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SQLite Database in iOS sample code

#import <sqlite3.h>

Key SQLite Functions

When implementing a database using SQLite it will be necessary to utilize a number of C functions contained within the libsqlite3.dylib library. A summary of the most commonly used functions is as follows:

- **sqlite3_open()** - Opens specified database file. If the database file does not already exist, it is created.
- **sqlite3_close()** – Closes a previously opened database file.
- **sqlite3_prepare_v2()** – Prepares a SQL statement ready for execution.
- **sqlite3_step()** – Executes a SQL statement previously prepared by the sqlite3_prepare_v2() function.
- **sqlite3_column_<type>()** – Returns a data field from the results of a SQL retrieval operation where <type> is replaced by the data type of the data to be extracted (text, blob, bytes, int, int16 etc).
- **sqlite3_finalize()** - Deletes a previously prepared SQL statement from memory.
- **sqlite3_exec()** – Combines the functionality of sqlite3_prepare_v2(), sqlite3_step() and sqlite3_finalize() into a single function call.

This, of course, represents only a small subset of the complete range of functions available with SQLite. A full list can be found at http://www.sqlite.org/c3ref/funclist.html [http://www.sqlite.org/c3ref/funclist.html] .

```
 ********************************
-(BOOL)checkDB {

    NSArray *searchPaths =
    NSSearchPathForDirectoriesInDomains
    (NSDocumentDirectory, NSUserDomainMask, YES);

    dbfilepath=[[NSString alloc]init];
    NSString *documentFolderPath = [searchPaths objectAtIndex: 0];
    self.dbfilepath = [documentFolderPath stringByAppendingPathComponent:
                       @"lpsen.db"];
    NSLog(@"DBfilepath= %@",dbfilepath);
    if (! [[NSFileManager defaultManager] fileExistsAtPath: dbfilepath]) { // didn't find db, need to copy
        NSString *backupDbPath = [[NSBundle mainBundle]
                                  pathForResource:@"lpsen"
                                  ofType:@"db"];
        if (backupDbPath == nil) {
            // couldn't find backup db to copy, bail
            return NO;
        }
        else {
            BOOL copiedBackupDb = [[NSFileManager defaultManager]
                                   copyItemAtPath:backupDbPath
                                   toPath:dbfilepath
                                   error:nil];
            if (! copiedBackupDb) {
                // copying backup db failed, bail return NO;
            } }
    }
    return YES;

}
*****************************
SELECT
*****************************
-(NSString *)selectFromDatabase:(NSString *)username:(NSString *)password
{
    NSString *userId;
    if ([self checkDB] == YES )
    {


    sqlite3 *database;


    // Open the database from the users filessytem
    if(sqlite3_open([dbfilepath UTF8String], &database) == SQLITE_OK)
    {
        // Setup the SQL Statement and compile it for faster access
        //const char *sqlStatement = "select * from Favourites";
       // NSString * mdpassword=[password MD5];
        NSString *statement =[NSString stringWithFormat:@"select * from lpsen_registration where employee_id=\"%@\" and
```

```
password=\"%@\"",username,password];
        //NSString *statement =[NSString stringWithFormat:@"select * from Ipsen_users"];
        NSLog(@"Select Query=%@",statement);
        const char *sqlStatement = (const char *) [statement UTF8String];
        sqlite3_stmt *compiledStatement;


        if(sqlite3_prepare_v2(database, sqlStatement, -1, &compiledStatement, NULL) == SQLITE_OK)
        {
            // Loop through the results and add them to the feeds array
            while(sqlite3_step(compiledStatement) == SQLITE_ROW)
            {               // Read the data from the result row

                userId =[NSString stringWithUTF8String:(char *)sqlite3_column_text(compiledStatement,0)];
                NSLog(@"userid = %@", userId);
              //  NSString *Name =[NSString stringWithUTF8String:(char *)sqlite3_column_text(compiledStatement,4)];

            }
        }
        else
        {
             NSLog(@"prepare statement forIpsen_registration insert: %s\n", sqlite3_errmsg(database));
        }

        // Release the compiled statement from memory
        sqlite3_finalize(compiledStatement);

    }
    sqlite3_close(database);

    }
    return userId;
}
****************************
INSERT
****************************
-(NSString *)insertTotalCourse:(NSString *)courseId:(NSString *)courseTitle:(NSString *)language
{
    if ([self checkDB] == YES )
    {
        sqlite3 *database;



        // Open the database from the users filessytem
        if(sqlite3_open([dbfilepath UTF8String], &database) == SQLITE_OK)
        {
            // Setup the SQL Statement and compile it for faster access
            NSString * courseIdString=courseId;
            NSString * courseTitleString=courseTitle;
            NSString * languageString=language;
            NSString *statement =[NSString stringWithFormat:@"insert into Ipsen_totalCourses(courseId, courseTitle, language)
values(\"%@\",\"%@\",\"%@\")",courseIdString,courseTitleString,languageString];
            //NSString *statement =[NSString stringWithFormat:@"select * from Ipsen_users"];
            NSLog(@"Insert Query=%@",statement);
            const char *sqlStatement = (const char *) [statement UTF8String];
            sqlite3_stmt *compiledStatement;


            if(sqlite3_prepare_v2(database, sqlStatement, -1, &compiledStatement, NULL) == SQLITE_OK)
            {
                sqlite3_step(compiledStatement);

                return @"Success";


                // NSString *delete_ID=[NSString stringWithUTF8String:(char *)sqlite3_column_text(compiledStatement, 0)];
            }
            else
            {
                NSLog(@"prepare statement Ipsen_totalCourses insert: %s\n", sqlite3_errmsg(database));
                return @"Failed";
            }
        }
```

```
        // Release the compiled statement from memory


        sqlite3_close(database);

    }
     return 0;
}
*******************************
UPDATE
*******************************
-(NSString *)updateIpsenCourseStatus:(int)userId:(NSString *)courseId:(NSString *)moduleId:(int)status {

    if ([self checkDB] == YES )
    {
        sqlite3 *database;
        // Open the database from the users filessytem
        if(sqlite3_open([dbfilepath UTF8String], &database) == SQLITE_OK)
        {
            NSString *statement =[NSString stringWithFormat:@"update IpsenCourseStatus SET Status = %d WHERE  UserId
= %d AND CourseId = \"%@\" AND ModuleId =\"%@\"", status,userId,courseId,moduleId];

            NSLog(@"insert insertIpsenCourseStatus Query=%@",statement);
            const char *sqlStatement = (const char *) [statement UTF8String];
            sqlite3_stmt *compiledStatement;

            if(sqlite3_prepare_v2(database, sqlStatement, -1, &compiledStatement, NULL) == SQLITE_OK)
            {
                sqlite3_step(compiledStatement);
                return @"Success";
            }
            else
            {
                NSLog(@"prepare statement Ipsen_totalCourses insert: %s\n", sqlite3_errmsg(database));
                return @"Failed";
            }
        }

        sqlite3_close(database);
    }

    return 0;
}


*********************************
DELETE
*********************************



-(NSString *)deleteIpsenCourseStatus {

    if ([self checkDB] == YES )
    {
        sqlite3 *database;
        // Open the database from the users filessytem
        if(sqlite3_open([dbfilepath UTF8String], &database) == SQLITE_OK)
        {
            NSString *statement =[NSString stringWithFormat:@"delete from IpsenCourseStatus"];

            NSLog(@"delete IpsenCourseStatus Query=%@",statement);
            const char *sqlStatement = (const char *) [statement UTF8String];
            sqlite3_stmt *compiledStatement;

            if(sqlite3_prepare_v2(database, sqlStatement, -1, &compiledStatement, NULL) == SQLITE_OK)
            {
                sqlite3_step(compiledStatement);
                return @"Success";
            }
            else
            {
                NSLog(@"prepare statement Ipsen_totalCourses insert: %s\n", sqlite3_errmsg(database));
```

```
            return @"Failed";
        }
    }

    sqlite3_close(database);
}

return 0;
}
```

Posted 25th March 2013 by abhijith pp

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