCHAR(50), PRIMARY KEY (typeID))	0 row(s) affected	0.000 sec
✓	6 20:32:40	INSERT into type VALUES (1, 'Science fiction'), (2, 'Satire'), (3, 'Drama'), (4, 'Action ...	18 row(s) affected Records: 18 Duplicates: 0 Warnings: 0	0.016 sec

Object Info   Session

sql_project - Warning - not su... ×

File   Edit   View   Query   Database   Server   Tools   Scripting   Help

Navigator

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- Users and Privileges
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- Data Import/Restore

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Information

No object selected

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Limit to 1000 rows

```
260        (54, 47, 26, '2022-02-02 11:02:00', '2022-02-12 11:36:00'),
261        (55, 39, 47, '2022-02-11 08:55:00', '2022-02-24 12:40:00'),
262        (56, 23, 35, '2022-02-12 17:59:00', '2022-02-24 08:56:00'),
263        (57, 35, 1, '2022-02-13 19:07:00', '2022-02-17 11:01:00'),
264        (58, 35, 1, '2022-02-16 07:08:00', '2022-02-17 11:14:00'),
265        (59, 50, 3, '2022-02-26 17:54:00', '2022-03-16 11:53:00'),
266        (60, 15, 12, '2022-02-27 15:38:00', '2022-03-11 14:44:00');
267
268  •    select * from author;
269  •    select * from type;
270  •    select * from book;
271  •    select * from customer;
272  •    select * from transaction;
273
```

SQL Additions

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Context Help   Snippets

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Object Info   Session

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Information

No object selected

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Limit to 1000 rows

```
273
274     #1. Select customers who have not borrowed any book from library:
275  •  select customer.custID as custID, concat (fname, ' ', lname) as name
276     from customer
277     left join transaction  on customer.custID = transaction.custID
278     where transaction.custID is null;
279
280     #2. Select book with highest page count:
281  •  SELECT  bkID, title
282     FROM book
283     WHERE pageCount = (SELECT MAX(pageCount) FROM book);
284
285     #3. Select customer who has borrowed some book for longest period:
286  •   SELECT customer.custId, concat (fname, ' ', lname) as name
```

Context Help   Snippets

Output

Action Output

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Object Info   Session

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INSTANCE

Administration Schemas

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No object selected

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Limit to 1000 rows

```sql
286    SELECT customer.custId, concat (fname, ' ', lname) as name
287    from customer
288    WHERE custId = (SELECT MAX(custId) FROM transaction);
289
290    # JOINS:
291    #1. Display list of all books along with their authors:
292    select book.bkID as bkID, book.title as title, concat (fname, ' ', lname) as author
293    from book
294    left join author on book.authorID = author.authorID;
295
296    #2. Display list of top 20 most borrowed books:
297    select book.bkID as bkID, book.title as title, count(transaction.bkID) as times_borrowed
298    from book
299    join transaction on book.bkID = transaction.bkID
```

SQL Additions

Jump to

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Context Help Snippets

Output

Action Output

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Object Info Session

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Information

No object selected

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Limit to 1000 rows

```
299     join transaction on book.bkID = transaction.bkID
300     group by book.bkID, book.title
301     order by times_borrowed desc
302     limit 20;
303
304     #3. Display list of top 10 customers who have borrowed most books:
305  •  select customer.custID, customer.fname, customer.lname, count(transaction.bkID) as book_borrowed
306     from customer
307     join transaction on customer.custID = transaction.transID
308     group by customer.custID, customer.fname, customer.lname
309     order by book_borrowed desc
310     limit 10;
311
312
```

SQLAdditions

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