

# **THE GREAT LIBRARY**

## **❖ ABSTRACT**

‘**The Great Library**’ is nothing but a group of people which require to manage the libraries of schools and colleges. Library management System is a project which aims in developing a computerized system to maintain all the daily work of Library. Library is a collection of organized information and resources which is made accessible to all user for borrow and take references from that. This project has many features which are generally not available in normal library management system. In this project there is college library management system where students can easily get to know about the book available in library, also staff and student of library get to know the books statuses also they will get to know from which publisher the book has been publish. The book status which has been borrowed by student. So from this we can easily manage our library system and also from this data will properly store and up-to-date.

## **❖ Objective and aims of project**

1. Can create a computerized system for easily management.
2. Has the capability for issue books.
3. Can manage student through main administrator account.
4. Can store all the book and students data in a proper manner.
5. Tracks the book that users have issued and returned.

## STRUCTURES OF TABLES

### 1) BOOKS

This tables contains the complete details of all the books which is available in library also from which publisher the book has been published.

```
MariaDB [library]> desc book;
```

Field	Type	Null	Key	Default	Extra
book_id	int(11)	NO	PRI	NULL	
bk_name	varchar(20)	YES		NULL	
P_ID	varchar(20)	YES	MUL	NULL	
bk_num	int(11)	YES		NULL	
stat_id	varchar(20)	YES	MUL	NULL	

### 2) STUDENTS

This tables contains all the details regarding student and their library card.

```
MariaDB [library]> desc student;
```

Field	Type	Null	Key	Default	Extra
stud_ID	int(11)	NO	PRI	NULL	
Name	varchar(20)	YES		NULL	
Gender	varchar(20)	YES		NULL	
Age	int(11)	YES		NULL	
Contact	int(11)	YES		NULL	
stud_Lcard	int(11)	YES		NULL	

6 rows in set (0.016 sec)

### 3) Publisher

This table has complete detail of the publisher from where the book has been published to library.

```
MariaDB [library]> desc publisher;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| P_id  | varchar(10)   | NO   | PRI | NULL    |       |
| P_name| varchar(35)   | YES  | UNI | NULL    |       |
| P_city| varchar(30)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.017 sec)
```

### 4) Status

From this table we get to know the statuses of the books that has been issued and returned.

```
MariaDB [library]> desc status;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stat_id    | varchar(20)   | NO   | PRI | NULL    |       |
| book_id    | int(11)       | YES  | MUL | NULL    |       |
| status_name| varchar(20)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.016 sec)
```

## 5) Borrow

This table show the complete details of the book which has been borrowed by the students (the date of borrow and return).

```
MariaDB [library]> desc borrow;
```

Field	Type	Null	Key	Default	Extra
borrowing_ID	int(11)	NO	PRI	NULL	
book_id	int(11)	YES	MUL	NULL	
stud_id	int(11)	YES	MUL	NULL	
date_borrowed	date	YES		NULL	
date_return	date	YES		NULL	

5 rows in set (0.016 sec)

## CONTENTS OF TABLES

### 1) BOOKS

```
MariaDB [library]> Select * from book;
```

book_id	bk_name	P_ID	bk_num	stat_id
101	The Name of the Wind	P03	1	S01
102	The Green Mile	P01	2	NULL
103	The Zahir	P20	3	S02
104	Never to be solved	P03	4	S20
105	Caveman in the city	P05	5	S11
106	Before The Past	P04	6	S22
107	A Pocket Style Manua	P19	7	S15
108	The Element of Style	P03	8	NULL
109	Rules for Writers	P18	9	NULL
110	Methods in Research	P06	10	S23
111	Microeconomics	P13	11	S24
112	Spiritual Ecology	P07	12	S17
113	Between Facts and No	P15	13	S16
114	College Writing	P14	14	NULL
115	The Feeling Economy	P14	15	NULL
116	Book of Longings	P18	16	NULL
117	The colour of Law	P14	17	NULL
118	Obstacle is the way	P14	18	NULL
119	Motivation Manifesto	P06	19	NULL
120	Java Structure	P12	20	S19

20 rows in set (0.000 sec)



## 2) STUDENTS

```
MariaDB [library]> select * from student;
```

stud_ID	Name	Gender	Age	Contact	stud_Lcard
1001	Joe Kefer	Male	28	98658788	105101
1002	Lourence Leong	Female	24	98857952	105102
1003	Chris Lim	Male	26	99854752	105103
1004	Alister Wong	Male	24	85846922	105104
1005	Tina Roy	Female	23	78654925	105105
1006	Scott Lim	Male	26	84756942	105106
1007	Angelina Arora	Female	25	85479624	105107
1008	Alan Tam	Male	24	78546639	105108
1009	Anna christopher	Female	25	87486254	105109
1010	Charlie Tamilan	Male	23	84756254	105110
1011	Francis Ken	Female	24	98857952	105111
1012	Tony Wong	Male	26	99896512	105112
1013	Ela Dsuza	Female	24	84692452	105113
1014	ARyan Acharya	Male	23	78652548	105114
1015	Shizu Frank	Female	26	84694258	105115
1016	Chrisa Bella	Female	25	95862458	105116
1017	Tommy Hilphier	Male	24	74663980	105117
1018	Frozen Shefu	Female	25	88625464	105118
1019	Titus lord	Male	23	85625426	105119
1020	Sonia Roberts	Female	24	78548954	105120

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

### 3) Publisher

```
MariaDB [library]> select * from publisher;
```

P_id	P_name	P_city
P01	Bantam	Hudson Street Angelina
P02	Daw books	Park Ave New York
P03	Harcourt Brace Jovan	New york
P04	Picador USA	Hudson Street Angelina
P05	Signet Books	Kingston
P06	Viking	Bouston
P07	Berkley Publishing	Bouston
P08	Arcade Publishing	Sau city
P09	Course Technology	New york
P10	Basic book	Boulder
P11	Back Bay Books	Kingston
P12	LB books	Los Angeles
P13	Penguin USA	Bouston
P14	Scribner	New york
P15	Tor books	London
P16	Jove Publication	Hudson Street Angelina
P17	The Strangerr	New York
P18	Simon	Los Angeles
P19	Ace Books	Bouston
P20	Dzane Books	Sau city

```
20 rows in set (0.003 sec)
```

#### 4) Status

```
MariaDB [library]> select * from statu
```

stat_id	book_id	status_name
S01	101	Issue
S02	103	Issue
S03	101	Returned
S04	105	Issue
S05	103	Returned
S06	101	Issue
S07	111	Issue
S08	105	Issue
S09	112	Issue
S10	103	Issue
S11	105	Returned
S12	110	Issue
S13	110	Returned
S14	112	Issue
S15	107	Issue
S16	113	Issue
S17	112	Returned
S18	101	Issue
S19	101	Returned
S20	104	Issue
S21	103	Returned
S22	106	Issue
S23	110	Returned
S24	111	Returned

24 rows in set (0.000 sec)



## 5) Borrow

```
MariaDB [library]> select * from borrow;
```

borrowing_ID	book_id	stud_id	date_borrowed	date_return
2101	102	1001	2021-01-01	2021-01-11
2102	101	1001	2021-01-01	2021-01-11
2103	104	1011	2021-05-04	2021-05-10
2104	107	1015	2021-04-10	2021-05-15
2105	103	1014	2021-05-21	2021-05-30
2106	110	1009	2021-05-21	2021-06-05
2107	101	1007	2021-07-12	2021-07-19
2108	111	1015	2021-05-21	2021-07-19
2109	113	1004	2021-05-21	2021-07-09
2110	104	1013	2021-05-16	2021-06-22
2111	105	1011	2021-05-04	2021-05-14
2112	117	1008	2021-08-10	2021-08-15
2113	118	1015	2021-08-11	2021-08-30
2114	110	1009	2021-05-21	2021-06-05
2115	101	1015	2021-09-11	2021-09-19
2116	117	1005	2021-10-01	2021-10-19
2117	118	1004	2021-10-21	2021-10-28
2118	103	1003	2021-10-16	2021-11-22
2119	118	1001	2021-11-04	2021-11-14
2120	114	1006	2021-12-10	2021-12-15
2121	119	1020	2021-12-11	2021-12-30

```
21 rows in set (0.000 sec)
```

## SUBQUERIES

- 1) Display all the Student Id who has Issues the book from college Library

```
MariaDB [library]> select stud_id from borrow where book_id in(select book_id from status where status_name in('Issue'));
+-----+
| stud_id |
+-----+
| 1001 |
| 1011 |
| 1015 |
| 1014 |
| 1009 |
| 1007 |
| 1015 |
| 1004 |
| 1013 |
| 1011 |
| 1009 |
| 1015 |
| 1003 |
+-----+
13 rows in set (0.002 sec)
```

- 2) Show the complete data of the Student who has Issue and Returned their books from the library.

```
MariaDB [library]> select * from student where stud_id in(select stud_id from borrow where book_id in(select book_id from status where status_name in('Issue','Returned')));
+-----+-----+-----+-----+-----+-----+
| stud_ID | Name          | Gender | Age | Contact | stud_Lcard |
+-----+-----+-----+-----+-----+-----+
| 1001 | Joe Kefer      | Male   | 28 | 98658788 | 105101 |
| 1003 | Chris Lim     | Male   | 26 | 99854752 | 105103 |
| 1004 | Alister Wong  | Male   | 24 | 85846922 | 105104 |
| 1007 | Angelina Arora | Female | 25 | 85479624 | 105107 |
| 1009 | Anna christopher | Female | 25 | 87486254 | 105109 |
| 1011 | Francis Ken   | Female | 24 | 98857952 | 105111 |
| 1013 | Ela Dsuza     | Female | 24 | 84692452 | 105113 |
| 1014 | ARyan Acharya | Male   | 23 | 78652548 | 105114 |
| 1015 | Shizu Frank   | Female | 26 | 84694258 | 105115 |
+-----+-----+-----+-----+-----+-----+
9 rows in set (0.001 sec)
```

3) Find out or display out the details of the publisher whose book has present in our library.

```
MariaDB [library]> select * from publisher where P_id in(select P_id from book);
```

P_id	P_name	P_city
P01	Bantam	Hudson Street Angelina
P03	Harcourt Brace Jovan	New york
P04	Picador USA	Hudson Street Angelina
P05	Signet Books	Kingston
P06	Viking	Bouston
P07	Berkley Publishing	Bouston
P12	LB books	Los Angeles
P13	Penguin USA	Bouston
P14	Scribner	New york
P15	Tor books	London
P18	Simon	Los Angeles
P19	Ace Books	Bouston
P20	Dzane Books	Sau city

13 rows in set (0.001 sec)

## VIEWS

- 1) Create a view and display out a view considering the details of those books which had never issue or taken by the student.

```
MariaDB [library]> create view Never_issuebooks as select * from book where stat_id is Null;
Query OK, 0 rows affected (0.009 sec)

MariaDB [library]> select * from Never_issuebooks;
+-----+-----+-----+-----+-----+
| book_id | bk_name          | P_ID | bk_num | stat_id |
+-----+-----+-----+-----+-----+
| 102 | The Green Mile   | P01  | 2      | NULL    |
| 108 | The Element of Style | P03  | 8      | NULL    |
| 109 | Rules for Writers | P18  | 9      | NULL    |
| 114 | College Writing  | P14  | 14     | NULL    |
| 115 | The Feeling Economy | P14  | 15     | NULL    |
| 116 | Book of Longings  | P18  | 16     | NULL    |
| 117 | The colour of Law | P14  | 17     | NULL    |
| 118 | Obstacle is the way | P14  | 18     | NULL    |
| 119 | Motivation Manifesto | P06  | 19     | NULL    |
+-----+-----+-----+-----+-----+
9 rows in set (0.004 sec)
```

- 2) Create a view for the books which has been borrowed on 2021-05-21.

```
MariaDB [library]> create view book_borrow as select * from borrow where date_borrowed=20210521;
Query OK, 0 rows affected (0.007 sec)

MariaDB [library]> select * from book_borrow;
+-----+-----+-----+-----+-----+
| borrowing_ID | book_id | stud_id | date_borrowed | date_return |
+-----+-----+-----+-----+-----+
| 2105 | 103 | 1014 | 2021-05-21 | 2021-05-30 |
| 2106 | 110 | 1009 | 2021-05-21 | 2021-06-05 |
| 2108 | 111 | 1015 | 2021-05-21 | 2021-07-19 |
| 2109 | 113 | 1004 | 2021-05-21 | 2021-07-09 |
| 2114 | 110 | 1009 | 2021-05-21 | 2021-06-05 |
+-----+-----+-----+-----+-----+
5 rows in set (0.001 sec)
```



### 3) Create a view to find out all the details of the books which has been Publish by the Publisher 'Scribner'.

```
MariaDB [library]> create view book_details as select * from book where P_ID=(Select P_id from publisher where P_name='Scribner');
Query OK, 0 rows affected (0.008 sec)

MariaDB [library]> select * from book_details;
+-----+-----+-----+-----+-----+
| book_id | bk_name          | P_ID | bk_num | stat_id |
+-----+-----+-----+-----+-----+
| 114 | College Writing  | P14  | 14    | NULL    |
| 115 | The Feeling Economy | P14  | 15    | NULL    |
| 117 | The colour of Law  | P14  | 17    | NULL    |
| 118 | Obstacle is the way | P14  | 18    | NULL    |
+-----+-----+-----+-----+-----+
4 rows in set (0.001 sec)
```

## JOINS

### 1) Display all the details of the book with their statuses which has been issued and returned from the library.

```
MariaDB [library]> select book.book_id,book.bk_name,book.P_ID,book.bk_num,book.stat_id,status.stat_id,status.status_name from book inner join status on book.stat_id=status.stat_id;
+-----+-----+-----+-----+-----+-----+-----+
| book_id | bk_name          | P_ID | bk_num | stat_id | stat_id | status_name |
+-----+-----+-----+-----+-----+-----+-----+
| 101 | The Name of the Wind | P03  | 1      | S01     | S01     | Issue       |
| 103 | The Zahir          | P20  | 3      | S02     | S02     | Issue       |
| 104 | Never to be solved  | P03  | 4      | S20     | S20     | Issue       |
| 105 | Caveman in the city | P05  | 5      | S11     | S11     | Returned    |
| 106 | Before The Past     | P04  | 6      | S22     | S22     | Issue       |
| 107 | A Pocket Style Manua | P19  | 7      | S15     | S15     | Issue       |
| 110 | Methods in Research | P06  | 10     | S23     | S23     | Returned    |
| 111 | Microeconomics      | P13  | 11     | S24     | S24     | Returned    |
| 112 | Spiritual Ecology    | P07  | 12     | S17     | S17     | Returned    |
| 113 | Between Facts and No | P15  | 13     | S16     | S16     | Issue       |
| 120 | Java Structure       | P12  | 20     | S19     | S19     | Returned    |
+-----+-----+-----+-----+-----+-----+-----+
11 rows in set (0.001 sec)
```

2) Show all the details of the borrowing table and student table and also sort the complete data ascendingly.

```
MariaDB [library]> select borrow.borrowing_ID,borrow.book_id,borrow.stud_ID,student.stud_ID,student.Name,student.gender,student.age,student.contact,s
tudent.stud_Lcard from borrow right join student on student.stud_ID=borrow.stud_ID order by borrowing_ID;
```

borrowing_ID	book_id	stud_ID	stud_ID	Name	gender	age	contact	stud_Lcard
NULL	NULL	NULL	1010	Charlie Tamilan	Male	23	84756254	105110
NULL	NULL	NULL	1019	Titus lord	Male	23	85625426	105119
NULL	NULL	NULL	1002	Lourence Leong	Female	24	98857952	105102
NULL	NULL	NULL	1012	Tony Wong	Male	26	99896512	105112
NULL	NULL	NULL	1018	Frozen Shefu	Female	25	88625464	105118
NULL	NULL	NULL	1017	Tommy Hilphier	Male	24	74663980	105117
NULL	NULL	NULL	1016	Chrisa Bella	Female	25	95862458	105116
2101	102	1001	1001	Joe Kefer	Male	28	98658788	105101
2102	101	1001	1001	Joe Kefer	Male	28	98658788	105101
2103	104	1011	1011	Francis Ken	Female	24	98857952	105111
2104	107	1015	1015	Shizu Frank	Female	26	84694258	105115
2105	103	1014	1014	ARyan Acharya	Male	23	78652548	105114
2106	110	1009	1009	Anna christopher	Female	25	87486254	105109
2107	101	1007	1007	Angelina Arora	Female	25	85479624	105107
2108	111	1015	1015	Shizu Frank	Female	26	84694258	105115
2109	113	1004	1004	Alister Wong	Male	24	85846922	105104
2110	104	1013	1013	Ela Dsuza	Female	24	84692452	105113
2111	105	1011	1011	Francis Ken	Female	24	98857952	105111
2112	117	1008	1008	Alan Tam	Male	24	78546639	105108
2113	118	1015	1015	Shizu Frank	Female	26	84694258	105115
2114	110	1009	1009	Anna christopher	Female	25	87486254	105109
2115	101	1015	1015	Shizu Frank	Female	26	84694258	105115
2116	117	1005	1005	Tina Roy	Female	23	78654925	105105
2117	118	1004	1004	Alister Wong	Male	24	85846922	105104
2118	103	1003	1003	Chris Lim	Male	26	99854752	105103
2119	118	1001	1001	Joe Kefer	Male	28	98658788	105101
2120	114	1006	1006	Scott Lim	Male	26	84756942	105106
2121	119	1020	1020	Sonia Roberts	Female	24	78548954	105120

28 rows in set (0.003 sec)

### 3) Display the details of the students with borrowing details and their statuses with respect to the stud\_ID's.

```
MariaDB [library]> select borrow.borrowing_ID,borrow.book_id,borrow.stud_id,borrow.date_borrowed,borrow.date_return,status.book_id,status.status_name
from borrow inner join status on status.book_id=borrow.book_id;
```

borrowing_ID	book_id	stud_id	date_borrowed	date_return	book_id	status_name
2102	101	1001	2021-01-01	2021-01-11	101	Issue
2102	101	1001	2021-01-01	2021-01-11	101	Returned
2102	101	1001	2021-01-01	2021-01-11	101	Issue
2102	101	1001	2021-01-01	2021-01-11	101	Issue
2102	101	1001	2021-01-01	2021-01-11	101	Returned
2103	104	1011	2021-05-04	2021-05-10	104	Issue
2104	107	1015	2021-04-10	2021-05-15	107	Issue
2105	103	1014	2021-05-21	2021-05-30	103	Issue
2105	103	1014	2021-05-21	2021-05-30	103	Returned
2105	103	1014	2021-05-21	2021-05-30	103	Issue
2105	103	1014	2021-05-21	2021-05-30	103	Returned
2106	110	1009	2021-05-21	2021-06-05	110	Issue
2106	110	1009	2021-05-21	2021-06-05	110	Returned
2106	110	1009	2021-05-21	2021-06-05	110	Returned
2107	101	1007	2021-07-12	2021-07-19	101	Issue
2107	101	1007	2021-07-12	2021-07-19	101	Returned
2107	101	1007	2021-07-12	2021-07-19	101	Issue
2107	101	1007	2021-07-12	2021-07-19	101	Issue
2107	101	1007	2021-07-12	2021-07-19	101	Returned
2108	111	1015	2021-05-21	2021-07-19	111	Issue
2108	111	1015	2021-05-21	2021-07-19	111	Returned
2109	113	1004	2021-05-21	2021-07-09	113	Issue
2110	104	1013	2021-05-16	2021-06-22	104	Issue
2111	105	1011	2021-05-04	2021-05-14	105	Issue
2111	105	1011	2021-05-04	2021-05-14	105	Issue
2111	105	1011	2021-05-04	2021-05-14	105	Returned
2114	110	1009	2021-05-21	2021-06-05	110	Issue
2114	110	1009	2021-05-21	2021-06-05	110	Returned
2114	110	1009	2021-05-21	2021-06-05	110	Returned

2115	101	1015	2021-09-11	2021-09-19	101	Issue
2115	101	1015	2021-09-11	2021-09-19	101	Returned
2115	101	1015	2021-09-11	2021-09-19	101	Issue
2115	101	1015	2021-09-11	2021-09-19	101	Issue
2115	101	1015	2021-09-11	2021-09-19	101	Returned
2118	103	1003	2021-10-16	2021-11-22	103	Issue
2118	103	1003	2021-10-16	2021-11-22	103	Returned
2118	103	1003	2021-10-16	2021-11-22	103	Issue
2118	103	1003	2021-10-16	2021-11-22	103	Returned

38 rows in set (0.001 sec)

