MySQL server c++ connectivity

Instructions for Unix/Unix-like Operating systems

1.) Install libmysqlcppconn-dev

```
theorist@pop-os:~$ sudo apt install libmysqlcppconn-dev
[sudo] password for theorist:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
libmysqlcppconn-dev is already the newest version (1.1.12-4ubuntu2).
0 to upgrade, 0 to newly install, 0 to remove and 12 not to upgrade.
```

2.) Stop any running MySQL servers that may have been installed:

```
theorist@pop-os:~$ sudo systemctl stop mysql
theorist@pop-os:~$ sudo systemctl status mysql.service
o mysql.service - MySQL Community Server
     Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
     Active: inactive (dead) since Tue 2023-08-29 19:31:12 IST; 52min ago
    Process: 1224 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
    Process: 1317 ExecStart=/usr/sbin/mysqld (code=exited, status=0/SUCCESS)
   Main PID: 1317 (code=exited, status=0/SUCCESS)
     Status: "Server shutdown complete"
        CPU: 1.089s

Aug 29 19:29:58 pop-os systemd[1]: Starting MySQL Community Server...
Aug 29 19:29:58 pop-os systemd[1]: Started MySQL Community Server.
Aug 29 19:31:10 pop-os systemd[1]: Stopping MySQL Community Server...
Aug 29 19:31:12 pop-os systemd[1]: mysql.service: Deactivated successfully.
Aug 29 19:31:12 pop-os systemd[1]: Stopped MySQL Community Server.
Aug 29 19:31:12 pop-os systemd[1]: mysql.service: Consumed 1.089s CPU time.
theorist@pop-os:~$ 
```

3.) Start Xampp MySQL and Apache Server:

```
theorist@pop-os:~$ sudo /opt/lampp/lampp start
Starting XAMPP for Linux 8.2.4-0...
XAMPP: Starting Apache...already running.
XAMPP: Starting MySQL...already running.
```

4.) Follow [Connector/C++: Usage Examples](): (A c++ script to display and insert into Sailor table):

```
#include <stdlib.h>
#include <iostream>

/*
  Include directly the different
  headers from cppconn/ and mysql_driver.h + mysql_util.h
  (and mysql_connection.h). This will reduce your build time!
*/
#include "mysql_connection.h"

#include <cppconn/driver.h>
#include <cppconn/exception.h>
#include <cppconn/resultset.h>
#include <cppconn/statement.h>
#include <cppconn/prepared_statement.h>

#define DATABASE "Sailor-reserves-boats"
#define HOST "localhost"
#define USER "root"
#define KEY ""

using namespace std;

int main(void)
{
   cout << endl;
   cout << "Running 'SELECT 'Hello World!' AS _message'..." << endl;

   try
   {
      sql::Driver *driver;
      sql::Connection *con;
      sql::Statement *stmt;
      sql::PreparedStatement *prep_stmt;
      sql::ResultSet *res;

      /* Create a connection */
      driver = get_driver_instance();
      con = driver->connect(HOST, USER, KEY);

      /* Connect to the MySQL test database */
      con->setSchema(DATABASE);

      stmt = con->createStatement();
      res = stmt->executeQuery("select * from Sailor");
      while (res->next())
      {
         /* Access column data by alias or column name */
         cout << res->getString(1) << "\t";
         cout << res->getString(2) << "\t";
         cout << res->getString(3) << "\t";
         cout << res->getString(4) << "\t";
         cout << endl;
      }
```

```cpp
    prep_stmt = con->prepareStatement(
        "INSERT INTO Sailor (SID, SNAME, RATING, DOB) VALUES (?, ?, ?, ?)"
    );

    prep_stmt->setInt(1, 4);
    prep_stmt->setString(2, "MAYANK");
    prep_stmt->setInt(3, 10);
    prep_stmt->setDateTime(4, "2003-10-21");

    prep_stmt->execute();

    delete res;
    delete prep_stmt;
    delete stmt;
    delete con;
  }
  catch (sql::SQLException &e)
  {
    cout << "# ERR: SQLException in " << __FILE__;
    cout << "(" << __FUNCTION__ << ") on line " << __LINE__ << endl;
    cout << "# ERR: " << e.what();
    cout << " (MySQL error code: " << e.getErrorCode();
    cout << ", SQLState: " << e.getSQLState() << " )" << endl;
  }

  cout << endl;

  return EXIT_SUCCESS;
}
```

5.) Compile and link cppconn:

```
$ build.sh
  1    #!/usr/bin/sh
  2
  3    set -xe
  4
  5    g++ -Wall -I/usr/include/cppconn -o conn conn.cpp -L/usr/lib -lmysqlcppconn
  6    ./conn
```

```
● theorist@pop-os:~/Desktop/Programming/C/cpp_mysql$ ./build.sh
+ g++ -Wall -I/usr/include/cppconn -o conn conn.cpp -L/usr/lib -lmysqlcppconn
+ ./conn

Running 'SELECT 'Hello World!' AS _message'...
1       Lorem   7       1993-08-26
2       Ipsum   8       1993-08-26
3       Dolor   9       1995-08-26
4       MAYANK  10      2003-10-21
```

6.) Source Code: https://github.com/Theorist-Git/cpp_mysql_con