**Sharding Concept**

**Make sure u have MongoDB shell installed**

**Add Environment variable -> C:\Program Files\MongoDB\Server\8.0\bin**

Create data folder inside C drive

Inside that create

**Open PowerShell -> Run as Administrator**

Config Server

mkdir C:\data\cfg1, C:\data\cfg2, C:\data\cfg3

Shard Servers (2 shards, 3 nodes each)

mkdir C:\data\shard1\_1, C:\data\shard1\_2, C:\data\shard1\_3

mkdir C:\data\shard2\_1, C:\data\shard2\_2, C:\data\shard2\_3

Mongos router

mkdir C:\data\mongos

**Open 3 different powershells run commands -> configure servers**

mongod --configsvr --replSet configReplSet --port 27019 --dbpath C:\data\cfg1 --bind\_ip localhost

mongod --configsvr --replSet configReplSet --port 27020 --dbpath C:\data\cfg2 --bind\_ip localhost

mongod --configsvr --replSet configReplSet --port 27021 --dbpath C:\data\cfg3 --bind\_ip localhost

mongosh --port 27019

rs.initiate({

\_id: "configReplSet",

configsvr: true,

members: [

{ \_id: 0, host: "localhost:27019" },

{ \_id: 1, host: "localhost:27020" },

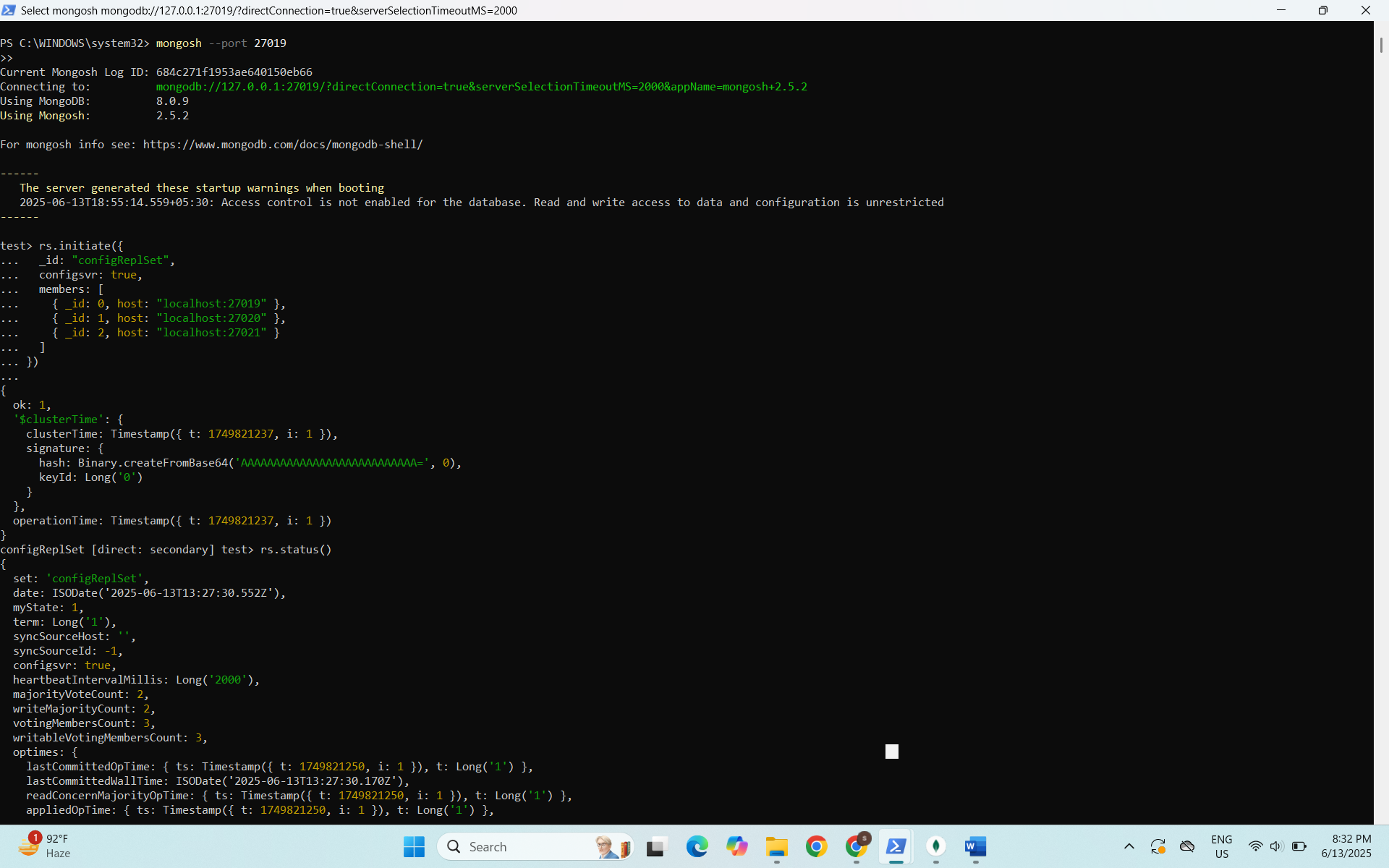
{ \_id: 2, host: "localhost:27021" }

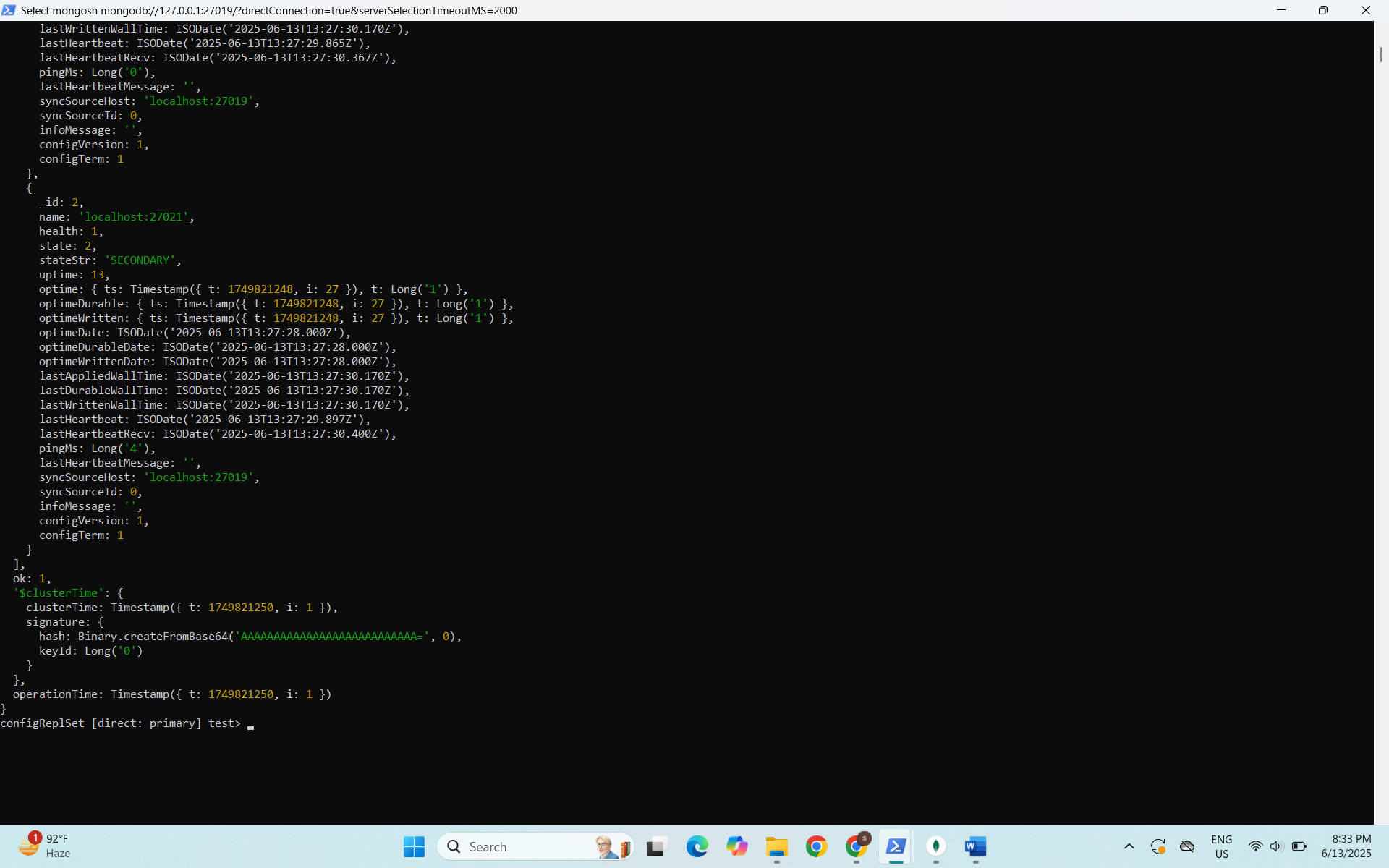
]

})

rs.status()

**Output:**





**Start Shard 1 Replica Set (3 nodes)**

open 3 new PowerShell windows and run

mongod --shardsvr --replSet shard1ReplSet --port 27022 --dbpath C:\data\shard1\_1 --bind\_ip localhost

mongod --shardsvr --replSet shard1ReplSet --port 27023 --dbpath C:\data\shard1\_2 --bind\_ip localhost

mongod --shardsvr --replSet shard1ReplSet --port 27024 --dbpath C:\data\shard1\_3 --bind\_ip localhost

mongosh --port 27022

rs.initiate({

\_id: "shard1ReplSet",

members: [

{ \_id: 0, host: "localhost:27022" },

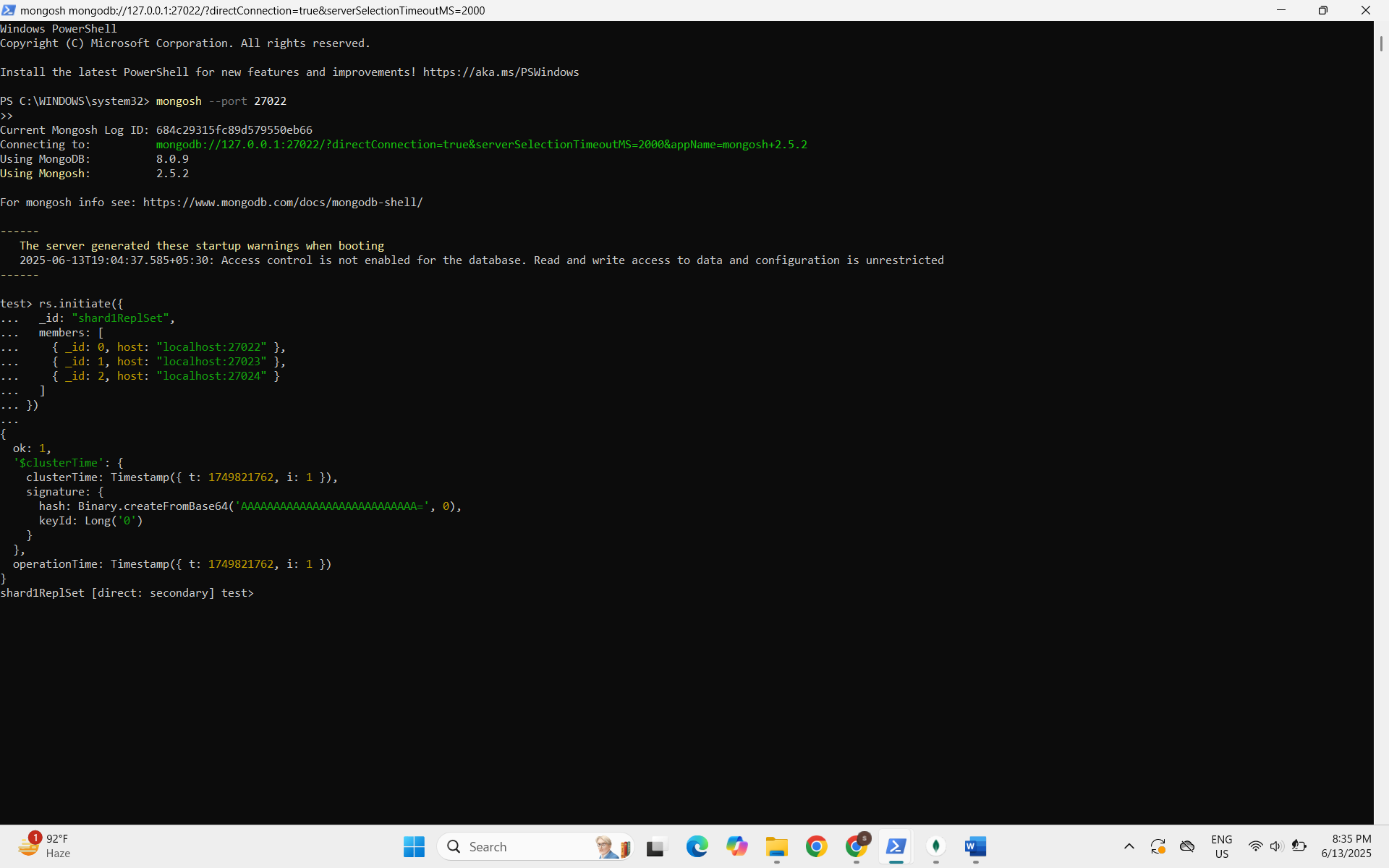
{ \_id: 1, host: "localhost:27023" },

{ \_id: 2, host: "localhost:27024" }

]

})

Output:



**Start Shard 2 Replica Set (3 nodes)**

Open 3 new PowerShell windows and run

mongod --shardsvr --replSet shard2ReplSet --port 27025 --dbpath C:\data\shard2\_1 --bind\_ip localhost

mongod --shardsvr --replSet shard2ReplSet --port 27026 --dbpath C:\data\shard2\_2 --bind\_ip localhost

mongod --shardsvr --replSet shard2ReplSet --port 27027 --dbpath C:\data\shard2\_3 --bind\_ip localhost

mongosh --port 27025

rs.initiate({

\_id: "shard2ReplSet",

members: [

{ \_id: 0, host: "localhost:27025" },

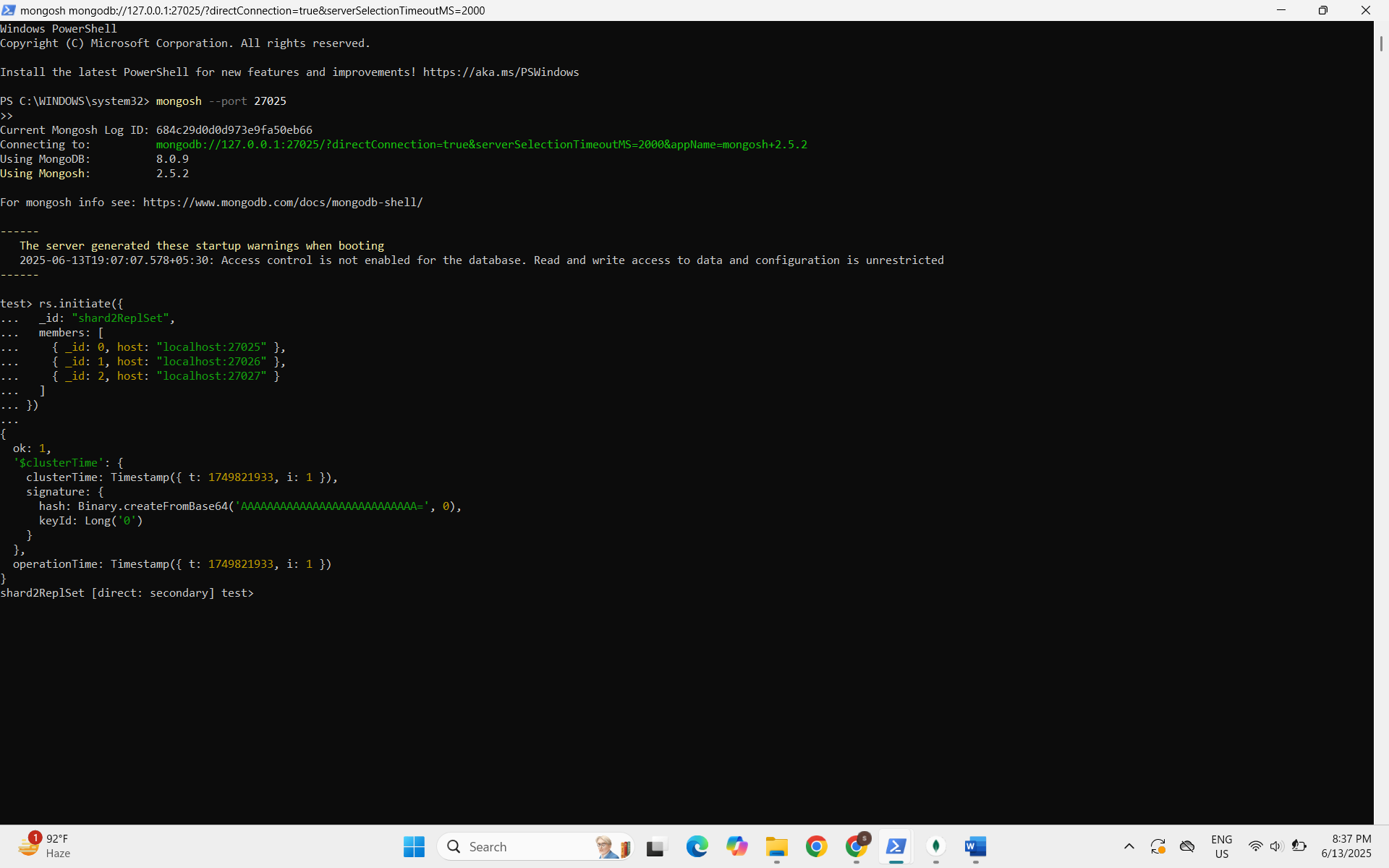
{ \_id: 1, host: "localhost:27026" },

{ \_id: 2, host: "localhost:27027" }

]

})

**Output**:



**Open a new PowerShell window**

mongos --configdb configReplSet/localhost:27019,localhost:27020,localhost:27021 --port 27018 --bind\_ip localhost

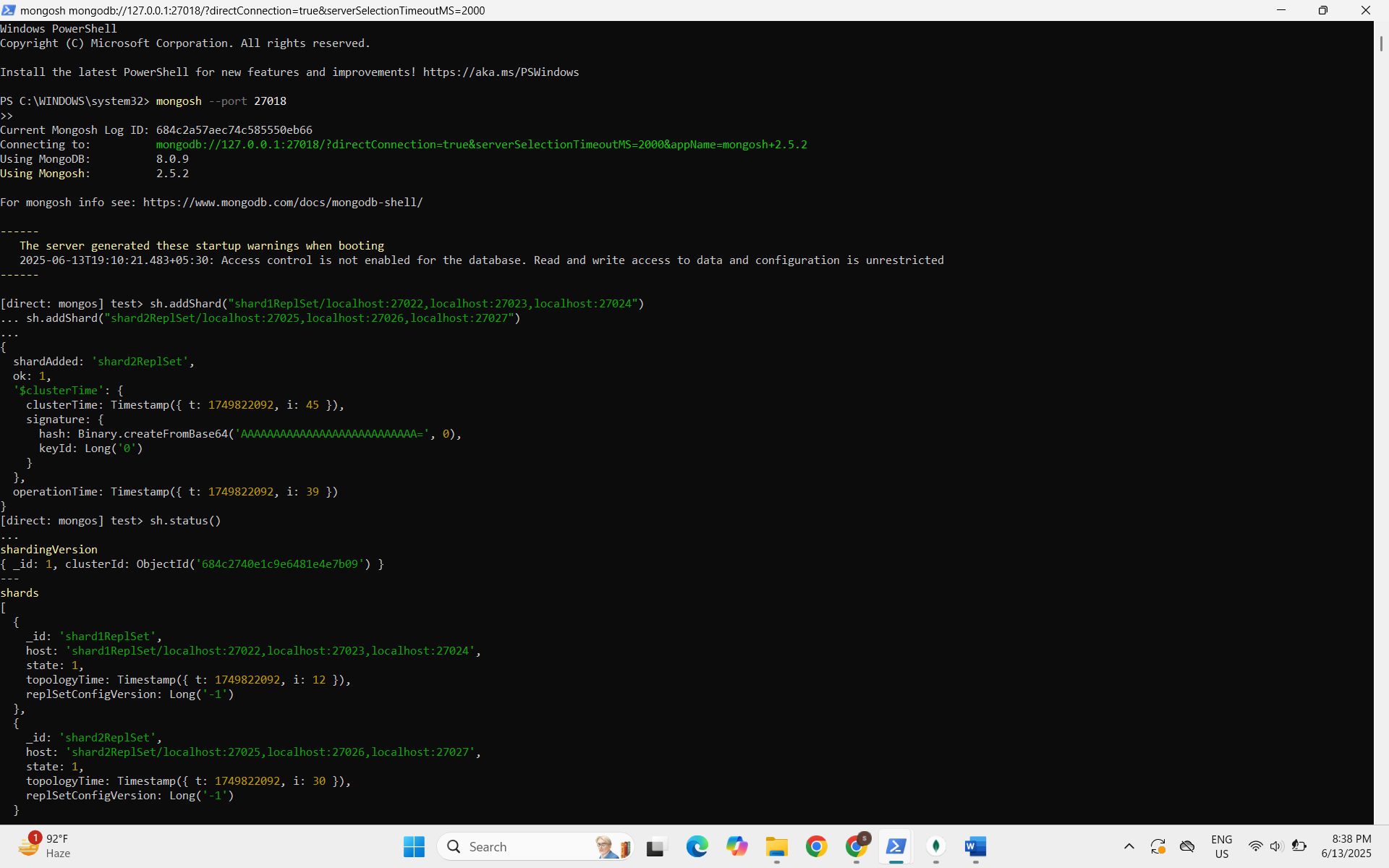
mongosh --port 27018

sh.addShard("shard1ReplSet/localhost:27022,localhost:27023,localhost:27024")

sh.addShard("shard2ReplSet/localhost:27025,localhost:27026,localhost:27027")

sh.status()

**Output:**



sh.enableSharding("testDB")

sh.shardCollection("testDB.testCollection", { "\_id": "hashed" })

for (let i = 0; i < 1000; i++) {

db.testCollection.insert({

userId: i,

text: "hello " + i,

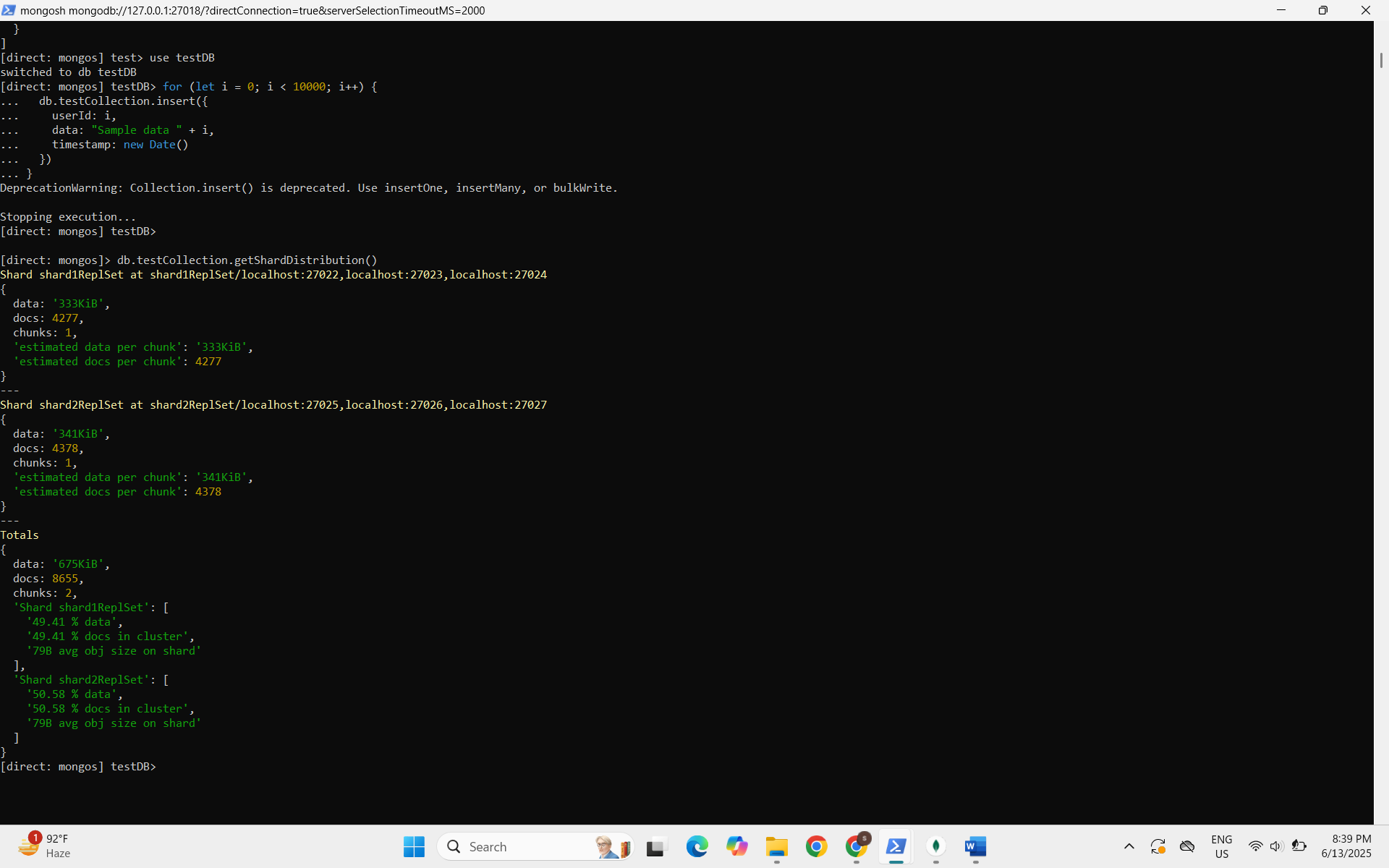
time: new Date()

})

}

db.testCollection.getShardDistribution()

**Output:**



**In MongoDB Compass:**

Create a Connection using localhost:27018

