# What is ODBC?

Open Database Connectivity (ODBC) is a standard software API specification for using database management systems (DBMS). ODBC is independent of programming language, database system and operating system.

ODBC was created by the SQL Access Group and first released in September, 1992. ODBC is based on the Call Level Interface (CLI) specifications from SQL, X/Open (now part of The Open Group), and the ISO/IEC.

The ODBC API is a library of ODBC functions that let ODBC-enabled applications connect to any database for which an ODBC driver is available, execute SQL statements, and retrieve results.

The goal of ODBC is to make it possible to access any data from any application, regardless of which database management system (DBMS) is handling the data. ODBC achieves this by inserting a middle layer called a database driver between an application and the DBMS. This layer translates the application's data queries into commands that the DBMS understands.

Both windows and Linux have ODBC API.

# Experience:

I worked on ODBC connection for 2 days.

At first, I want to connect the MySql. But MySql doesn’t seem to be so friendly. The machine is 64 bit. MySql only has 32-bit ODBC driver. So I changed my mind, I decide to use sql server. SQL Server is absolutely better than MySql in this aspect. Few time that I had spent to finish the connection and sql statement executing.

There are things that needs to be took care of in windows:

* Header files:

#include <windows.h>

#include <sql.h>

#include <sqltypes.h>

#include <sqlext.h>

These header files contain the ODBC interfaces and macros. See the sample for the details.

* Methods:

**SQLAllocHandle** - Allocates an environment, connection, statement, or descriptor handle.

**SQLSetEnvAttr** - sets attributes that govern aspects of environments.

**SQLSetConnectAttr** - sets attributes that govern aspects of connections.

**SQLDriverConnect** - an alternative to SQLConnect. It supports data sources that require more connection information than the three arguments in SQLConnect, dialog boxes to prompt the user for all connection information, and data sources that are not defined in the system information.(https://docs.microsoft.com/en-us/sql/odbc/reference/syntax/sqldriverconnect-function?view=sql-server-2017)

**SQLExecDirect** - executes a preparable statement, using the current values of the parameter marker variables if any parameters exist in the statement. SQLExecDirect is the fastest way to submit an SQL statement for one-time execution.

**SQLFetch** - fetches the next rowset of data from the result set and returns data for all bound columns.

**SQLGetData** - retrieves data for a single column in the result set or for a single parameter after SQLParamData returns SQL\_PARAM\_DATA\_AVAILABLE. It can be called multiple times to retrieve variable-length data in parts.

* Connect String:

SERVER=JOSEN\\JOSENDB;UID=Josen;PWD=jiang891203;DATABASE=issuelog;DRIVER={SQL Server Native Client 11.0};

* Ways to get the result set
* Execute sql statement every-time to get the latest result set.
* Execute sql statement once and loop the result set with cursor.