How to setup MongoDB - Four sharded replicas in Windows 10 on Single machine/Laptop

---------- USE Following steps sequentially in windows cmd prompt.

1) setup config servers

Open windows cmd prompt
cd \
mkdir data\config1
mkdir data\config2
mkdir data\config3

Open multiple windows cmd prompt's as needed to run each of these individually cmd prompt

mongod --configsvr --dbpath data/config1 --port 2011 --replSet rs0 --bind_ip localhost
mongod --configsvr --dbpath data/config2 --port 2012 --replSet rs0 --bind_ip localhost
mongod --configsvr --dbpath data/config3 --port 2013 --replSet rs0 --bind_ip localhost

---connect to config1 server
Open windows cmd prompt
mongo --port 2011

```
rs.initiate(
 {
   _id: "rs0",
   configsvr: true,
   members: [
    { _id : 0, host : "localhost:2011" },
    { _id : 1, host : "localhost:2012" },
    { _id : 2, host : "localhost:2013" }
   ]
 }
)
```

2) setup shard1

Open windows cmd prompt
cd \
mkdir data\shard1\rs2
mkdir data\shard1\rs2

mkdir data\shard1\rs3

Open multiple windows cmd prompt's as needed to run each of these individually cmd prompt

mongod --shardsvr --replSet shard1rs --port 20010 --dbpath data/shard1/rs1 --bind_ip localhost
mongod --shardsvr --replSet shard1rs --port 20011 --dbpath data/shard1/rs2 --bind_ip localhost
mongod --shardsvr --replSet shard1rs --port 20012 --dbpath data/shard1/rs3 --bind_ip localhost

---connect to shard1 host
Open windows cmd prompt

mongo --port 20010

```
rs.initiate(
 {
  _id: "shard1rs",
  members: [
   { _id : 0, host : "localhost:20010" },
   { _id : 1, host : "localhost:20011" },
   { _id : 2, host : "localhost:20012" }
  ]
 }
)
```

3) setup shard2

Open windows cmd prompt
cd \
mkdir data\shard2\rs2
mkdir data\shard2\rs2
mkdir data\shard2\rs3

Open multiple windows cmd prompt's as needed to run each of these individually cmd prompt

mongod --shardsvr --replSet shard2rs --port 20013 --dbpath data/shard2/rs1
mongod --shardsvr --replSet shard2rs --port 20014 --dbpath data/shard2/rs2
mongod --shardsvr --replSet shard2rs --port 20015 --dbpath data/shard2/rs3

Open windows cmd prompt

mongo --port 20013

```
rs.initiate(
 {
   _id: "shard2rs",
   members: [
    { _id : 0, host : "localhost:20013" },
    { _id : 1, host : "localhost:20014" },
    { _id : 2, host : "localhost:20015" }
   ]
 }
)
```

4) setup shard3

Open windows cmd prompt
cd \
mkdir data\shard3\rs2
mkdir data\shard3\rs2
mkdir data\shard3\rs3

Open multiple windows cmd prompt's as needed to run each of these individually cmd prompt

mongod --shardsvr --replSet shard3rs --port 20016--dbpath data/shard3/rs1 --bind_ip localhost
mongod --shardsvr --replSet shard3rs --port 20017 --dbpath data/shard3/rs2 --bind_ip localhost
mongod --shardsvr --replSet shard3rs --port 20018 --dbpath data/shard3/rs3 --bind_ip localhost

Open windows cmd prompt

```
mongo --port 20016
rs.initiate(
 {
   _id: "shard3rs",
   members: [
    { _id : 0, host : "localhost:20016" },
    { _id : 1, host : "localhost:20017" },
    { _id : 2, host : "localhost:20018" }
   ]
 }
)
```

5) setup shard4

Open windows cmd prompt
cd \
mkdir data\shard4\rs2
mkdir data\shard4\rs2
mkdir data\shard4\rs3

Open multiple windows cmd prompt's as needed to run each of these individually cmd prompt

mongod --shardsvr --replSet shard4rs --port 20019 --dbpath data/shard4/rs1 --bind_ip localhost
mongod --shardsvr --replSet shard4rs --port 20020 --dbpath data/shard4/rs2 --bind_ip localhost
mongod --shardsvr --replSet shard4rs --port 20021 --dbpath data/shard4/rs3 --bind_ip localhost

Open windows cmd prompt

```
mongo --port 20019
rs.initiate(
 {
  _id: "shard4rs",
  members: [
   { _id : 0, host : "localhost:20019" },
   { _id : 1, host : "localhost:20020" },
   { _id : 2, host : "localhost:20021" }
  ]
 }
)
```

6) setup mongos and add shards

Open windows cmd prompt
cd \
mongos --configdb "rs0/localhost:2011,localhost:2012,localhost:2013" --logpath data/logs/log.mongos0 --port 27200

--connect to mongos and add shards:
Open windows cmd prompt

mongo --port 27200

```
use config
sh.addShard("shard1rs/localhost:20010")
sh.addShard("shard2rs/localhost:20013")
sh.addShard("shard3rs/localhost:20016")
sh.addShard("shard4rs/localhost:20019")


db.shards.find()
```

7)enable sharding on mongoMart and at collection level

```
use mongoMart
sh.enableSharding("mongoMart")

---enable sharding on collection level

sh.shardCollection("mongoMart.shop",{"_id":"hashed"})

for (var i =1;i<=100;i++) db.shop.insert({x:i})

mongos> db.shop.find().count()
100

verfiy distribution and enjoy:
mongos> db.shop.getShardDistribution()

connect to each shards primary and verify counts
```