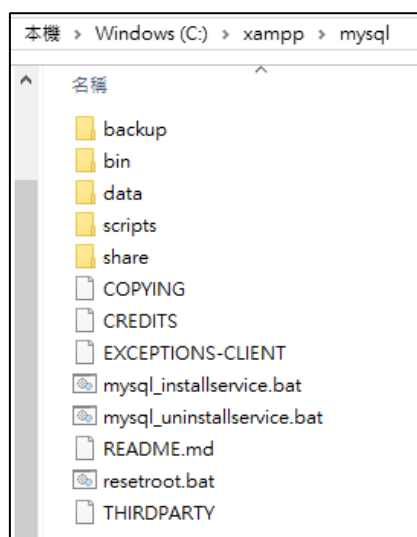


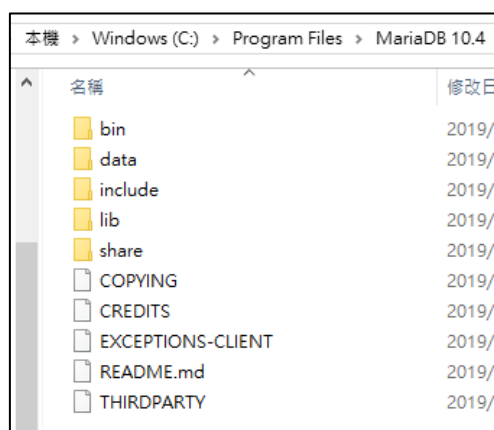
2. Quick Tour

2-1: MySQL Directory Structure

以 XAMPP 的 MySQL 資料夾為例，路徑在「C:\xampp\mysql」。



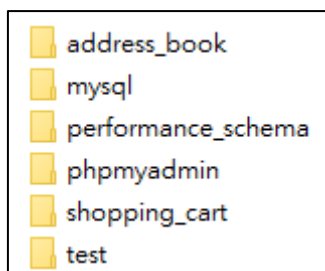
(圖) XAMPP 的 MySQL 資料夾結構



(圖) 直接官方網站下載 MariaDB 的資料夾結構

C:\xampp\mysql\data

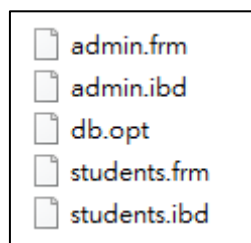
MySQL 放置「資料」的資料夾，也是日誌（log）被儲存放置的地方。在 data 中，子資料夾（mysql、performance_schema、phpmyadmin、test）也是放置資料庫（database）的地方，在放置資料庫的資料夾中，也存放著這些資料庫所擁有的資料表（tables）。



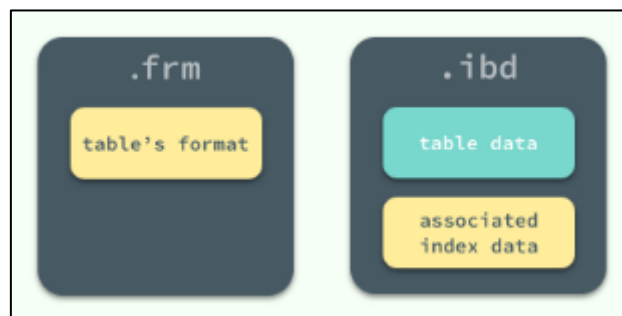
(圖) 以資料庫(database)為名的資料夾，裡面是資料表(tables)的檔案

一個新建立的資料庫，可能會有以下的檔案格式（以 InnoDB 為例）：

- frm：描述資料表的格式，或許說定義（table definition）
- ibd：放置資料表中的資料，以及關聯的索引資料
- db.opt：設定預設文字編碼和文字排序規則



(圖) address_book



(圖) .frm 和 .ibd 檔案結構

備註：ibdata1 是儲存 MySQL InnoDB 引擎的結構、資料、索引和快取

C:\xampp\mysql\data\mysql

放置主要的 mysql 資料庫資料夾，也是管理 MySQL 用的資料庫。

C:\xampp\mysql\share\charset

放置支援字元集的檔案

```

MariaDB [(none)]> use mysql;
Database changed
MariaDB [mysql]> show character set;
+-----+-----+-----+-----+
| Charset | Description | Default collation | Maxlen |
+-----+-----+-----+-----+
| big5 | Big5 Traditional Chinese | big5_chinese_ci | 2 |
| dec8 | DEC West European | dec8_swedish_ci | 1 |
| cp850 | DOS West European | cp850_general_ci | 1 |
| hp8 | HP West European | hp8_english_ci | 1 |
| koi8r | KOI8-R Relcom Russian | koi8r_general_ci | 1 |
| latin1 | cp1252 West European | latin1_swedish_ci | 1 |
| latin2 | ISO 8859-2 Central European | latin2_general_ci | 1 |
| swe7 | 7bit Swedish | swe7_swedish_ci | 1 |
| ascii | US ASCII | ascii_general_ci | 1 |
| ujis | EUC-JP Japanese | ujis_japanese_ci | 3 |
| sjis | Shift-JIS Japanese | sjis_japanese_ci | 2 |
| hebrew | ISO 8859-8 Hebrew | hebrew_general_ci | 1 |
| tis620 | TIS620 Thai | tis620_thai_ci | 1 |
| euckr | EUC-KR Korean | euckr_korean_ci | 2 |
| koi8u | KOI8-U Ukrainian | koi8u_general_ci | 1 |
| gb2312 | GB2312 Simplified Chinese | gb2312_chinese_ci | 2 |
| greek | ISO 8859-7 Greek | greek_general_ci | 1 |
| cp1250 | Windows Central European | cp1250_general_ci | 1 |
| gbk | GBK Simplified Chinese | gbk_chinese_ci | 2 |
| latin5 | ISO 8859-9 Turkish | latin5_turkish_ci | 1 |
| armSCII8 | ARMSCII-8 Armenian | armSCII8_general_ci | 1 |
| utf8 | UTF-8 Unicode | utf8_general_ci | 3 |
| ucs2 | UCS-2 Unicode | ucs2_general_ci | 2 |
| cp866 | DOS Russian | cp866_general_ci | 1 |
| keybcs2 | DOS Kamenicky Czech-Slovak | keybcs2_general_ci | 1 |
| macce | Mac Central European | macce_general_ci | 1 |
| macroman | Mac West European | macroman_general_ci | 1 |
| cp852 | DOS Central European | cp852_general_ci | 1 |
| latin7 | ISO 8859-13 Baltic | latin7_general_ci | 1 |
| utf8mb4 | UTF-8 Unicode | utf8mb4_general_ci | 4 |
| cp1251 | Windows Cyrillic | cp1251_general_ci | 1 |
| utf16 | UTF-16 Unicode | utf16_general_ci | 4 |
| utf16le | UTF-16LE Unicode | utf16le_general_ci | 4 |
| cp1256 | Windows Arabic | cp1256_general_ci | 1 |
| cp1257 | Windows Baltic | cp1257_general_ci | 1 |
| utf32 | UTF-32 Unicode | utf32_general_ci | 4 |
| binary | Binary pseudo charset | binary | 1 |
| geostd8 | GEOSTD8 Georgian | geostd8_general_ci | 1 |
| cp932 | SJIS for Windows Japanese | cp932_japanese_ci | 2 |
| eucjpms | UJIS for Windows Japanese | eucjpms_japanese_ci | 3 |
+-----+-----+-----+-----+
40 rows in set (0.007 sec)

MariaDB [mysql]> _

```

(圖) 使用 SHOW CHARACTER SET; 來看字元集列表



(圖) 從 phpMyAdmin 中一覽字元集

使用指令查詢特定字元集所支援的排序規則					
MariaDB [mysql]> SHOW COLLATION LIKE 'utf8%';					
+-----+-----+-----+-----+-----+					
Collation	Charset	Id	Default	Compiled	Sortlen
+-----+-----+-----+-----+-----+					
utf8_general_ci	utf8	33	Yes	Yes	1
utf8_bin	utf8	83		Yes	1
utf8_unicode_ci	utf8	192		Yes	8
utf8_icelandic_ci	utf8	193		Yes	8
utf8_latvian_ci	utf8	194		Yes	8
utf8_romanian_ci	utf8	195		Yes	8
utf8_slovenian_ci	utf8	196		Yes	8
utf8_polish_ci	utf8	197		Yes	8
utf8_estonian_ci	utf8	198		Yes	8
utf8_spanish_ci	utf8	199		Yes	8
utf8_swedish_ci	utf8	200		Yes	8
utf8_turkish_ci	utf8	201		Yes	8
utf8_czech_ci	utf8	202		Yes	8
utf8_danish_ci	utf8	203		Yes	8

utf8_lithuanian_ci	utf8	204	Yes		8
utf8_slovak_ci	utf8	205	Yes		8
utf8_spanish2_ci	utf8	206	Yes		8
utf8_roman_ci	utf8	207	Yes		8
utf8_persian_ci	utf8	208	Yes		8
utf8_esperanto_ci	utf8	209	Yes		8
utf8_hungarian_ci	utf8	210	Yes		8
utf8_sinhala_ci	utf8	211	Yes		8
utf8_german2_ci	utf8	212	Yes		8
utf8_croatian_mysql561_ci	utf8	213	Yes		8
utf8_unicode_520_ci	utf8	214	Yes		8
utf8_vietnamese_ci	utf8	215	Yes		8
utf8_general_mysql500_ci	utf8	223	Yes		1
utf8_croatian_ci	utf8	576	Yes		8
utf8_myanmar_ci	utf8	577	Yes		8
utf8_thai_520_w2	utf8	578	Yes		4
utf8_general_nopad_ci	utf8	1057	Yes		1
utf8_nopad_bin	utf8	1107	Yes		1
utf8_unicode_nopad_ci	utf8	1216	Yes		8
utf8_unicode_520_nopad_ci	utf8	1238	Yes		8
utf8mb4_general_ci	utf8mb4	45	Yes		1
utf8mb4_bin	utf8mb4	46	Yes		1
utf8mb4_unicode_ci	utf8mb4	224	Yes		8
utf8mb4_icealndic_ci	utf8mb4	225	Yes		8
utf8mb4_latvian_ci	utf8mb4	226	Yes		8
utf8mb4_romanian_ci	utf8mb4	227	Yes		8
utf8mb4_slovenian_ci	utf8mb4	228	Yes		8
utf8mb4_polish_ci	utf8mb4	229	Yes		8
utf8mb4_estonian_ci	utf8mb4	230	Yes		8
utf8mb4_spanish_ci	utf8mb4	231	Yes		8
utf8mb4_swedish_ci	utf8mb4	232	Yes		8
utf8mb4_turkish_ci	utf8mb4	233	Yes		8
utf8mb4_czech_ci	utf8mb4	234	Yes		8
utf8mb4_danish_ci	utf8mb4	235	Yes		8
utf8mb4_lithuanian_ci	utf8mb4	236	Yes		8
utf8mb4_slovak_ci	utf8mb4	237	Yes		8
utf8mb4_spanish2_ci	utf8mb4	238	Yes		8
utf8mb4_roman_ci	utf8mb4	239	Yes		8

utf8mb4_persian_ci	utf8mb4	240	Yes		8
utf8mb4_esperanto_ci	utf8mb4	241	Yes		8
utf8mb4_hungarian_ci	utf8mb4	242	Yes		8
utf8mb4_sinhala_ci	utf8mb4	243	Yes		8
utf8mb4_german2_ci	utf8mb4	244	Yes		8
utf8mb4_croatian_mysql561_ci	utf8mb4	245	Yes		8
utf8mb4_unicode_520_ci	utf8mb4	246	Yes		8
utf8mb4_vietnamese_ci	utf8mb4	247	Yes		8
utf8mb4_croatian_ci	utf8mb4	608	Yes		8
utf8mb4_myanmar_ci	utf8mb4	609	Yes		8
utf8mb4_thai_520_w2	utf8mb4	610	Yes		4
utf8mb4_general_nopad_ci	utf8mb4	1069	Yes		1
utf8mb4_nopad_bin	utf8mb4	1070	Yes		1
utf8mb4_unicode_nopad_ci	utf8mb4	1248	Yes		8
utf8mb4_unicode_520_nopad_ci	utf8mb4	1270	Yes		8
+-----+-----+-----+-----+-----+					
67 rows in set (0.000 sec)					

C:\xampp\mysql\share\{語系}

資料夾包含了各種語系的錯誤訊息

2-2: Overview of Executables

執行檔放置路徑為「C:\xampp\mysql\bin」我們介紹幾個常用執行檔的簡易使用範例。

mysql

登入

> mysql -u 使用者帳號 -p 要求輸入密碼

> mysql -u root -p

Enter Password:

資料庫匯入（還原資料庫）

\$ mysqladmin -u root -p create address_book

\$ mysql -u root -p address_book < address_book.sql;

mysqldump

資料庫匯出/備份

1. 備份單一資料庫:

```
$ mysqldump -u root -p DatabaseName > Backup.sql;
```

2. 僅備份特定資料庫下的資料表:

```
$ mysqldump -u root -p DatabaseName Table1 Table2... > Backup.sql;
```

3. 僅匯出資料表結構:

```
$ mysqldump -u root -p --no-data DatabaseName > Backup.sql;
```

4. 備份全部的資料庫:

```
$ mysqldump -u root -p -A > AllBackup.sql;
```

mysql/mysqldump/mysqladmin 與「登入」有關的參數說明:

-u Username

用來存取 mysql 資料表的用戶名稱。此參數可省略，若省略，則表示為目前登入 linux 的用戶名稱。

-p

於執行時詢問密碼。

資料庫匯入/還原

1. 建立資料庫，再從備份檔匯入單一資料庫:

```
$ mysqladmin -u root -p create DatabaseName;
```

```
$ mysql -u root -p DatabaseName < Backup.sql
```

2. 從備份檔匯入全部的資料庫 (不需先建立資料庫):

```
$ mysql -u root -p < AllBackup.sql;
```

2-3: Quick Introduction to the MySQL Monitor

```
C:\xampp\mysql\bin>mysql -u root -p
Enter password: *****
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 296
Server version: 10.4.8-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
MariaDB [(none)]>
```

(圖) 登入 mysql 後，出現 Welcome to the MariaDB monitor