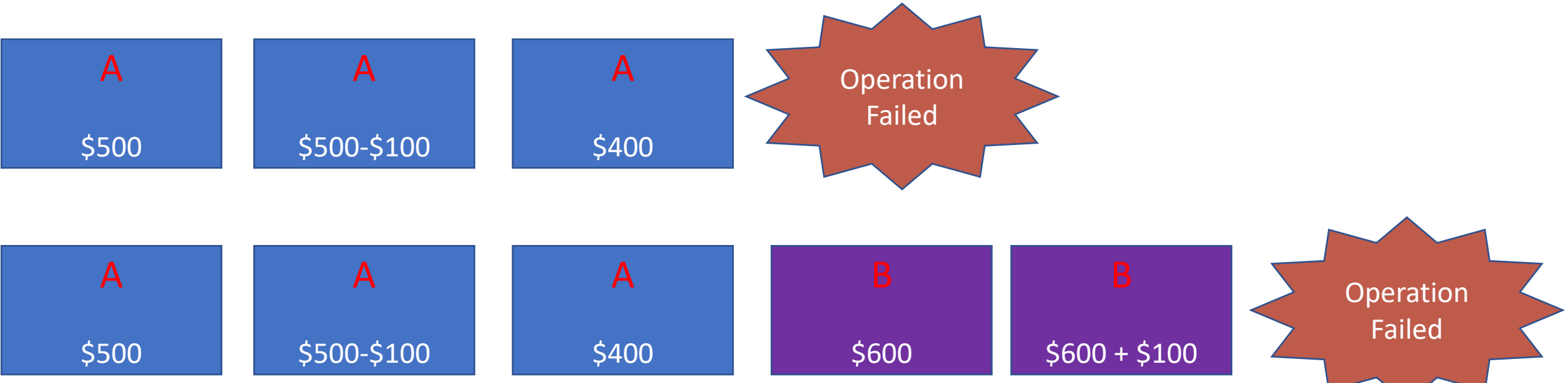
Transaction

Transaction

- It is a set of logically related operations.
- Transferring $100 from your bank account A to B

Transaction

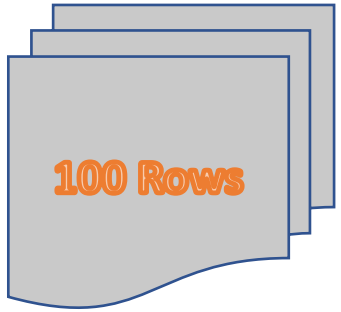
- **Commit:** If all the operations in a transaction are completed successfully then commit those changes to the database permanently.
- **Rollback:** If any of the operation fails then rollback all the changes done by previous operations.

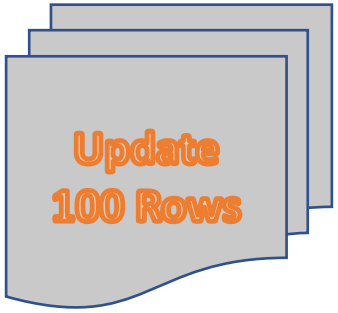


ACID Properties

Atomicity, **C**onsistency, **I**solation, and **D**urability

- Maintaining the integrity of database during transaction processing.
- Atomicity: Execute it entirely or do not execute at all.

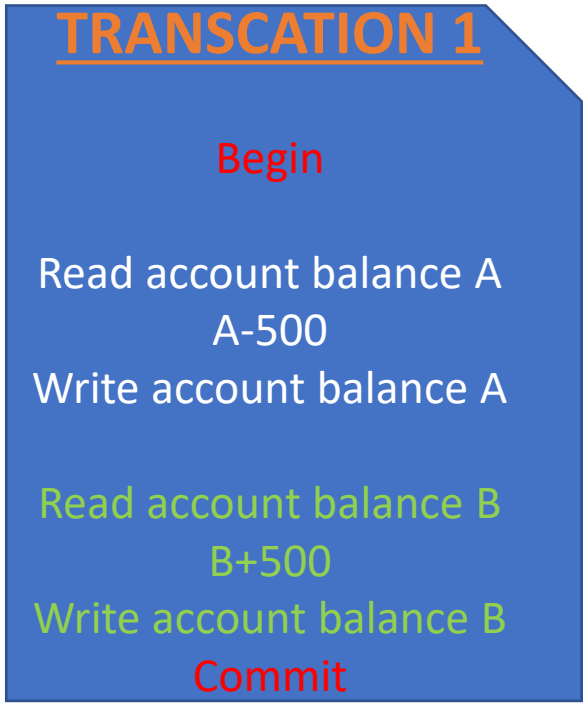


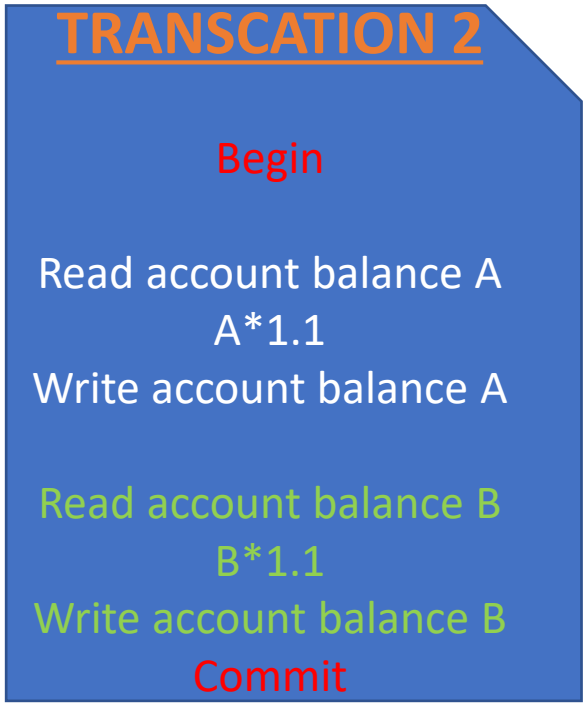


- Consistency: Execution of the transaction moves database from one consistent state to another.

ACID Properties

- Isolation
  - No transaction will affect the existence of any other transaction.





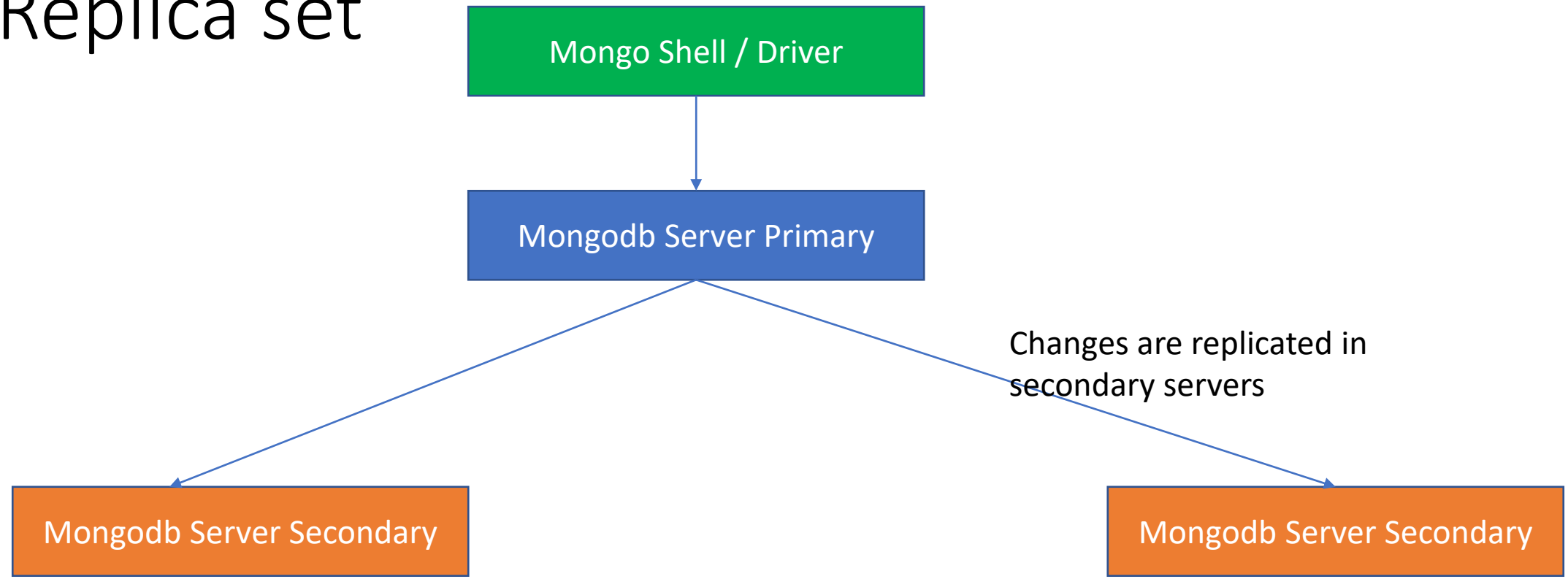
- **Durability**
  - Changes made by committed transactions are permanent.

Examples

Open SQL workbench

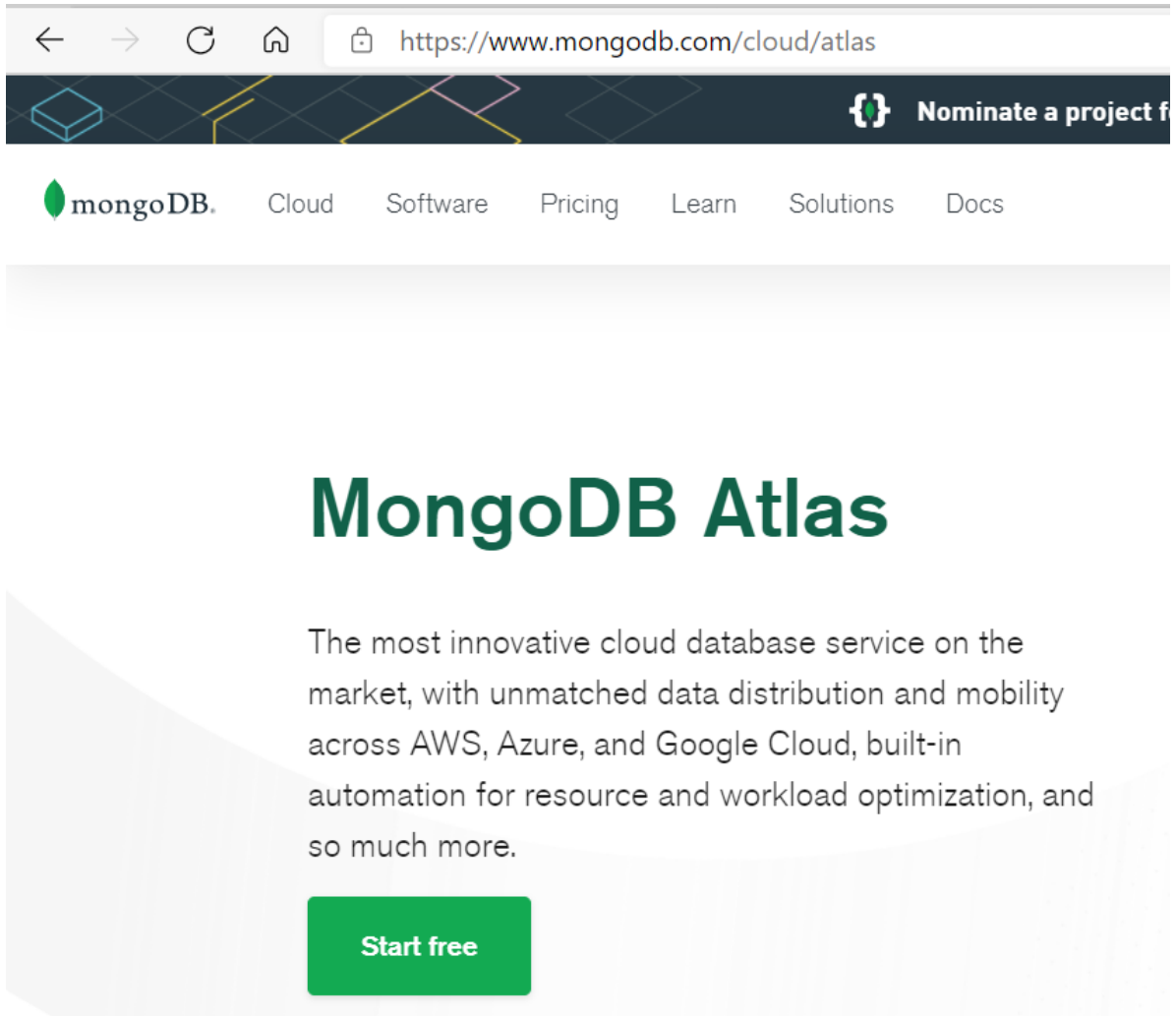
```
set autocommit=0;
use test;
select * from bank_account where account_no=12;
update bank_account set balance=balance-100 where account_no=12;
update bank_account set balance=balance+100 where account_no=13;
commit;
rollback;
```

Replica set


Mongo Shell / Driver
Mongodb Server Primary
Changes are replicated in secondary servers
Mongodb Server Secondary
Mongodb Server Secondary

Shards

- https://www.mongodb.com/
- --→ cloud→Atlas



https://cloud.mongodb.com/v2/6056b708033c3337cf31d395#setup/onboarding

Let's get your account set up

Name your organization and project

Organization

Your organization can be a business, team, or an individual

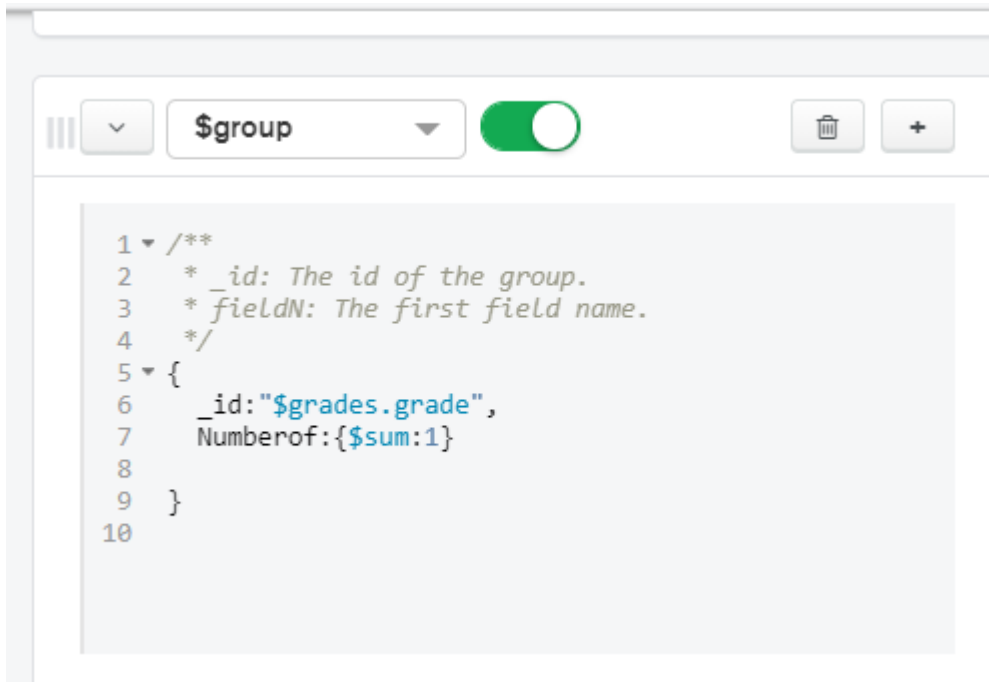
Kawal

Project Name

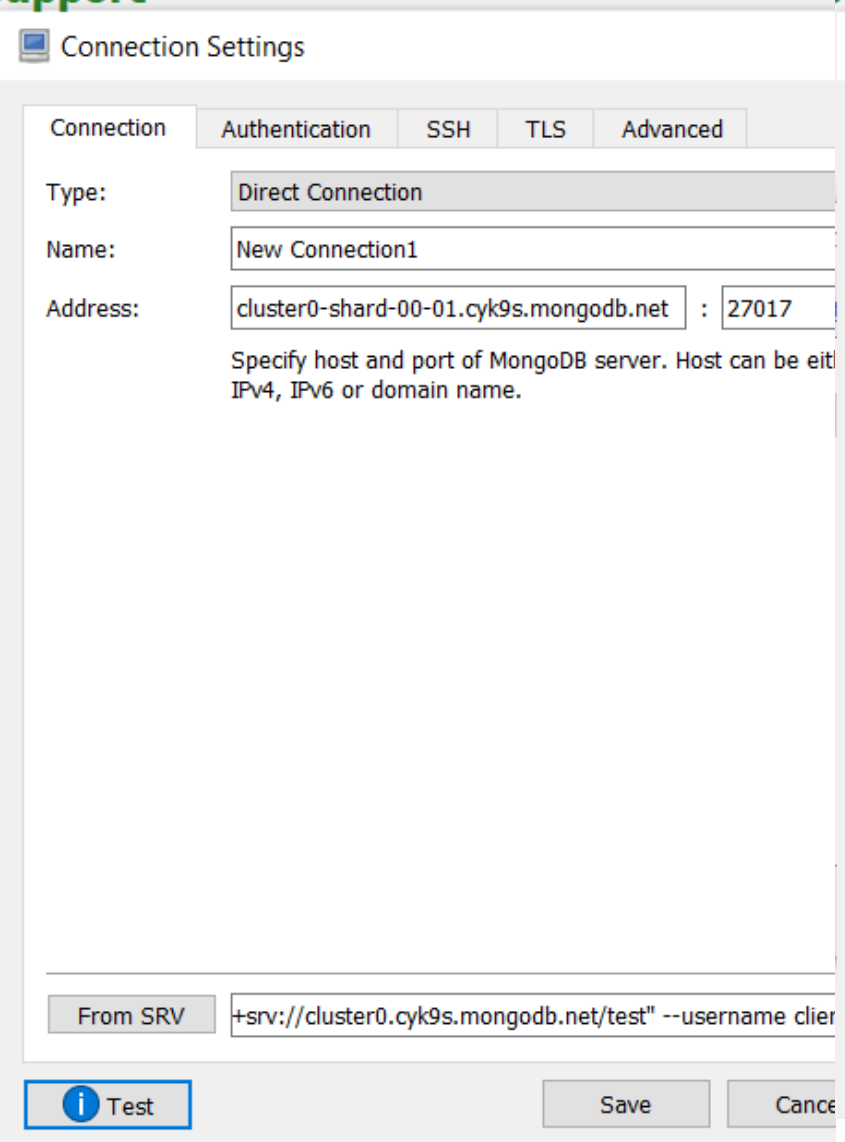
Use projects to isolate different environments (development/testing/production)

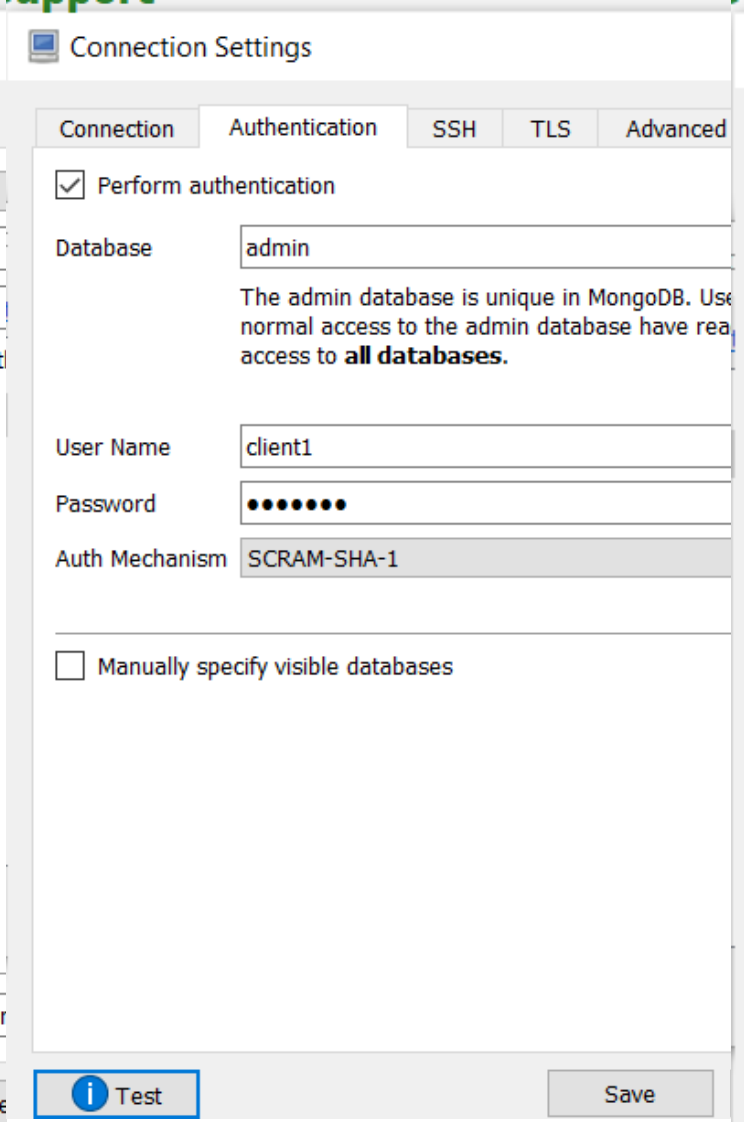
Project1

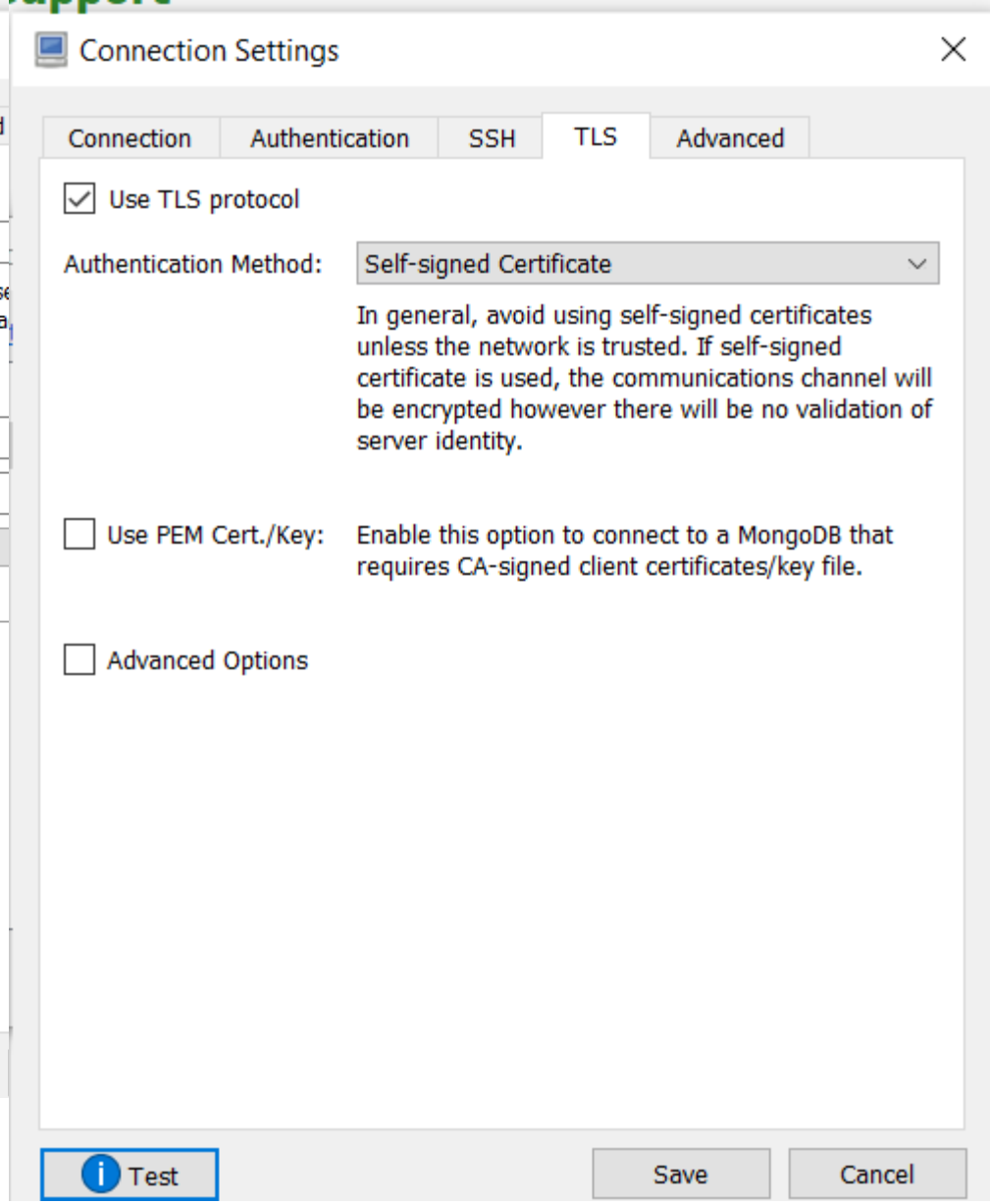

$unwind
Output after $unwind stage
/**
* path: Path to the array field.
* includeArrayIndex: Optional name for index.
* preserveNullAndEmptyArrays: Optional
* toggle to unwind null and empty values.
*/
{
path:"$grades"
}
restaurant_id: "40356018"
_id: ObjectId("5eb3d668b31de5d588
address: Object
borough: "Brooklyn"
cuisine: "American"
grades: Object
name: "Riviera Caterer"


$group
/**
* _id: The id of the group.
* fieldN: The first field name.
*/
{
_id:"$grades.grade",
Numberof:{$sum:1}
}

- https://docs.atlas.mongodb.com/getting-started/


Connection Settings
Connection
Authentication
SSH
TLS
Advanced
Type:
Direct Connection
Name:
New Connection1
Address:
cluster0-shard-00-01.cyk9s.mongodb.net
:
27017
Specify host and port of MongoDB server. Host can be eit
IPv4, IPv6 or domain name.
From SRV
+srv://cluster0.cyk9s.mongodb.net/test" --username clier
Test
Save
Cance


Connection Settings
Connection
Authentication
SSH
TLS
Advanced
Perform authentication
Database
admin
The admin database is unique in MongoDB. Use
normal access to the admin database have rea
access to all databases.
User Name
client1
Password
Auth Mechanism
SCRAM-SHA-1
Manually specify visible databases
Test
Save


Connection Settings
Connection
Authentication
SSH
TLS
Advanced
Use TLS protocol
Authentication Method:
Self-signed Certificate
In general, avoid using self-signed certificates unless the network is trusted. If self-signed certificate is used, the communications channel will be encrypted however there will be no validation of server identity.
Use PEM Cert./Key:
Enable this option to connect to a MongoDB that requires CA-signed client certificates/key file.
Advanced Options
Test
Save
Cancel

- const session=db.getMongo().startSession();
- const userc=session.getDatabase("test").user
- const teamc=session.getDatabase("test").team
- session.startTransaction();

- userc.deleteOne({name:“Raman"})

- teamc.deleteOne({teamname:"orange"})
- session.commitTransaction()
- Session.abortTransaction();

- mongo "mongodb+srv://mycluster.nunik.mongodb.net/myFirstDatabase" --username user2