



# **The SS Programming Language Appendix 3**

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## MySQL® Database Operations

The library member `std/mysql.ss` defines objects and functions which enable queries and operations on MySQL databases. This is defined under systems with MySQL.

The central object which is used has type `_MySQL`, and it is used to open a database:

```
_MySQL db # declare the object
# modes user and pwd set necessary values to connect to the database - -
# they can be used in any order, then connect
db.user('userid').pwd('password').connect # - - to the default database

# When the above variable db is used with the query function,
# it returns an object - -
_MySQLresult result = db.query("SELECT * FROM mytable")
```

### Table: `_MySQL` Procedures

Procedure:	On Type:	Description:
<code>user(string uid)</code>	<code>_MySQL</code>	Mode, setting user id before connecting
<code>pwd(string pwd)</code>	<code>_MySQL</code>	Mode, setting password before connect
<code>set_db(string db)</code>	<code>_MySQL</code>	Mode, changes default database before connect
<code>connect</code>	<code>_MySQL</code>	Function, opens the database, signals failure
<code>error</code>	<code>_MySQL</code>	Function, returns error message string
<code>close</code>	<code>_MySQL</code>	Method, closes the database
<code>query(string sql)</code>	<code>_MySQL</code>	Function, sql is SELECT or SHOW, returns object type <code>_MySQL_Result</code>
<code>submit(string sql)</code>	<code>_MySQL</code>	Function, returns bool for non-SELECT or SHOW
<code>databases</code>	<code>_MySQL</code>	Function, returns array of strings
<code>table_names</code>	<code>_MySQL</code>	Function, returns string array of tables in default db
<code>table(string tbl)</code>	<code>_MySQL_Result</code>	Function, returns object type <code>_MySQL_table</code>
<code>fetch</code>	<code>_MySQL_Result</code>	Generator, returns an array of values, with string index (column names) for a row
<code>num_rows</code>	<code>_MySQL</code>	Function, returns int, number of rows returned by the query
<code>num_affected</code>	<code>_MySQL</code>	Function, returns int, number of rows affected by the submit

The fetch function is valid after SELECT or SHOW in a query.

Generator fetch returns the next row, a string array with string indexes. Each field is a key (an unnamed or expression column gets a pseudo-name from the query) with its string value. Each call to fetch gets a row or returns **null**, to indicate no more rows.

Object type `_MySQL_Result` functions use a signal for error reporting; condition codes are defined.

## Object `_MySQL_table`

This object describes a table, in simple form, and allows access to its fields.

### Table: Object `_MySQL_table`

Function:	Description:
<code>table</code>	string, name of the table
<code>num_fields</code>	number of fields
<code>fields</code>	array of objects of type <code>_MySQLfield</code> , indexes are the string field names
<code>primaries</code>	string array, names of the fields in the primary index

## Object `_MySQL_field`

This object defines the attributes of a field.

### Table: Object `_MySQL_field`

Function:	Description:
<code>name</code>	string, name of the field
<code>type</code>	string
<code>values</code>	string array
<code>extras</code>	string
<code>quoted</code>	bool, indicates whether values must be quoted

The values item depends on the type. If it is 'enum' or 'set', it is a list of values, for example. For simple types, it is an array with one element, the default value.

Extras may indicate an integer is UNSIGNED. It will indicate the default and the null behavior. This string depends on the type.

These and 'type' depend on the values defined by MySQL.