# Database Programming in C

# Client Server Programming in C

# MySQL C API by Example

by
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## Preface

I see that lots of c/c++ authors are looking for MySQL API examples
in c/c++. So I thought to make MySQL C API
examples in this web site. And in near future I will publish this as
book with a full web system
as bonus

as bonus.

Since my return to my country Bangladesh, I've got so much time to
myself and thought to contribute
to the GNU applications that I use most ( ie, MySQL,FreeBSD,CGICC,GCC),
while my country and government
catches up with me. (phhhhooooooooo)

Prior to this I have contributed the mysql_last_value(),
released http://www.DhakaStockExchangeGame.com
http://www.NYSEGame.com and now going to release this.

-Jahan Saturday, September
25, 2004 03:28:23 PM

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http://www.geocities.com/jahan.geo/
- mysql_last_value() available here.
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## Pre-requisite

You should know how to use C/C++, and what is MySQL.

## Basic Structure of C/C++ Programs that uses MySQL C/C++ API

1. All programs must include <mysql/mysql.h> as the last
   include.
2. Define MYSQL type variable. NOTE: THERE CAN BE ONLY ONE
   MYSQL VARIABLE. (Sounds like highlander.)
3. Initialize MYSQL type variable with mysql_init()
4. Load any options, if required, by using mysql_options(). If you
   don't need don't call.
   You can call this fuction multiple times if you require. If you call
   this, call this before
   mysql_real_connect() and after mysql_init().
5. Connect by calling mysql_real_connect()
6. Call the business logic and MySQL API's
7. Close the MYSQL type variable.

### An infra structure

```
#include <mysql/mysql.h>

return_type function_name(parameters)

{

   MYSQL mysql;

   mysql_init(&mysql);

   mysql_options(&mysql,MYSQL_OPT_COMPRESS,0);/*call only if
required otherwise omit*/

mysql_options(&mysql,MYSQL_READ_DEFAULT_GROUP,"jahans_Dhaka_Stock_Exchange_Game");/*call
only if required otherwise omit*/

   mysql_real_connect(....);

   /* now call other API's*/

   mysql_close(&mysql);

}
```

## Compiling and Running

- **Compiling and Running in UNIX**

```
   $gcc mysql_app.c -o mysql_app -I/usr/local/include
-L/usr/local/lib/mysql -lmysqlclient

   $./mysql_app
```

- **Compiling and Running in Visual C++**

```
    -not yet added, will be added
later.
```

## Initialization Examples

### Initializing MySQL API

```
/*------InitMySQLv1.c--------*/

/*Variation #1*/

/*
Calls:
MYSQL *mysql_init(MYSQL *mysql)
char *mysql_get_server_info(MYSQL *mysql)
void mysql_close(MYSQL *mysql)
*/



#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql/mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{
```

```
  MYSQL mysql;/* variation #1*/

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");

  if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

  /*now you can call any MySQL API function you like*/



   mysql_close(&mysql);

  }

/*------InitMySQLv2.c--------*/

/*Variation #2*/

/*
Calls:
MYSQL *mysql_init(MYSQL *mysql)
char *mysql_get_server_info(MYSQL *mysql)
void mysql_close(MYSQL *mysql)

*/



#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql/mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

  MYSQL *mysql=NULL;/* variation #2*/

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");

  if((mysql=mysql_init(mysql))==NULL)/* variation #2*/
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

  /*now you can call any MySQL API function you like*/



   mysql_close(mysql);

}
```

**Checking Client Library Version**

```
/*------ClientVersion.c--------*/

/**/

/*
Calls:
MYSQL *mysql_init(MYSQL *mysql)
char *mysql_get_client_info(void)
void mysql_close(MYSQL *mysql)
*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql/mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

   /*Notice: it does not require MYSQL initialization*/

   printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
   printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");
   printf("MySQL Client Version is
%s\n",mysql_get_client_info());

}
```

**Checking Server Version**

```
/*------ServerVersion.c--------*/

Calls:
MYSQL *mysql_init(MYSQL *mysql)
char *mysql_get_server_info(void)
void mysql_close(MYSQL *mysql)

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql/mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

  MYSQL mysql;
```

```
  MYSQL mysql;

  mysql_init(&mysql);

mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd","DBDSE",0,NULL,0))

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");
  printf("MySQL Server Version is
%s\n",mysql_get_server_info(&mysql));

}
```

**Logging into MySQL Server**

```
/*------DBLogonv1.c--------*/

/*Variation #1*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
void mysql_close(MYSQL *mysql)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

  MYSQL mysql;

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");

  if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

  /*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd","DBDSE",0,NULL,0))

/*variation #1*/

       {

          printf( "Failed to connect to MySQL: Error: %s\n",
     mysql_error(&mysql));

          exit(1);

        }

     printf("Logged on to database sucessfully");

     mysql_close(&mysql);

  }

/*------DBLogonv2.c--------*/

/*Variation #2 without database
parameter*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

  MYSQL mysql;

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");

  if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

  /*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL/*variation
#2*/,0,NULL,0))
{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}

if(mysql_select_db(&mysql,"DhakaStockExchangeGame"
/*const char *db*/)==0)/*success*/
```

```
/* const char* db */)==0)/* success */
    printf( "Database Selected\n");
else
    printf( "Failed to connect to Database: Error: %s\n",
mysql_error(&mysql));

mysql_close(&mysql);



}
```

### Changing Logged user

```
/*------ChangeUser.c--------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
void mysql_close(MYSQL *mysql)
my_bool mysql_change_user(MYSQL *mysql, const char *user, const char
*password, const char *db)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

  MYSQL mysql;

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");

  if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

  /*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd","DBDSE",0,NULL,0))


       {

          printf( "Failed to connect to MySQL: Error: %s\n",
     mysql_error(&mysql));

          exit(1);

        }

     printf("Logged on to database sucessfully as jahan.\n going
     to change login to web_user.");

     if( mysql_change_user(&mysql, "web_user",
     "nopassword", "DBDSE")==0)/*warning it initiates
     rollback*/
         printf("User changed\n);
     else
         printf("Error occuered:%s",mysql_error(&mysql));

     mysql_close(&mysql);

  }
```

### Selecting a Database

```
/*-------SelectDB.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

  MYSQL mysql;

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");

  if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

  /*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL/*variation
#2*/,0,NULL,0))
{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}
```

```
if(mysql_select_db(&mysql,"DhakaStockExchangeGame"
/*const char *db*/)==0)/*success*/
    printf( "Database Selected\n");
else
    printf( "Failed to connect to Database: Error: %s\n",
mysql_error(&mysql));

mysql_close(&mysql);


}
```

## Data Definition Examples

### Creating a Database

```
/*-------CreateDB.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_create_db(MYSQL *mysql, const char *db)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

  MYSQL mysql;

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");

  if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

  /*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL,0,NULL,0))

{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}

if(mysql_create_db(&mysql,
"DhakaStockExchangeGame" )==0)/*success*/
    printf( "Database Created\n");
else
    printf( "Failed to create new database.  Error: %s\n",
mysql_error(&mysql));

mysql_close(&mysql);

}
```

### Deleting Database

```
/*-------DeleteDB.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_drop_db(MYSQL *mysql, const char *db)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

int main(int argc, char **argv)
{

  MYSQL mysql;

  printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
  printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n");

  if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

  /*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL,0,NULL,0))

{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}
```

```
if(mysql_drop_db(&mysql,
"DhakaStockExchangeGame" )==0)/*success*/
    printf( "Database Deleted\n");
else
    printf( "Failed to delete database.  Error: %s\n",
mysql_error(&mysql));

mysql_close(&mysql);

}
```

**Creating Tables**

```
/*-------CreateTable.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)
int mysql_real_query(MYSQL *mysql, const char *query, unsigned long
length)
char *strmov(register char *dst, register const char *src)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include <string.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

/*helper fuction */

int mysql_exec_sql(MYSQL *mysql,const char *create_definition)
{
   return
mysql_real_query(mysql,create_definition,strlen(create_definition));
}

int main(int argc, char **argv)
{

  MYSQL mysql;

char create_definition[1000];

printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n\t\tsupport:jahan@bol-online.com\n");

if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

/*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL,0,NULL,0))

{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}

if(mysql_select_db(&mysql,"DhakaStockExchangeGame"
/*const char *db*/)==0)/*success*/
    printf( "Database Selected\n");
else
    printf( "Failed to connect to Database: Error: %s\n",
mysql_error(&mysql));

strmov(create_definition,"CREATE TABLE Users(");
strmov(create_definition,"UserID BIGINT UNSIGNED NOT NULL");
strmov(create_definition,",");
strmov(create_definition,"UserName CHAR [50] NOT NULL");
strmov(create_definition,")");

if(mysql_exec_sql(&mysql,create_definition
)==0)/*success*/
    printf( "Table Created\n");
else
    printf( "Failed to create table: Error: %s\n",
mysql_error(&mysql));



mysql_close(&mysql);



}
```

**Editing Tables**

```
/*-------EditTable.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)
int mysql_real_query(MYSQL *mysql, const char *query, unsigned long
length)
char *strmov(register char *dst, register const char *src)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include <string.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif
```

```
/*helper fuction */

int mysql_exec_sql(MYSQL *mysql,const char *create_definition)
{
   return
mysql_real_query(mysql,create_definition,strlen(create_definition));
}

int main(int argc, char **argv)
{

  MYSQL mysql;

char edit_definition[1000];

printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n\t\tsupport:jahan@bol-online.com\n");

if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

/*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL,0,NULL,0))

{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}

if(mysql_select_db(&mysql,"DhakaStockExchangeGame"
/*const char *db*/)==0)/*success*/
    printf( "Database Selected\n");
else
    printf( "Failed to connect to Database: Error: %s\n",
mysql_error(&mysql));

strmov(edit_definition,"Alter TABLE Users ");
strmov(edit_definition,"MODIFY UserID BIGINT UNSIGNED NOT NULL AUTO
INCREMENT");

if(mysql_exec_sql(&mysql,edit_definition)==0)/*success*/
    printf( "Table Created\n");
else
    printf( "Failed to connect to edit table: Error: %s\n",
mysql_error(&mysql));



mysql_close(&mysql);



}
```

**Deleting Tables**

```
/*-------DeleteTable.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)
int mysql_real_query(MYSQL *mysql, const char *query, unsigned long
length)
char *strmov(register char *dst, register const char *src)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include <string.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

/*helper fuction */

int mysql_exec_sql(MYSQL *mysql,const char *create_definition)
{
   return
mysql_real_query(mysql,create_definition,strlen(create_definition));
}

int main(int argc, char **argv)
{

  MYSQL mysql;

char delete_definition[1000];

printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n\t\tsupport:jahan@bol-online.com\n");

if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

/*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL,0,NULL,0))

{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}

if(mysql_select_db(&mysql,"DhakaStockExchangeGame"
/*const char *db*/)==0)/*success*/
    printf( "Database Selected\n");
else
    printf( "Failed to connect to Database: Error: %s\n",
mysql_error(&mysql));

strmov(delete_definition,"DROP TABLE Users ");

if(mysql_exec_sql(&mysql,delete_definition)==0)/*success*/
```

```
if(mysql_exec_sql(&mysql,delete_definition)==0)/*success*/
    printf( "Table Deleted\n");
else
    printf( "Failed to delete table: Error: %s\n",
mysql_error(&mysql));


mysql_close(&mysql);


}
```

**Creating Index**

```
/*-------CreateIndex.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)
int mysql_real_query(MYSQL *mysql, const char *query, unsigned long
length)
char *strmov(register char *dst, register const char *src)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include <string.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

/*helper fuction */

int mysql_exec_sql(MYSQL *mysql,const char *create_definition)
{
   return
mysql_real_query(mysql,create_definition,strlen(create_definition));
}

int main(int argc, char **argv)
{

  MYSQL mysql;

char create_definition[1000];

printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n\t\tsupport:jahan@bol-online.com\n");

if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

/*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL,0,NULL,0))

{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}

if(mysql_select_db(&mysql,"DhakaStockExchangeGame"
/*const char *db*/)==0)/*success*/
    printf( "Database Selected\n");
else
    printf( "Failed to connect to Database: Error: %s\n",
mysql_error(&mysql));

strmov(create_definition,"CREATE INDEX UserNames ON Users(
UserName )");

if(mysql_exec_sql(&mysql,create_definition
)==0)/*success*/
    printf( "Index created\n");
else
    printf( "Failed to create index: Error: %s\n",
mysql_error(&mysql));


mysql_close(&mysql);


}
```

**Deleting Index**

```
/*-------DeleteIndex.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)
int mysql_real_query(MYSQL *mysql, const char *query, unsigned long
length)
char *strmov(register char *dst, register const char *src)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include <string.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif
```

```
/*helper fuction */

int mysql_exec_sql(MYSQL *mysql,const char *create_definition)
{
   return
mysql_real_query(mysql,create_definition,strlen(create_definition));
}

int main(int argc, char **argv)
{

  MYSQL mysql;

char delete_definition[1000];

printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n\t\tsupport:jahan@bol-online.com\n");

if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

/*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"subedartech.sytes.net","jahan","shoja_passwd",NULL,0,NULL,0))

{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}

if(mysql_select_db(&mysql,"DhakaStockExchangeGame"
/*const char *db*/)==0)/*success*/
    printf( "Database Selected\n");
else
    printf( "Failed to connect to Database: Error: %s\n",
mysql_error(&mysql));

strmov(delete_definition,"DROP INDEX UserNames ON
Users");

if(mysql_exec_sql(&mysql,delete_definition)==0)/*success*/
    printf( "Index deleted\n");
else
    printf( "Failed to delete index: Error: %s\n",
mysql_error(&mysql));



mysql_close(&mysql);


}
```

## Data Manipulation Examples

### Adding records to table

```
/*-------AddRecords.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)
int mysql_real_query(MYSQL *mysql, const char *query, unsigned long
length)
char *strmov(register char *dst, register const char *src)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include <string.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

/*helper fuction */

int mysql_exec_sql(MYSQL *mysql,const char *create_definition)
{
   return
mysql_real_query(mysql,create_definition,strlen(create_definition));
}

int main(int argc, char **argv)
{

  MYSQL mysql;

char record[1000];

printf("\n\n\tCopyright Aftab Jahan
Subedar\n\t\thttp://www.geocities.com/jahan.geo");
printf("\n\t\tjahan@geocities.com
\n\t\tPhone:+88027519050\n\t\tsupport:jahan@bol-online.com\n");

if(mysql_init(&mysql)==NULL)
 {
  printf("\nFailed to initate MySQL
connection");
  exit(1);
 }

/*now you can call any MySQL API function you like*/

if
(!mysql_real_connect(&mysql,"mysql.DhakaStockExchangeGame.com","jahan","shoja_passwd",NULL,0,NULL,0))

{
    printf( "Failed to connect to MySQL: Error: %s\n",
mysql_error(&mysql));
    exit(1);
}

if(mysql_select_db(&mysql,"DhakaStockExchangeGame"
)==0)/*success*/
    printf( "Database Selected\n");
else
    printf( "Failed to connect to Database: Error: %s\n",
```

```
mysql_error(&mysql));

strmov(record,"INSERT INTO Users VALUES(8,'Jahan')");

if(mysql_exec_sql(&mysql,record)==0)/*success*/
    printf( "Record Added\n");
else
    printf( "Failed to add records: Error: %s\n",
mysql_error(&mysql));



mysql_close(&mysql);



}
```

**finding records from table**

```
/*-------FindRecordsStatic.c---------*/

/*
MYSQL *mysql_init(MYSQL *mysql)
MYSQL *mysql_real_connect(MYSQL *mysql, const char *host, const char
*user, const char *passwd, const char *db,
 unsigned int port, const char *unix_socket, unsigned int client_flag)
char *mysql_error(MYSQL *mysql)
int mysql_select_db(MYSQL *mysql, const char *db)
int mysql_real_query(MYSQL *mysql, const char *query, unsigned long
length)
char *strmov(register char *dst, register const char *src)

*/

#ifdef WIN32
  #include <windows.h>
  #include <winsock.h>
  #pragma warning (disable: 4514 4786)
  #pragma warning( push, 3 )
#endif

#include <stdio.h>
#include <string.h>
#include "mysql.h"
#ifndef WIN32
  #include <unistd.h>
#endif

/*helper fuction */

int mysql_exec_sql(MYSQL *mysql,const char *create_definition)
{
   return
mysql_real_query(mysql,create_definition,strlen(create_definition));
}

int main(int argc, char **argv)
{

     MYSQL mysql;
     MYSQL_RES *result;
     MYSQL_ROW row;

     unsigned int num_fields;
     unsigned int i;
     char query_def[1000];

     printf("\n\n\tCopyright Aftab Jahan
     Subedar\n\t\thttp://www.geocities.com/jahan.geo");
     printf("\n\t\tjahan@geocities.com
     \n\t\tPhone:+88027519050\n\t\tsupport:jahan@bol-online.com\n");

     if(mysql_init(&mysql)==NULL)
     {
       printf("\nFailed to initate MySQL connection");
       exit(1);
     }

     /*now you can call any MySQL API function you like*/

     if
     (!mysql_real_connect(&mysql,"mysql.DhakaStockExchangeGame.com","jahan","shoja_passwd",NULL,0,NULL,0))

     {
         printf( "Failed to connect to DhakaStockExchangeGame.com:
     Error: %s\n", mysql_error(&mysql));
         exit(1);
     }

     if(mysql_select_db(&mysql,"DhakaStockExchangeGame")==0)/*success*/
         printf( "Database DhakaStockExchangeGame
     Selected\n");
     else
         printf( "Failed to connect to Database DhakaStockExchangeGame:
     Error: %s\n", mysql_error(&mysql));

     strmov(query_def,"SELECT Name,EMail FROM Registration WHERE
     MembershipType='TasteMODE'");

     if(mysql_exec_sql(&mysql,record)==0)/*success*/
     {
         printf( "%ld Record Found\n",(long)
     mysql_affected_rows(&mysql));
         result = mysql_store_result(&mysql);
         if (result)  // there are rows
         {
             num_fields = mysql_num_fields(result);
             while ((row = mysql_fetch_row(result)))
             {
                for(i = 0; i < num_fields; i++)
                {
                  printf("[%.*s] ", (int) lengths[i], row[i] ?
     row[i] : "NULL");
                }
                printf("\n");
              }
             mysql_free_result(result)
          }
          else  // mysql_store_result() returned nothing
          {
             if(mysql_field_count(&mysql) > 0)
             // mysql_store_result() should have returned data
             {
                 printf( "Error getting records: %s\n",
     mysql_error(&mysql));
             }
         }
     }
     else
     {
         printf( "Failed to find any records and caused an error:
     %s\n", mysql_error(&mysql));
     }

     mysql_close(&mysql);



}
```

## CGI Examples

### JPEG OUTPUT FROM JPEG FIELD

```
/**************************************************************************
 g++ -o /usr/local/www/cgi-bin/jpeg_mysql.cgi  jpeg_mysql_cgi_test.c
-I/usr/local/include -L/usr/local/lib/mysql -lc -lmysqlclient
 **************************************************************************
 */
#include <stdio.h>
/*#include <sys/types.h>
#include <sys/stat.h> fstat
#include <sys/uio.h>
#include <string.h>*/
#include <unistd.h>
#include <fcntl.h>
#include <stdlib.h>/*get env*/
#include <mysql/mysql.h>
#include <syslog.h>/*syslog*/
#include <stdarg.h>

#define HTTP_STR "HTTP/1.1 200 OK\n"
#define HTTP_SERVER  "Server: Subedar Technologies\n"
#define HTTP_CONTENT "Content-type: image/jpeg\n\n"

int main(int argc, char *argv[])
{
 char *query="SELECT JPEG FROM Snaps ORDER BY ID DESC LIMIT
1";

    MYSQL mysql;
 mysql_init(&mysql);

 if(!mysql_real_connect
(&mysql,"","your_login_name","your_mysql_password","your_database",0,NULL,0))
 {

syslog(LOG_CONS,"%s->%s","MySQL Connect
Error:",mysql_error(&mysql));
    mysql_close(&mysql);
    exit(0);
 }

 if(mysql_query(&mysql,query))
 {

syslog(LOG_CONS,"%s->%s","MySQL Query
Eorror:",mysql_error(&mysql));
    mysql_close(&mysql);
    exit(0);
 }
 MYSQL_RES *result;
 result = mysql_use_result(&mysql);

 if (result)  // there are rows
 {
  /* retrieve rows, then call mysql_free_result(result)*/
  MYSQL_ROW row;
  if((row = mysql_fetch_row(result)))
  {
   unsigned long *lengths =
mysql_fetch_lengths(result);
   if(lengths[0] > 0)
   {
    write(STDOUT_FILENO, HTTP_CONTENT,
strlen(HTTP_CONTENT));
    write(STDOUT_FILENO,row[0],lengths[0]);

   }
  }
  mysql_free_result(result);
 }

 mysql_close(&mysql);
 exit(0);
}
```

## Utility Functions Examples

### Using my_ulonglong in printf

```
mysql_query(&mysql,"UPDATE Registration SET
ValidUntil='11-20-2003' WHERE MembershipType='TasteMODE'");
printf("Number Users Promoted:%ld ",(long)
mysql_affected_rows(&mysql));
```

Changes

1.2 Added CGI Topic

1.2.1 Corrected internal links Sept 25 2004

Contrubutions & comments

Would you like to contribute MySQL C API Examples ? Feel free to send it to me.