

# 《数据库原理与设计》实验报告

年级、专业、班级	2024 级软件工程 01		姓名	
实验题目	实验 3 表的基本操作			
实验时间	2024/9/20	实验地点	DS1501	
实验成绩		实验性质	<input checked="" type="checkbox"/> 验证性 <input type="checkbox"/> 设计性 <input type="checkbox"/> 综合性	
<b>教师评价：</b> <input type="checkbox"/> 算法/实验过程正确; <input type="checkbox"/> 源程序/实验内容提交 <input type="checkbox"/> 程序结构/实验步骤合理; <input type="checkbox"/> 实验结果正确; <input type="checkbox"/> 语法、语义正确; <input type="checkbox"/> 报告规范; 其他： 评价教师签名：				
<b>一、实验目的</b> [1] 掌握表的创建方法; [2] 掌握表结构的修改方法; [3] 掌握复制表结构的方法; [4] 掌握删除表的方法。				
<b>二、实验项目内容</b> 针对数据库 Library (表结构和内容如附录) 进行下面的实验： 1. 使用图形界面工具在 library 数据库下创建读者关系 reader。 2. 使用 SQL 在 library 数据库下创建图书关系 book 和借书关系 borrow，并将 SQL 语句保存为脚本文件。 3. 使用 SQL 语句复制 reader 表结构创建数据表 readcopy，复制 book 表结构创建数据表 bookcopy。 4. 使用图形界面工具修改 bookcopy 表的结构，增加 publisher 列，数据类型：CHAR，长度：50，允许空否：NULL，修改 bauthor 列的数据类型为 VARCHAR，长度为 80。 5. 使用 SQL 向 readcopy 表增加电子信箱 email 列。列名：email，数据类型：CHAR，长度：40，允许空否：NOT NULL。 6. 使用 SQL 修改 readcopy 表中电子信箱 email 列，修改后数据类型：CHAR，长度：20，允许空否：NULL。 7. 使用 SQL 修改 readcopy 表中 email 列名为 email_1，数据类型为 CHAR (20)。 8. 使用 SQL 设置 readcopy 表中 rage 列的默认值为 0。				

报告创建时间：

9. 使用 SQL 删除 readcopy 表中电子信箱 email\_1 列。
10. 使用 SQL 修改 readcopy 表的名称为 readercopy。
11. 使用 SQL 删除数据表 readercopy。
12. 用图形界面工具删除 bookcopy 表。

### 三、实验过程或算法（源程序）

#### 2. 创建数据表

```
create table book(  
idbook int(4) not null,  
primary key (idbook));  
create table borrow(  
idname int(4) not null,  
idbook int(4),  
primary key (idbook));
```

#### 3. 复制表结构

```
create table readcopy like reader;  
create table bookcopy like book;
```

#### 5. 添加列

```
alter table readcopy  
add column email char(40) not null;
```

#### 6. 修改列

```
alter table readcopy  
change column email email char(40) null;
```

#### 7. 修改列名

```
alter table readcopy  
change column email email_1 char(20) null;
```

#### 8. 创建列并设置默认值

```
alter table readcopy  
add column rage char(20) null;  
alter table readcopy  
modify rage float default 0;
```

#### 9. 删除列

```
alter table readcopy  
drop column email_1;
```

## 10.修改表的名称

```
alter table readcopy rename to readercopy;
```

## 11.删除表

```
drop table readercopy;
```

## 四、实验结果及分析和（或）源程序调试过程

### 1.创建表

The screenshot shows the MySQL Workbench interface. On the left, the 'SCHEMAS' tree view is open, showing the 'library' schema selected. Inside 'library', there are 'Tables', 'Views', 'Stored Procedures', and 'Functions'. Under 'Tables', 'book' and 'reader' are listed. The 'reader' table is selected. The right panel displays the 'Info' tab for the 'reader' table, with the title 'Local instance MySQL80 library.reader'. The 'Table Details' section provides the following information:

Engine	InnoDB
Row format	Dynamic
Column count	1
Table rows	0
Avg row length	0
Data length	16.0 KiB
Index length	0.0 bytes
Max data length	0.0 bytes
Data free	0.0 bytes
Table size (estimate)	16.0 KiB

At the bottom of the panel, a note says: 'Information on this page may be outdated. Click [Analyze Table](#) to update it.'

### 2.创建表 (sql)

The screenshot shows the MySQL Workbench SQL editor. It contains two 'create table' statements:

```
create table book(
    idbook int(4) not null,
    primary key (idbook));
create table borrow(
    idname int(4) not null,
    idbook int(4),
    primary key (idbook));
```

### 3.复制表结构

The screenshot shows the SQL Server Management Studio interface. In the top-left, there's a query window titled "Query 1" with the following SQL code:

```
1 • create table readcopy like reader;
2 • create table bookcopy like book;
3
```

To the right of the code, a status bar says "Automatic context help disabled. Use the toolbar or F1 key to manually get help for current caret position" and "toggle automatic help". Below the code, there are tabs for "Context Help" and "Snippets".

On the left, there's an "Output" pane with a table titled "Action Output". It lists the following actions and their results:

#	Time	Action	Message	Duration / Fetched
5	20:11:58	Apply changes to reader		
6	20:12:44	Apply changes to reader	Changes applied	0.000 sec
7	20:15:16	create table book	Error Code: 4028. A table must have at least one visible column.	0.016 sec
8	20:17:06	create table book (idbook int(4) not null, primary key (idbook))	0 row(s) affected, 1 warning(s): 1681 Integer display width is deprecated a...	0.016 sec
9	20:17:50	create table book (idbook int(3) not null, primary key (idbook))	Error Code: 1050. Table 'book' already exists	0.016 sec
10	20:20:55	create table borrow (idname int(4) not null, idbook int(4), primary key (idbook))	0 row(s) affected, 2 warning(s): 1681 Integer display width is deprecated a...	0.031 sec
11	20:24:34	create table readcopy like reader	0 row(s) affected	0.016 sec
12	20:24:34	create table bookcopy like book	0 row(s) affected	0.015 sec

Below the output pane, there's a section titled "4.修改列和创建列" (Modify columns and create columns) with a table editor. The table name is set to "bookcopy" and the schema is "library". The table structure is as follows:

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
idbook	INT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
publisher	CHAR(50)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
bauthor	VARCHAR(80)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL

At the bottom, there's another section titled "5.添加列 (sql)" (Add column (SQL)).

```
1 alter table readcopy
2 add column email char(40) not null;
```

Output :

Action Output

#	Time	Action
18	20:49:47	alter table readcopy change column email email_1 char(40) not null
19	20:54:14	alter table readcopy add column rage char(20) null
20	20:54:14	alter table readcopy modify rage float default 0
21	20:58:09	alter table readcopy drop column email_1
22	21:00:53	alter table readcopy rename to readercopy
23	21:05:33	create table readcopy like readercopy
24	21:07:28	drop table readercopy
25	21:11:26	alter table readcopy add column email char(40) not null

## 6.修改列 (sql)

```
1 alter table readcopy
2 change column email email char(40) null;
```

Automatic context help disabled. Use the tool tips manually get help for current caret position toggle automatic help

Output :

Action Output

#	Time	Action	Message	Duration / Fetch
10	20:20:55	create table borrow(idname int(4) not null, idbook int(4), primary key (idbook))	0 row(s) affected, 2 warning(s): 1681 Integer display width is deprecated at column 'idname' and column 'idbook'.	0.031 sec
11	20:24:34	create table readcopy like reader	0 row(s) affected	0.016 sec
12	20:24:34	create table bookcopy like book	0 row(s) affected	0.015 sec
13	20:30:29	Apply changes to bookcopy	Changes applied	
14	20:34:07	alter table readcopy add column email char(40) null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.015 sec
15	20:36:14	alter table readcopy add column email char(40) not null	Error Code: 1060. Duplicate column name 'email'	0.000 sec
16	20:36:48	Apply changes to readcopy	Changes applied	
17	20:47:07	alter table readcopy change column email email char(40) null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec

## 7.修改列名 (sql)

```
1 • alter table readcopy  
2     change column email email_1 char(20) null;  
3
```

Automatic context he  
disabled. Use the tool  
manually get help for  
current caret position  
toggle automatic he

## Output

### Action Output

#	Time	Action	Message	Duration / Fetch
11	20:24:34	create table readcopy like reader	0 row(s) affected	0.016 sec
12	20:24:34	create table bookcopy like book	0 row(s) affected	0.015 sec
13	20:30:29	Apply changes to bookcopy	Changes applied	
14	20:34:07	altertable readcopy add column email char(40) null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.015 sec
15	20:36:14	altertable readcopy add column email char(40) not ...	Error Code: 1060. Duplicate column name 'email'	0.000 sec
16	20:36:48	Apply changes to readcopy	Changes applied	
17	20:47:07	altertable readcopy change column email email_1 ch...	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
18	20:49:47	altertable readcopy change column email email_1 ...	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.063 sec

## 8.设置默认 (sql)

Query 1 | SQL Fiddle | X | readcopy | + auto | Limit to 1000 rows | ▾ | ⌂ | Jump to

```

1 • alter table readcopy
2   add column rage float default 0;
3 • alter table readcopy
4   modify rage float default 0;
5

```

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

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓	13 20:30:29	Apply changes to bookcopy	Changes applied	
✓	14 20:34:07	alter table readcopy add column email char(40) null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.015 sec
✗	15 20:36:14	alter table readcopy add column email char(40) not null	Error Code: 1060. Duplicate column name 'email'	0.000 sec
✓	16 20:36:48	Apply changes to readcopy	Changes applied	
✓	17 20:47:07	alter table readcopy change column email email ch...	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
✓	18 20:49:47	alter table readcopy change column email email_1 char(20) null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.063 sec
✓	19 20:54:14	alter table readcopy add column rage float(0,0)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.016 sec
✓	20 20:54:14	alter table readcopy modify rage float default 0	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec

Table Name: **readcopy** Schema: **library**

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
idname	INT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL					
email_1	CHAR(20)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	'0'
rage	FLOAT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 9.删除列 (sql)

Query 1 | SQL Fiddle | X | readcopy | + auto | Limit to 1000 rows | ▾ | ⌂ | Jump to

```

1 • alter table readcopy
2   drop column email_1;

```

Output

Action Output

#	Time	Action	Message
✓	14 20:34:07	alter table readcopy add column email char(40) null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
✗	15 20:36:14	alter table readcopy add column email char(40) not null	Error Code: 1060. Duplicate column name 'email'
✓	16 20:36:48	Apply changes to readcopy	Changes applied
✓	17 20:47:07	alter table readcopy change column email email char(40) null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
✓	18 20:49:47	alter table readcopy change column email_email_1 char(20) null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
✓	19 20:54:14	alter table readcopy add column rage float(0,0)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
✓	20 20:54:14	alter table readcopy modify rage float default 0	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
✓	21 20:58:09	altertable readcopy drop column email_1	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0

## 10.修改表的名称 (sql)

Output ::::::

Action	Time	Action	Message
15	20:36:14	alter table readcopy add column email char(40) not null	Error Code: 11
16	20:36:48	Apply changes to readcopy	Changes appl
17	20:47:07	alter table readcopy change column email email char(40) null	0 row(s) affec
18	20:49:47	alter table readcopy change column email_email_1 char(20) null	0 row(s) affec
19	20:54:14	alter table readcopy add column rage char(20) null	0 row(s) affec
20	20:54:14	alter table readcopy modify rage float default 0	0 row(s) affec
21	20:58:09	alter table readcopy drop column email_email_1	0 row(s) affec
22	21:00:53	alter table readcopy rename to readercopy	0 row(s) affec

library

- Tables
  - book
  - bookcopy
  - borrow
  - reader
  - readercopy
- Views
- Stored Procedures

11.删除表 (sql)

drop table readercopy;

Autom  
disabled  
manual  
current  
togg

Context Help

Output ::::

Action Output

#	Time	Action	Message
17	20:47:07	alter table readcopy change column email email ch...	0 row(s) affected Records: 0 Duplicates: 0 W.
18	20:49:47	alter table readcopy change column email_email_1 ...	0 row(s) affected Records: 0 Duplicates: 0 W.
19	20:54:14	alter table readcopy add column rage char(20) null	0 row(s) affected Records: 0 Duplicates: 0 W.
20	20:54:14	alter table readcopy modify rage float default 0	0 row(s) affected Records: 0 Duplicates: 0 W.
21	20:58:09	alter table readcopy drop column email_1	0 row(s) affected Records: 0 Duplicates: 0 W.
22	21:00:53	alter table readcopy rename to readercopy	0 row(s) affected
23	21:05:33	create table readcopy like readercopy	0 row(s) affected
24	21:07:28	drop table readercopy	0 row(s) affected

12.删除表

- ▶ book
- ▶ bookcopy
- ▶ borrow
- ▶ readcopy
- ▶ reader
- ▶ **readercopy**

Views

Stored Procedures

Functions

library\_2

sales

sys

test1

**i Drop Table**

Please confirm permanent deletion of table `readercopy` and its data.

[→ Review SQL](#)

[→ Drop Now](#)

取消