

1、安装

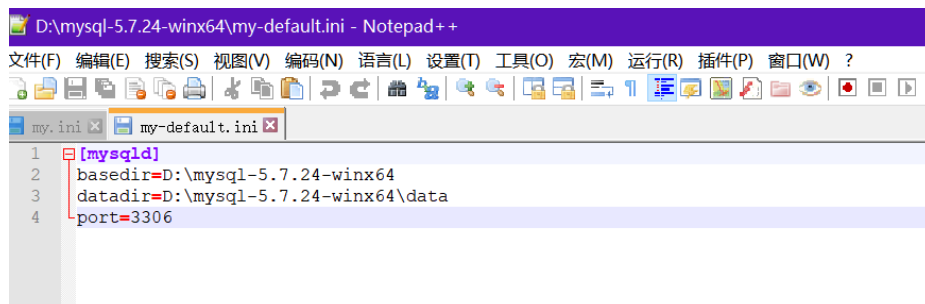
参考文档 <https://blog.csdn.net/winstonlau/article/details/78666423>

系统环境: win10 64 位, mysql 版本: 5.7.24

首先是 mysql 环境配置, 在环境变量 Path 中添加 MySQL 解压后的 bin 目录所在的路径, 比如我的是: D:\mysql-5.7.24-winx64\bin。

以管理员命令运行 cmd, 在 cmd 中输入 D:, 进入 D 盘, 输入 cd mysql-5.7.24-winx64\bin。接下来安装 mysql, 输入以下指令, mysqld -install。接着输入 mysqld --initialize, 这时在 MySQL 的根目录下会生成一个 data 文件夹, 注意里面的一个以 .err 结尾的文件, 初始密码就在这个文件里(可以按 Ctrl+F 搜索 password 找到密码), 这个初始密码后续会用到。

接下来需要配置 mysql 的启动文件, 如果解压后的 MySQL 中没有一个名为 my-default.ini 的文件, 则自己在根目录下新建一个名为 my-default.ini 的文件, 然后选中该文件, 点击鼠标右键, 选择用记事本打开, 在其中输入以下指令, 点击保存, 关闭即可。



启动 mysql, 在 cmd 中进入 bin 目录, 输入 net start mysql, 回车如图所示。

```
D:\mysql-5.7.24-winx64\bin>net start mysql
MySQL 服务正在启动 .
MySQL 服务已经启动成功。
```

登陆 mysql, 接着输入 mysql -u root -p, 回车出现密码, 这里的密码就在根文件目录下的 .err 结尾的那个文件中, 在文件中搜索 password, 输入即可, 如图显示时表示 mysql 配置成功了。

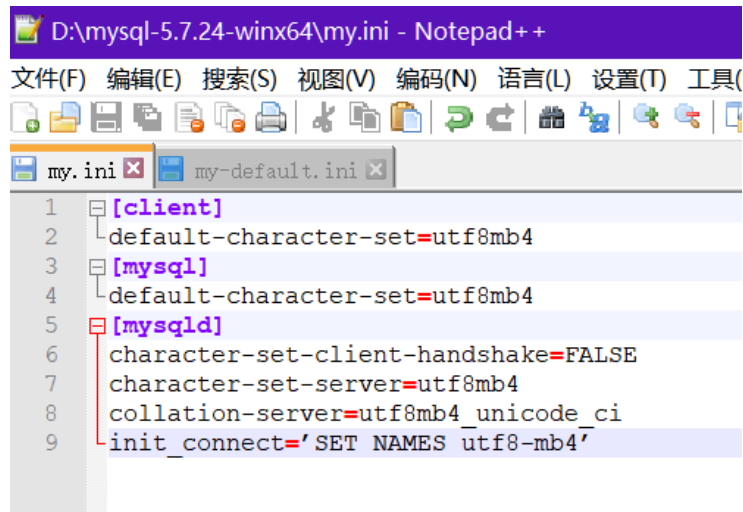
```
D:\mysql-5.7.24-winx64\bin>mysql -u root -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.24 MySQL Community Server (GPL)

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

修改字符类型位 utf8mb4, 即在配置文件 my.ini 中修改如下所示, 在配置文件中设置好以后, 重启 mysql 服务 (即输入 net stop mysql, 以及 net start mysql), 进入 mysql 命令行, 再次执行命令 show variables like '%char%';



修改后情况如下：

```
mysql> show variables like 'character%';
+-----+-----+
| Variable_name | Value |
+-----+-----+
| character_set_client | utf8mb4 |
| character_set_connection | utf8mb4 |
| character_set_database | utf8mb4 |
| character_set_filesystem | binary |
| character_set_results | utf8mb4 |
| character_set_server | utf8mb4 |
| character_set_system | utf8 |
| character_sets_dir | D:\mysql-5.7.24-winx64\share\charsets\ |
+-----+-----+
8 rows in set, 1 warning (0.00 sec)
```

2、重置 root 密码

参考网站：

https://blog.csdn.net/jacksonary/article/details/78581751?utm_source=blogxgwz5

在 cmd 中停止 mysql 服务，修改配置文件，在[mysqld]下面添加一行 skip-grant-tables，保存。重新启动 mysql 服务，要求输入密码，直接回车，即可进入。

登陆后，输入 update mysql.user set authentication_string=password('xxxx') where user='root' and Host ='localhost';命令用于设置 root 密码，其中 xxxx 为所要设置的密码。

```
D:\mysql-5.7.24-winx64\bin>mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.24 MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> update mysql.user set authentication_string=password('123456') where user='root' and Host ='localhost';
Query OK, 1 row affected, 1 warning (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 1
```

重置密码后，删除 my.ini 配置文件中的修改项，重新启动 Mysql 服务，输入重置 houd 额密码即可进入。

```

D:\mysql-5.7.24-winx64\bin>net start mysql
MySQL 服务正在启动。
MySQL 服务已经启动成功。

D:\mysql-5.7.24-winx64\bin>mysql -u root -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.24 MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```

3、新建数据库 practise

参考网站: <https://www.cnblogs.com/rimmy/p/7679076.html>

用系统命令登陆 root 账户, 使用 create database practise;命令建立 practise 数据库, 用 show databases;命令检查数据库是否建立成功;

```

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql       |
| performance_schema |
| practise    |
| sys        |
+-----+
5 rows in set (0.00 sec)

```

使用 create user 'practise'@'localhost' identified by 'practisewd';命令新建个用户名为 practise, 密码为 practisewd 的账户。

使用 grant all privileges on practise.* to 'practise'@'localhost' identified by 'practisewd';命令, 使 practise 用户拥有对数据库 practise 的所有操作权限;

4、SQL 操作

参考网站: <https://blog.csdn.net/chenriyang0306/article/details/54587034>

打开 practise 数据库后, 使用命令:

```

create table student(id int,name varchar(20),sage varchar(20),sex varchar(5));
create table course(id int,name varchar(20),teacher_id int);
create table sc(id int,course_id int,score int);
create table teacher(id int,name varchar(20));

```

建立 student、course、sc、teacher 四个数据表;

```
mysql> use practise
Database changed
mysql> show tables;
+-----+
| Tables_in_practise |
+-----+
| course              |
| sc                  |
| student             |
| teacher             |
+-----+
4 rows in set (0.00 sec)
```

向四个数据表中添加数据, 插入结果如下:

```
mysql> select * from student;
+----+-----+-----+-----+
| id  | name | sage | sex |
+----+-----+-----+-----+
| 1   | V    | 1501 | nan |
| 2   | W    | 1501 | nan |
| 3   | S    | 1501 | nv  |
| 4   | X    | 1501 | nv  |
| 5   | Y    | 1501 | nan |
+----+-----+-----+-----+
5 rows in set (0.01 sec)
```

```
mysql> select * from sc;
+----+-----+-----+
| id  | course_id | score |
+----+-----+-----+
| 1   | 1          | 95    |
| 1   | 2          | 65    |
| 2   | 1          | 90    |
| 2   | 2          | 85    |
| 3   | 1          | 100   |
| 3   | 2          | 75    |
| 4   | 1          | 80    |
| 4   | 2          | 60    |
| 5   | 1          | 65    |
| 5   | 2          | 50    |
+----+-----+-----+
10 rows in set (0.00 sec)
```

```
mysql> select * from course;
+----+-----+-----+
| id  | name | teacher_id |
+----+-----+-----+
| 1   | AA   | 3          |
| 2   | BB   | 2          |
| 3   | CC   | 1          |
+----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> select * from teacher;
+----+-----+
| id  | name |
+----+-----+
| 1   | aa   |
| 2   | bb   |
| 3   | cc   |
+----+-----+
3 rows in set (0.00 sec)
```

使用 `select id from student where (select score from sc where sc.course_id=1 and sc.id=student.id)>(select score from sc where sc.course_id=2 and sc.id=student.id);` 语句查询课程 id 为 1 的成绩比课程 id 为 2 的成绩高的所有学生的学生 id。

```
mysql> select id from student where (select score from sc where sc.course_id=1 and sc.id=student.id)>(select score from sc where sc.course_id=2 and sc.id=student.id);
```

id
1
2
3
4

5 rows in set (0.00 sec)

使用 `select id,avg(score) from sc group by id having avg(score)>60;` 语句查询平均成绩大于 60 分的同学的学生 id 和平均成绩。

```
mysql> select id,avg(score) from sc group by id having avg(score)>60;
```

id	avg(score)
1	80.0000
2	87.5000
3	87.5000
4	70.0000

4 rows in set (0.00 sec)

使用 `select id,name,count(*),sum(score) from (select a.id,b.name,a.score from sc a left join student b on b.id = a.id) as add_name group by id;` 语句查询所有同学的 id、姓名、选课数、总成绩。

但是在运行时出现问题，error 如下所示

```
mysql> select id,name,count(*),sum(score) from (select a.id,b.name,a.score from sc a left join student b on b.id = a.id) as add_name group by id;
```

ERROR 1055 (42000): Expression #2 of SELECT list is not in GROUP BY clause and contains nonaggregated column 'add_name.name' which is not functionally dependent on columns in GROUP BY clause; this is incompatible with sql_mode=only_full_group_by

解决问题参考文档：<https://blog.csdn.net/liuyunshengsir/article/details/79525031>

经过查询了解到，MySQL5.7 默认打开 ONLY_FULL_GROUP_BY 模式，因此，修改全局模式，如下图所示，去掉 ONLY_FULL_GROUP_BY 模式。

```
mysql> select @@sql_mode
```

@@sql_mode
ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION

1 row in set (0.00 sec)

```
mysql> set @@sql_mode='STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION';
```

Query OK, 0 rows affected (0.00 sec)

```
mysql> set sql_mode='STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION';
```

Query OK, 0 rows affected (0.00 sec)

采用以上方法得到数据：

```
mysql> select id,name,count(*),sum(score) from (select a.id,b.name,a.score from sc a left join student b on b.id = a.id) as add_name group by id;
```

id	name	count(*)	sum(score)
1	V	2	160
2	W	2	175
3	S	2	175
4	X	2	140
5	Y	2	115

5 rows in set (0.01 sec)

5、关于解 Mysql 的 4 种事物隔离级别

参考网站：<https://www.cnblogs.com/huanongying/p/7021555.html>

