

1 DBMSL Assignment No 7  
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4 Batch - T3  
5

6 Output:-  
7

8 1.Records into the table Library.  
9

10 mysql> create Table Library(B\_id int,Title varchar(90),Edition  
11 varchar(30),no\_of\_copies int);  
12 Query OK, 0 rows affected (0.03 sec)

13 mysql> desc Library;

Field	Type	Null	Key	Default	Extra
B_id	int	YES		NULL	
Title	varchar(90)	YES		NULL	
Edition	varchar(30)	YES		NULL	
no_of_copies	int	YES		NULL	

4 rows in set (0.00 sec)

24 mysql> Insert into Library values(1,'Wings of Fire','2',5),(2,'Call of  
25 Forest','5',5),(3,'The Magic Trees','3',5);  
26 Query OK, 3 rows affected (0.01 sec)  
27 Records: 3 Duplicates: 0 Warnings: 0

28 mysql> select \* from Library;

B_id	Title	Edition	no_of_copies
1	Wings of Fire	2	5
2	Call of Forest	5	5
3	The Magic Trees	3	5

3 rows in set (0.00 sec)

38 2.Table library\_audit.  
39

40 mysql> create table Library\_audit(B\_id int,Title varchar(90),Edition  
41 varchar(30),no\_of\_copies int,date\_of\_mod date,Operation varchar(30),user  
42 varchar(50));  
43 Query OK, 0 rows affected (0.03 sec)

44 mysql> desc Library\_audit;

Field	Type	Null	Key	Default	Extra
B_id	int	YES		NULL	
Title	varchar(90)	YES		NULL	
Edition	varchar(30)	YES		NULL	
no_of_copies	int	YES		NULL	
date_of_mod	date	YES		NULL	
Operation	varchar(30)	YES		NULL	
user	varchar(50)	YES		NULL	

7 rows in set (0.00 sec)

57 3.Transaction Table.  
58

59 mysql> create table Transaction(Transaction\_id int,B\_id int,S\_id int,Status  
60 varchar(10),irno\_of\_copies int,ir\_date date);  
61 Query OK, 0 rows affected (0.03 sec)

62 mysql> desc Transaction;

Field	Type	Null	Key	Default	Extra
-------	------	------	-----	---------	-------

65	+-----+-----+-----+-----+-----+						
66	Transaction_id	int	YES		NULL		
67	B_id	int	YES		NULL		
68	S_id	int	YES		NULL		
69	Status	varchar(10)	YES		NULL		
70	irno_of_copies	int	YES		NULL		
71	ir_date	date	YES		NULL		
72	+-----+-----+-----+-----+-----+						

6 rows in set (0.00 sec)

```
mysql> alter table Transaction modify Transaction_id int Auto_Increment;
ERROR 1075 (42000): Incorrect table definition; there can be only one auto column
and it must be defined as a key
```

```
mysql> alter table Transaction add primary key(Transaction_id);
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> desc Transaction;
```

	Field	Type	Null	Key	Default	Extra	
83	+-----+-----+-----+-----+-----+						
84	Transaction_id	int	NO	PRI	NULL		
85	B_id	int	YES		NULL		
86	S_id	int	YES		NULL		
87	Status	varchar(10)	YES		NULL		
88	irno_of_copies	int	YES		NULL		
89	ir_date	date	YES		NULL		
90	+-----+-----+-----+-----+-----+						

6 rows in set (0.00 sec)

```
mysql> alter table Transaction modify Transaction_id int Auto_Increment;
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

#### 4.Triggers

(i)Trigger for update.

```
mysql> delimiter //
mysql> create trigger tri_update
-> Before Update
-> On Library
-> For Each Row
-> BEGIN
-> insert into Library_audit
values(old.B_id,old.Title,old.Edition,old.no_of_copies,current_date(),'Update
',Current_User());
-> END; //
```

Query OK, 0 rows affected (0.04 sec)

(ii)Trigger for delete

```
mysql> create trigger tri_delete
-> Before Delete
-> On Library
-> For Each Row
-> BEGIN
-> insert into Library_audit
values(old.B_id,old.Title,old.Edition,old.no_of_copies,current_date(),'Delete
',Current_User());
-> END; //
```

Query OK, 0 rows affected (0.01 sec)

```
mysql> delimiter ;
```

(iii)Triggers for Number of Copies.

```
mysql> delimiter //
```

```

129      mysql> create trigger tri_copies
130          -> Before Insert
131          -> On Transaction
132          -> For Each Row
133          -> Begin
134          -> Declare copies int;
135          -> select no_of_copies into copies from Library where B_id=New.B_id;
136          -> If New.Status='I' and New.irno_of_copies > copies Then set
              New.irno_of_copies=copies;
137          -> End If;
138          -> End; //
139      Query OK, 0 rows affected (0.01 sec)
140
141      mysql> Delimiter ;
142
143      (iv) Trigger for updating number of copies.
144
145      mysql> create trigger tri_update_copies
146          -> After Insert
147          -> on Transaction
148          -> For Each Row
149          -> Begin
150          -> Declare copies int;
151          -> select no_of_copies into copies from Library where B_id=New.B_id;
152          -> If New.Status='I' Then update Library set
              no_of_copies=(copies-New.irno_of_copies) where B_id=New.B_id;
153          -> Else update Library set no_of_copies=(copies+New.irno_of_copies) where
              B_id=New.B_id;
154          -> End If;
155          -> End; //
156      Query OK, 0 rows affected (0.01 sec)

```

#### 4. Issuing 3 books of Wings of Fire.

```

159
160      mysql> Insert into Transaction (B_id,S_id,Status,irno_of_copies,ir_date)
              values(1,23,'I',3,Current_Date());
161      Query OK, 1 row affected (0.03 sec)

```

```

162
163      mysql> select * from Transaction;
164      +-----+-----+-----+-----+-----+-----+
165      | Transaction_id | B_id | S_id | Status | irno_of_copies | ir_date      |
166      +-----+-----+-----+-----+-----+-----+
167      |              1 |    1 |   23 |    I   |                3 | 2023-09-22 |
168      +-----+-----+-----+-----+-----+-----+
169      1 row in set (0.00 sec)

```

```

170
171      mysql> select * from Library;
172      +-----+-----+-----+-----+
173      | B_id | Title           | Edition | no_of_copies |
174      +-----+-----+-----+-----+
175      |    1 | Wings of Fire   |    2    |             2 |
176      |    2 | Call of Forest  |    5    |             5 |
177      |    3 | The Magic Trees |    3    |             5 |
178      +-----+-----+-----+-----+
179      3 rows in set (0.00 sec)

```

```

180
181      mysql> select * from Library_audit;
182
183      +-----+-----+-----+-----+-----+-----+
184      | B_id | Title           | Edition | no_of_copies | date_of_mod | Operation |
185      user |
186      +-----+-----+-----+-----+-----+-----+
187      |    1 | Wings of Fire   |    2    |             5 | 2023-09-22 | Update    |
188      root@localhost |

```

```

187 -----+
188 1 row in set (0.00 sec)
189
190 5.Issuing 6 books of Call of Forest.
191
192 mysql> Insert into Transaction (B_id,S_id,Status,irno_of_copies,ir_date)
193 values(2,43,'I',6,Current_Date());
194 Query OK, 1 row affected (0.03 sec)
195
196 mysql> select * from Transaction;
197
198 +-----+-----+-----+-----+-----+-----+-----+
199 | Transaction_id | B_id | S_id | Status | irno_of_copies | ir_date      |
200 +-----+-----+-----+-----+-----+-----+-----+
201 |                | 1    | 1    | I      | 3              | 2023-09-22   |
202 |                | 2    | 2    | I      | 5              | 2023-09-22   |
203 +-----+-----+-----+-----+-----+-----+-----+
204 2 rows in set (0.00 sec)
205
206 mysql> select * from Library;
207
208 +-----+-----+-----+-----+
209 | B_id | Title           | Edition | no_of_copies |
210 +-----+-----+-----+-----+
211 | 1    | Wings of Fire   | 2       | 2            |
212 | 2    | Call of Forest  | 5       | 0            |
213 | 3    | The Magic Trees | 3       | 5            |
214 +-----+-----+-----+-----+
215 3 rows in set (0.00 sec)
216
217 mysql> select * from Library_audit;
218
219 +-----+-----+-----+-----+-----+-----+-----+
220 -----+
221 | B_id | Title           | Edition | no_of_copies | date_of_mod | Operation |
222 user          |
223 +-----+-----+-----+-----+-----+-----+-----+
224 -----+
225 | 1    | Wings of Fire   | 2       | 5            | 2023-09-22 | Update    |
226 root@localhost |
227 | 2    | Call of Forest  | 5       | 5            | 2023-09-22 | Update    |
228 root@localhost |
229 +-----+-----+-----+-----+-----+-----+-----+
230 -----+
231 2 rows in set (0.00 sec)
232
233 6.Returning 3 copies of Wings of Fire.
234
235 mysql> Insert into Transaction (B_id,S_id,Status,irno_of_copies,ir_date)
236 values(1,23,'R',3,'2023-09-28');
237 Query OK, 1 row affected (0.01 sec)
238
239 mysql> select * from Transaction;
240
241 +-----+-----+-----+-----+-----+-----+-----+
242 | Transaction_id | B_id | S_id | Status | irno_of_copies | ir_date      |
243 +-----+-----+-----+-----+-----+-----+-----+
244 |                | 1    | 1    | I      | 3              | 2023-09-22   |
245 |                | 2    | 2    | I      | 5              | 2023-09-22   |
246 |                | 3    | 1    | R      | 3              | 2023-09-28   |
247 +-----+-----+-----+-----+-----+-----+-----+
248 3 rows in set (0.00 sec)
249
250 mysql> select * from Library;
251
252 +-----+-----+-----+-----+
253 | B_id | Title           | Edition | no_of_copies |
254 +-----+-----+-----+-----+
255 | 1    | Wings of Fire   | 2       | 5            |
256 | 2    | Call of Forest  | 5       | 0            |
257 | 3    | The Magic Trees | 3       | 5            |

```

```

244 +-----+-----+-----+-----+
245 3 rows in set (0.00 sec)
246
247 mysql> select * from Library_audit;
248
249 +-----+-----+-----+-----+-----+-----+-----+
250 | B_id | Title          | Edition | no_of_copies | date_of_mod | Operation |
251 | user |
252 +-----+-----+-----+-----+-----+-----+-----+
253 | 1 | Wings of Fire | 2 | 5 | 2023-09-22 | Update |
254 | root@localhost |
255 | 2 | Call of Forest | 5 | 5 | 2023-09-22 | Update |
256 | root@localhost |
257 | 1 | Wings of Fire | 2 | 2 | 2023-09-22 | Update |
258 | root@localhost |
259
260 +-----+-----+-----+-----+-----+-----+-----+
261 3 rows in set (0.00 sec)
262
263 7.Returning 3 copies of Call of Forest.
264
265 mysql> Insert into Transaction (B_id,S_id,Status,irno_of_copies,ir_date)
266 values(2,43,'R',3,'2023-09-28');
267 Query OK, 1 row affected (0.01 sec)
268
269 mysql> select * from Transaction;
270
271 +-----+-----+-----+-----+-----+-----+-----+
272 | Transaction_id | B_id | S_id | Status | irno_of_copies | ir_date |
273 +-----+-----+-----+-----+-----+-----+-----+
274 | 1 | 1 | 1 | I | 3 | 2023-09-22 |
275 | 2 | 2 | 43 | I | 5 | 2023-09-22 |
276 | 3 | 1 | 23 | R | 3 | 2023-09-28 |
277 | 4 | 2 | 43 | R | 3 | 2023-09-28 |
278 +-----+-----+-----+-----+-----+-----+-----+
279 4 rows in set (0.00 sec)
280
281 mysql> select * from Library;
282
283 +-----+-----+-----+-----+
284 | B_id | Title          | Edition | no_of_copies |
285 +-----+-----+-----+-----+
286 | 1 | Wings of Fire | 2 | 5 |
287 | 2 | Call of Forest | 5 | 3 |
288 | 3 | The Magic Trees | 3 | 5 |
289 +-----+-----+-----+-----+
290 3 rows in set (0.00 sec)
291
292 mysql> select * from Library_audit;
293
294 +-----+-----+-----+-----+-----+-----+-----+
295 | B_id | Title          | Edition | no_of_copies | date_of_mod | Operation |
296 | user |
297 +-----+-----+-----+-----+-----+-----+-----+
298 | 1 | Wings of Fire | 2 | 5 | 2023-09-22 | Update |
299 | root@localhost |
300 | 2 | Call of Forest | 5 | 5 | 2023-09-22 | Update |
301 | root@localhost |
302 | 1 | Wings of Fire | 2 | 2 | 2023-09-22 | Update |
303 | root@localhost |
304 | 2 | Call of Forest | 5 | 0 | 2023-09-22 | Update |
305 | root@localhost |
306
307 +-----+-----+-----+-----+-----+-----+-----+

```

```

292         +-----+
293         4 rows in set (0.00 sec)
294 8.Deleting the book The Magic of the Trees.
295
296 mysql> Delete from Library where B_id=3;
297 Query OK, 1 row affected (0.01 sec)
298
299 mysql> select * from Library;
300 +-----+-----+-----+-----+
301 | B_id | Title           | Edition | no_of_copies |
302 +-----+-----+-----+-----+
303 |    1 | Wings of Fire   | 2       | 5             |
304 |    2 | Call of Forest  | 5       | 3             |
305 +-----+-----+-----+-----+
306 2 rows in set (0.00 sec)
307
308 mysql> select * from Library_audit;
309
310 +-----+-----+-----+-----+-----+-----+-----+
311 | B_id | Title           | Edition | no_of_copies | date_of_mod | Operation | user |
312 +-----+-----+-----+-----+-----+-----+-----+
313 |    1 | Wings of Fire   | 2       | 5             | 2023-09-22 | Update   | root@localhost |
314 |    2 | Call of Forest  | 5       | 5             | 2023-09-22 | Update   | root@localhost |
315 |    1 | Wings of Fire   | 2       | 2             | 2023-09-22 | Update   | root@localhost |
316 |    2 | Call of Forest  | 5       | 0             | 2023-09-22 | Update   | root@localhost |
317 |    3 | The Magic Trees | 3       | 5             | 2023-09-22 | Delete   | root@localhost |
318 +-----+-----+-----+-----+-----+-----+-----+
319 5 rows in set (0.00 sec)
320

```