CRUD operation

`INSERT INTO User`
`VALUES('Jim Doe', 'doe@party.com')`
	`# delete user entry`
	`dn: uid=jim,dc=betrayer,dc=com`
	`changetype: delete`

`db.user`
`  .update( { _id: 1 },`
`    { $rename: { 'Jimmy': 'Jim'} } )`
`  .comment("Renaming »Jimmmy« to »Jim«");`	

Query

`SELECT *`
`FROM User`
`WHERE email LIKE 'd%'`
	`(&(objectClass=user)(email=d*))`

`db.inventory.find({`
`  $and: [`
`  { class: "User" },`
`  { email: /^d/ }`
`  ]`
`})`
	`List<User> c = qf`
	`  .selectFrom(user)`
	`  .where(user.email`
	`  .StartsWith("d"))`
	`  .fetch();`

Schema

```
CREATE TABLE User (
   id INTEGER PRIMARY KEY
  ,cname VARCHAR(255)
  ,email VARCHAR(255)
)
```

```
{
  "$schema": "http://json-schema.org/draft/2019-09/schema"
  "title": "Product",
  "type": "object",
  "required": ["id", "name", "price"],
  "properties": {
    "id": {
      "type": "number"
    }
...
```

Procedures / triggers

```
CREATE PROCEDURE
  insert_data(a integer, b integer)
LANGUAGE SQL
AS $BODY$
  INSERT INTO tbl VALUES (a);
  INSERT INTO tbl VALUES (b);
$BODY$;

CALL insert_data(1, 2);
```

```
CREATE TRIGGER last_change
  BEFORE UPDATE
  ON tbl
  FOR EACH ROW
  EXECUTE PROCEDURE log_changes();
```

Transactions / recovery

```sql
BEGIN;                          -- start a transaction

UPDATE accounts                 -- deduct 1000 from account 1
SET balance = balance - 1000
WHERE id = 1;

UPDATE accounts                 -- add 1000 to account 2
SET balance = balance + 1000
WHERE id = 2;

COMMIT;                         -- commit the transaction
```

Data access control

```
GRANT SELECT, INSERT,
       UPDATE, DELETE
ON employees
TO smithj;
```

```
privileges: [
  { resource:
    {
      db: "products",
      collection: "user"
    },
    actions: [ "find",
               "update",
               "insert" ]
  },
]
```

API support

```
conn = DriverManager.getConnection
      (DB_URL,USER,PASS);

stmt = conn.createStatement();
ResultSet rs = stmt.executeQuery(
 "SELECT DISTINCT email FROM User");
while(rs.next()) {
  System.out.println(rs.getString("email"));
}
```

```
client = MongoClient(port=27017)
db=client.business
fivestar = db.reviews.find_one({'rating': 5})
print(fivestar)
```