PRACTICAL-5

1) Start the MongoDB server by specifying -- replSet option. Following is the basic syntax

```
C:\Program Files\MongoDB\Server\4.4\bin>mongod --port 27017 --dbpath "C:\data1" --replSet testrep
{"t":{"$date":"2023-05-02T11:14:55.617+05:30"},"s":"I",  "c":"CONTROL",  "id":23285,   "ctx":"main","msg":"Automatically disabling TL
S 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'"}
{"t":{"$date":"2023-05-02T11:14:56.353+05:30"},"s":"W",  "c":"ASIO",     "id":22601,   "ctx":"main","msg":"No TransportLayer configur
ed during NetworkInterface startup"}
{"t":{"$date":"2023-05-02T11:14:56.354+05:30"},"s":"I",  "c":"NETWORK",  "id":4648602, "ctx":"main","msg":"Implicit TCP FastOpen in u
se."}
{"t":{"$date":"2023-05-02T11:14:56.356+05:30"},"s":"W",  "c":"ASIO",     "id":22601,   "ctx":"main","msg":"No TransportLayer configur
ed during NetworkInterface startup"}
{"t":{"$date":"2023-05-02T11:14:56.360+05:30"},"s":"I",  "c":"STORAGE",  "id":4615611, "ctx":"initandlisten","msg":"MongoDB starting"
,"attr":{"pid":9732,"port":27017,"dbPath":"C:/data1","architecture":"64-bit","host":"DESKTOP-IMLH0SH"}}
{"t":{"$date":"2023-05-02T11:14:56.360+05:30"},"s":"I",  "c":"CONTROL",  "id":23398,   "ctx":"initandlisten","msg":"Target operating
system minimum version","attr":{"targetMinOS":"Windows 7/Windows Server 2008 R2"}}
{"t":{"$date":"2023-05-02T11:14:56.361+05:30"},"s":"I",  "c":"CONTROL",  "id":23403,   "ctx":"initandlisten","msg":"Build Info","attr
":{"buildInfo":{"version":"4.4.2","gitVersion":"15e73dc5738d2278b688f8929aee605fe4279b0e","modules":[],"allocator":"tcmalloc","enviro
nment":{"distmod":"windows","distarch":"x86_64","target_arch":"x86_64"}}}}
{"t":{"$date":"2023-05-02T11:14:56.361+05:30"},"s":"I",  "c":"CONTROL",  "id":51765,   "ctx":"initandlisten","msg":"Operating System"
,"attr":{"os":{"name":"Microsoft Windows 10","version":"10.0 (build 22621)"}}}
{"t":{"$date":"2023-05-02T11:14:56.362+05:30"},"s":"I",  "c":"CONTROL",  "id":21951,   "ctx":"initandlisten","msg":"Options set by co
mmand line","attr":{"options":{"net":{"port":27017},"replication":{"replSet":"testrep"},"storage":{"dbPath":"C:\\data1"}}}}
{"t":{"$date":"2023-05-02T11:14:56.368+05:30"},"s":"I",  "c":"STORAGE",  "id":22270,   "ctx":"initandlisten","msg":"Storage engine to
 use detected by data files","attr":{"dbpath":"C:/data1","storageEngine":"wiredTiger"}}
{"t":{"$date":"2023-05-02T11:14:56.370+05:30"},"s":"I",  "c":"STORAGE",  "id":22315,   "ctx":"initandlisten","msg":"Opening WiredTige
r","attr":{"config":"create,cache_size=2503M,session_max=33000,eviction=(threads_min=4,threads_max=4),config_base=false,statistics=(f
ast),log=(enabled=true,archive=true,path=journal,compressor=snappy),file_manager=(close_idle_time=100000,close_scan_interval=10,close
_handle_minimum=250),statistics_log=(wait=0),verbose=[recovery_progress,checkpoint_progress,compact_progress],"}}
{"t":{"$date":"2023-05-02T11:14:56.413+05:30"},"s":"I",  "c":"STORAGE",  "id":22430,   "ctx":"initandlisten","msg":"WiredTiger messag
e","attr":{"message":"[1683006296:413123][9732:140707509839696], txn-recover: [WT_VERB_RECOVERY_PROGRESS] Recovering log 2 through 3"
}}
{"t":{"$date":"2023-05-02T11:14:56.535+05:30"},"s":"I",  "c":"STORAGE",  "id":22430,   "ctx":"initandlisten","msg":"WiredTiger messag
e","attr":{"message":"[1683006296:534141][9732:140707509839696], txn-recover: [WT_VERB_RECOVERY_PROGRESS] Recovering log 3 through 3"
```

2) Now Open another command prompt for client. We will use this window to query our first server instance C:\>mongo --port 27018

```
C:\Program Files\MongoDB\Server\4.4\bin>mongo --port 27017
MongoDB shell version v4.4.2
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("91ed38f1-b77b-46c3-8b76-2e9b93864c89") }
MongoDB server version: 4.4.2
---
The server generated these startup warnings when booting:
        2023-04-20T16:05:46.011+05:30: Access control is not enabled for the database. Read and write access to data and
 configuration is unrestricted
---
---
        Enable MongoDB's free cloud-based monitoring service, which will then receive and display
        metrics about your deployment (disk utilization, CPU, operation statistics, etc).

        The monitoring data will be available on a MongoDB website with a unique URL accessible to you
        and anyone you share the URL with. MongoDB may use this information to make product
        improvements and to suggest MongoDB products and deployment options to you.

        To enable free monitoring, run the following command: db.enableFreeMonitoring()
        To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
```

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3) **Now Primary server is working. (Creating 1(first) Replicas of Primary instance) Syntax C:\Program Files\MongoDB\Server\4.2\bin>mongod --port 27019 --dbpath "C:\data2" --replSet testrep**

```
C:\Program Files\MongoDB\Server\4.4\bin>mongod --port 27019 --dbpath "C:\Data2" --replSet testrep
{"t":{"$date":"2023-05-02T11:18:39.037+05:30"},"s":"I",  "c":"CONTROL",  "id":23285,   "ctx":"main","msg":"Automatically disabling TL
S 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'"}
{"t":{"$date":"2023-05-02T11:18:39.661+05:30"},"s":"W",  "c":"ASIO",     "id":22601,   "ctx":"main","msg":"No TransportLayer configur
ed during NetworkInterface startup"}
{"t":{"$date":"2023-05-02T11:18:39.662+05:30"},"s":"I",  "c":"NETWORK",  "id":4648602, "ctx":"main","msg":"Implicit TCP FastOpen in u
se."}
{"t":{"$date":"2023-05-02T11:18:39.663+05:30"},"s":"W",  "c":"ASIO",     "id":22601,   "ctx":"main","msg":"No TransportLayer configur
ed during NetworkInterface startup"}
{"t":{"$date":"2023-05-02T11:18:39.665+05:30"},"s":"I",  "c":"STORAGE",  "id":4615611, "ctx":"initandlisten","msg":"MongoDB starting"
,"attr":{"pid":6620,"port":27019,"dbPath":"C:/Data2","architecture":"64-bit","host":"DESKTOP-IMLH0SH"}}
{"t":{"$date":"2023-05-02T11:18:39.666+05:30"},"s":"I",  "c":"CONTROL",  "id":23398,   "ctx":"initandlisten","msg":"Target operating
system minimum version","attr":{"targetMinOS":"Windows 7/Windows Server 2008 R2"}}
{"t":{"$date":"2023-05-02T11:18:39.666+05:30"},"s":"I",  "c":"CONTROL",  "id":23403,   "ctx":"initandlisten","msg":"Build Info","attr
":{"buildInfo":{"version":"4.4.2","gitVersion":"15e73dc5738d2278b688f8929aee605fe4279b0e","modules":[],"allocator":"tcmalloc","enviro
nment":{"distmod":"windows","distarch":"x86_64","target_arch":"x86_64"}}}}
{"t":{"$date":"2023-05-02T11:18:39.666+05:30"},"s":"I",  "c":"CONTROL",  "id":51765,   "ctx":"initandlisten","msg":"Operating System"
,"attr":{"os":{"name":"Microsoft Windows 10","version":"10.0 (build 22621)"}}}
{"t":{"$date":"2023-05-02T11:18:39.666+05:30"},"s":"I",  "c":"CONTROL",  "id":21951,   "ctx":"initandlisten","msg":"Options set by co
mmand line","attr":{"options":{"net":{"port":27019},"replication":{"replSet":"testrep"},"storage":{"dbPath":"C:\\Data2"}}}}
{"t":{"$date":"2023-05-02T11:18:39.671+05:30"},"s":"I",  "c":"STORAGE",  "id":22315,   "ctx":"initandlisten","msg":"Opening WiredTige
r","attr":{"config":"create,cache_size=2503M,session_max=33000,eviction=(threads_min=4,threads_max=4),config_base=false,statistics=(f
ast),log=(enabled=true,archive=true,path=journal,compressor=snappy),file_manager=(close_idle_time=100000,close_scan_interval=10,close
_handle_minimum=250),statistics_log=(wait=0),verbose=[recovery_progress,checkpoint_progress,compact_progress],"}}
{"t":{"$date":"2023-05-02T11:18:39.718+05:30"},"s":"I",  "c":"STORAGE",  "id":22430,   "ctx":"initandlisten","msg":"WiredTiger messag
e","attr":{"message":"[1683006519:717662][6620:140707509839696], txn-recover: [WT_VERB_RECOVERY | WT_VERB_RECOVERY_PROGRESS] Set glob
al recovery timestamp: (0, 0)"}}
{"t":{"$date":"2023-05-02T11:18:39.719+05:30"},"s":"I",  "c":"STORAGE",  "id":22430,   "ctx":"initandlisten","msg":"WiredTiger messag
e","attr":{"message":"[1683006519:718787][6620:140707509839696], txn-recover: [WT_VERB_RECOVERY | WT_VERB_RECOVERY_PROGRESS] Set glob
al oldest timestamp: (0, 0)"}}
{"t":{"$date":"2023-05-02T11:18:39.724+05:30"},"s":"I",  "c":"STORAGE",  "id":4795906, "ctx":"initandlisten","msg":"WiredTiger opened
```

4) **Now Open another command prompt for client. We will use this window to query our second server instance C:\>mongo --port 27019**

```
C:\Program Files\MongoDB\Server\4.4\bin>mongo --port 27019
MongoDB shell version v4.4.2
connecting to: mongodb://127.0.0.1:27019/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("e23bab3b-f035-4684-b332-3a29a83b6ae8") }
MongoDB server version: 4.4.2
---
The server generated these startup warnings when booting:
        2023-05-02T11:18:39.748+05:30: Access control is not enabled for the database. Read and write access to data and configuratio
n is unrestricted
        2023-05-02T11:18:39.749+05:30: This server is bound to localhost. Remote systems will be unable to connect to this server. St
art the server with --bind_ip <address> to specify which IP addresses it should serve responses from, or with --bind_ip_all to bind t
o all interfaces. If this behavior is desired, start the server with --bind_ip 127.0.0.1 to disable this warning
---
---
        Enable MongoDB's free cloud-based monitoring service, which will then receive and display
        metrics about your deployment (disk utilization, CPU, operation statistics, etc).

        The monitoring data will be available on a MongoDB website with a unique URL accessible to you
        and anyone you share the URL with. MongoDB may use this information to make product
        improvements and to suggest MongoDB products and deployment options to you.

        To enable free monitoring, run the following command: db.enableFreeMonitoring()
        To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
```

5) **Now go to the command prompt of Primary server's Client instance. C:\>mongo --port 27018**

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```
C:\Program Files\MongoDB\Server\4.4\bin>mongo --port 27017
MongoDB shell version v4.4.2
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("4e631bbf-75f0-4fcf-b2a5-8d08fe2c0223") }
MongoDB server version: 4.4.2
---
The server generated these startup warnings when booting:
        2023-04-20T16:05:46.011+05:30: Access control is not enabled for the database. Read and write access to data and configuratio
n is unrestricted
---
---
        Enable MongoDB's free cloud-based monitoring service, which will then receive and display
        metrics about your deployment (disk utilization, CPU, operation statistics, etc).

        The monitoring data will be available on a MongoDB website with a unique URL accessible to you
        and anyone you share the URL with. MongoDB may use this information to make product
        improvements and to suggest MongoDB products and deployment options to you.

        To enable free monitoring, run the following command: db.enableFreeMonitoring()
        To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
```

6) **Now type the following code config ={ _id : "testrep" , members :[{ _id : 0, host : "localhost:27018" }] } Above code set id=0 to the first replica instance which is on port 27018.(PRIMARY INSTANCE)**

```
> config ={ _id : "testrep" , members :[ { _id : 0, host : "localhost:27018" } ] }
{
        "_id" : "testrep",
        "members" : [
                {
                        "_id" : 0,
                        "host" : "localhost:27018"
                }
        ]
}
```

7) **After this write command rs.initiate(config) This command initiates a replica set with the current host as its only member. This is confirmed by the output, which should resemble the following:**

```
> rs.initiate(config)
{
        "ok" : 1,
        "$clusterTime" : {
                "clusterTime" : Timestamp(1683007765, 1),
                "signature" : {
                        "hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),
                        "keyId" : NumberLong(0)
                }
        },
        "operationTime" : Timestamp(1683007765, 1)
}
```

8) **After this writte write command rs.status()**

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Class: CEIT-B(AB5)

```
testrep:SECONDARY> rs.status();
{
        "set" : "testrep",
        "date" : ISODate("2023-05-02T06:11:35.704Z"),
        "myState" : 1,
        "term" : NumberLong(1),
        "syncSourceHost" : "",
        "syncSourceId" : -1,
        "heartbeatIntervalMillis" : NumberLong(2000),
        "majorityVoteCount" : 1,
        "writeMajorityCount" : 1,
        "votingMembersCount" : 1,
        "writableVotingMembersCount" : 1,
        "optimes" : {
                "lastCommittedOpTime" : {
                        "ts" : Timestamp(1683007895, 1),
                        "t" : NumberLong(1)
                },
                "lastCommittedWallTime" : ISODate("2023-05-02T06:11:35.538Z"),
                "readConcernMajorityOpTime" : {
                        "ts" : Timestamp(1683007895, 1),
                        "t" : NumberLong(1)
                },
                "readConcernMajorityWallTime" : ISODate("2023-05-02T06:11:35.538Z"),
                "appliedOpTime" : {
                        "ts" : Timestamp(1683007895, 1),
                        "t" : NumberLong(1)
                },
                "durableOpTime" : {
                        "ts" : Timestamp(1683007895, 1),
                        "t" : NumberLong(1)

                },
                "lastAppliedWallTime" : ISODate("2023-05-02T06:11:35.538Z"),
                "lastDurableWallTime" : ISODate("2023-05-02T06:11:35.538Z")
        },
        "lastStableRecoveryTimestamp" : Timestamp(1683007875, 1),
        "electionCandidateMetrics" : {
                "lastElectionReason" : "electionTimeout",
                "lastElectionDate" : ISODate("2023-05-02T06:09:25.390Z"),
                "electionTerm" : NumberLong(1),
                "lastCommittedOpTimeAtElection" : {
                        "ts" : Timestamp(0, 0),
                        "t" : NumberLong(-1)
                },
                "lastSeenOpTimeAtElection" : {
                        "ts" : Timestamp(1683007765, 1),
                        "t" : NumberLong(-1)
                },
                "numVotesNeeded" : 1,
                "priorityAtElection" : 1,
                "electionTimeoutMillis" : NumberLong(10000),
                "newTermStartDate" : ISODate("2023-05-02T06:09:25.422Z"),
                "wMajorityWriteAvailabilityDate" : ISODate("2023-05-02T06:09:25.463Z")
        },
        "members" : [
                {
                        "_id" : 0,
                        "name" : "localhost:27018",
                        "health" : 1,
                        "state" : 1,
                        "stateStr" : "PRIMARY",
                        "uptime" : 196,
                        "optime" : {
```

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```
                "name" : "localhost:27018",
                "health" : 1,
                "state" : 1,
                "stateStr" : "PRIMARY",
                "uptime" : 196,
                "optime" : {
                        "ts" : Timestamp(1683007895, 1),
                        "t" : NumberLong(1)
                },
                "optimeDate" : ISODate("2023-05-02T06:11:35Z"),
                "syncSourceHost" : "",
                "syncSourceId" : -1,
                "infoMessage" : "",
                "electionTime" : Timestamp(1683007765, 2),
                "electionDate" : ISODate("2023-05-02T06:09:25Z"),
                "configVersion" : 1,
                "configTerm" : 1,
                "self" : true,
                "lastHeartbeatMessage" : ""
        }
],
"ok" : 1,
"$clusterTime" : {
        "clusterTime" : Timestamp(1683007895, 1),
        "signature" : {
                "hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),
                "keyId" : NumberLong(0)
        }
},
"operationTime" : Timestamp(1683007895, 1)
```

9) **Step 6(Creating 2(Second—port 27021) Replicas of Primary instance) Syntax C:\Program Files\MongoDB\Server\4.2\bin>mongod --port 27021 --dbpath "C:\data3" --replSet testrep**

Name: AMIT GOSWAMI
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Class: CEIT-B(AB5)

```
C:\Program Files\MongoDB\Server\4.4\bin>mongod --port 27021 --dbpath "C:\Data3" --replSet testrep
{"t":{"$date":"2023-05-02T11:43:50.945+05:30"},"s":"I",  "c":"CONTROL",  "id":23285,   "ctx":"main","msg":"Automatically disabling TLS 1.0,
to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'"}
{"t":{"$date":"2023-05-02T11:43:50.954+05:30"},"s":"W",  "c":"ASIO",     "id":22601,   "ctx":"main","msg":"No TransportLayer configured duri
ng NetworkInterface startup"}
{"t":{"$date":"2023-05-02T11:43:50.956+05:30"},"s":"I",  "c":"NETWORK",  "id":4648602, "ctx":"main","msg":"Implicit TCP FastOpen in use."}
{"t":{"$date":"2023-05-02T11:43:50.956+05:30"},"s":"W",  "c":"ASIO",     "id":22601,   "ctx":"main","msg":"No TransportLayer configured duri
ng NetworkInterface startup"}
{"t":{"$date":"2023-05-02T11:43:50.959+05:30"},"s":"I",  "c":"STORAGE",  "id":4615611, "ctx":"initandlisten","msg":"MongoDB starting","attr"
:{"pid":17992,"port":27021,"dbPath":"C:/Data3","architecture":"64-bit","host":"DESKTOP-IMLH0SH"}}
{"t":{"$date":"2023-05-02T11:43:50.960+05:30"},"s":"I",  "c":"CONTROL",  "id":23398,   "ctx":"initandlisten","msg":"Target operating system
minimum version","attr":{"targetMinOS":"Windows 7/Windows Server 2008 R2"}}
{"t":{"$date":"2023-05-02T11:43:50.960+05:30"},"s":"I",  "c":"CONTROL",  "id":23403,   "ctx":"initandlisten","msg":"Build Info","attr":{"bui
ldInfo":{"version":"4.4.2","gitVersion":"15e73dc5738d2278b688f8929aee605fe4279b0e","modules":[],"allocator":"tcmalloc","environment":{"distm
od":"windows","distarch":"x86_64","target_arch":"x86_64"}}}}
{"t":{"$date":"2023-05-02T11:43:50.961+05:30"},"s":"I",  "c":"CONTROL",  "id":51765,   "ctx":"initandlisten","msg":"Operating System","attr"
:{"os":{"name":"Microsoft Windows 10","version":"10.0 (build 22621)"}}}
{"t":{"$date":"2023-05-02T11:43:50.961+05:30"},"s":"I",  "c":"CONTROL",  "id":21951,   "ctx":"initandlisten","msg":"Options set by command l
ine","attr":{"options":{"net":{"port":27021},"replication":{"replSet":"testrep"},"storage":{"dbPath":"C:\\Data3"}}}}
{"t":{"$date":"2023-05-02T11:43:50.966+05:30"},"s":"I",  "c":"STORAGE",  "id":22315,   "ctx":"initandlisten","msg":"Opening WiredTiger","att
r":{"config":"create,cache_size=2503M,session_max=33000,eviction=(threads_min=4,threads_max=4),config_base=false,statistics=(fast),log=(enab
led=true,archive=true,path=journal,compressor=snappy),file_manager=(close_idle_time=100000,close_scan_interval=10,close_handle_minimum=250),
statistics_log=(wait=0),verbose=[recovery_progress,checkpoint_progress,compact_progress],"}}
{"t":{"$date":"2023-05-02T11:43:51.034+05:30"},"s":"I",  "c":"STORAGE",  "id":22430,   "ctx":"initandlisten","msg":"WiredTiger message","att
r":{"message":"[1683008031:33955][17992:140707509839696], txn-recover: [WT_VERB_RECOVERY | WT_VERB_RECOVERY_PROGRESS] Set global recovery ti
mestamp: (0, 0)"}}
{"t":{"$date":"2023-05-02T11:43:51.034+05:30"},"s":"I",  "c":"STORAGE",  "id":22430,   "ctx":"initandlisten","msg":"WiredTiger message","att
r":{"message":"[1683008031:33955][17992:140707509839696], txn-recover: [WT_VERB_RECOVERY | WT_VERB_RECOVERY_PROGRESS] Set global oldest time
stamp: (0, 0)"}}
{"t":{"$date":"2023-05-02T11:43:51.043+05:30"},"s":"I",  "c":"STORAGE",  "id":4795906, "ctx":"initandlisten","msg":"WiredTiger opened","attr
```

10) After this start mongo client of 2 seconday instance.

```
C:\Program Files\MongoDB\Server\4.4\bin>mongo --port 27021
MongoDB shell version v4.4.2
connecting to: mongodb://127.0.0.1:27021/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("e5209699-0212-41a4-944c-eade1a9f6e19") }
MongoDB server version: 4.4.2
---
The server generated these startup warnings when booting:
        2023-05-02T11:45:36.074+05:30: Access control is not enabled for the database. Read and write access to data and
 configuration is unrestricted
        2023-05-02T11:45:36.076+05:30: This server is bound to localhost. Remote systems will be unable to connect to th
is server. Start the server with --bind_ip <address> to specify which IP addresses it should serve responses from, or wi
th --bind_ip_all to bind to all interfaces. If this behavior is desired, start the server with --bind_ip 127.0.0.1 to di
sable this warning
---
---
        Enable MongoDB's free cloud-based monitoring service, which will then receive and display
        metrics about your deployment (disk utilization, CPU, operation statistics, etc).

        The monitoring data will be available on a MongoDB website with a unique URL accessible to you
        and anyone you share the URL with. MongoDB may use this information to make product
        improvements and to suggest MongoDB products and deployment options to you.

        To enable free monitoring, run the following command: db.enableFreeMonitoring()
        To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
>
```

11) Step 7 Now goto the CMD Client window of Primary Client(port 27018) Execute rs.add() method. Syntax rs.add("localhost:27021")

rs.add("localhost:27021");

```
testrep:PRIMARY> rs.add("localhost:27021");
{
        "ok" : 1,
        "$clusterTime" : {
                "clusterTime" : Timestamp(1683008440, 1),
                "signature" : {
                        "hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),
                        "keyId" : NumberLong(0)
                }
        },
        "operationTime" : Timestamp(1683008440, 1)
}
```

12) After this execute rs.status(); command.

This will show status of our Cluster. In our cluster three instance first Primary and remaining two are replicas of primary instance.

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```
testrep:PRIMARY> rs.status();
{
        "set" : "testrep",
        "date" : ISODate("2023-05-02T06:22:06.092Z"),
        "myState" : 1,
        "term" : NumberLong(1),
        "syncSourceHost" : "",
        "syncSourceId" : -1,
        "heartbeatIntervalMillis" : NumberLong(2000),
        "majorityVoteCount" : 2,
        "writeMajorityCount" : 2,
        "votingMembersCount" : 2,
        "writableVotingMembersCount" : 2,
"members" : [
        {
                "_id" : 0,
                "name" : "localhost:27018",
                "health" : 1,
                "state" : 1,
                "stateStr" : "PRIMARY",
                "uptime" : 731,
                "optime" : {
                        "ts" : Timestamp(1683008524, 1),
                        "t" : NumberLong(1)
                },
        {
                "_id" : 1,
                "name" : "localhost:27021",
                "health" : 1,
                "state" : 2,
                "stateStr" : "SECONDARY",
                "uptime" : 85,
                "optime" : {
                        "ts" : Timestamp(1683008514, 1),
                        "t" : NumberLong(1)
                },
"name" : "localhost:27021",
"health" : 1,
"state" : 2,
"stateStr" : "SECONDARY",
"uptime" : 85,
"optime" : {
        "ts" : Timestamp(1683008514, 1),
        "t" : NumberLong(1)
},
```

13) On cmd window of(client of 27018 main) Add the replica of main instance which is created on local host port 27019 in Cluster using rs.add() method.

rs.add("localhost:27019");

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```
testrep:PRIMARY> rs.add("localhost:27019");
{
        "ok" : 1,
        "$clusterTime" : {
                "clusterTime" : Timestamp(1683008827, 1),
                "signature" : {
                        "hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),
                        "keyId" : NumberLong(0)
                }
        },
        "operationTime" : Timestamp(1683008827, 1)
}
```

14) Now execute rs.status() command so we can see now in our cluster there are two instance one is primary and other is secondary.

```
testrep:PRIMARY> rs.status();
{
        "set" : "testrep",
        "date" : ISODate("2023-05-02T06:27:52.640Z"),
        "myState" : 1,
        "term" : NumberLong(1),
        "syncSourceHost" : "",
        "syncSourceId" : -1,
        "heartbeatIntervalMillis" : NumberLong(2000),
        "majorityVoteCount" : 2,
        "writeMajorityCount" : 2,
        "votingMembersCount" : 3,
        "writableVotingMembersCount" : 3,

      "name" : "localhost:27018",
      "health" : 1,
      "state" : 1,
      "stateStr" : "PRIMARY",
      "uptime" : 1077,
      "optime" : {
              "ts" : Timestamp(1683008864, 1),
              "t" : NumberLong(1)
      },
      "optimeDate" : ISODate("2023-05-02T06:27:44Z"),
      "syncSourceHost" : "",
      "syncSourceId" : -1,
      "infoMessage" : "",
      "electionTime" : Timestamp(1683007994, 2),
      "electionDate" : ISODate("2023-05-02T06:13:14Z"),
      "configVersion" : 3,
      "configTerm" : 1,
      "self" : true,
      "lastHeartbeatMessage" : ""
},
{
      "_id" : 1,
      "name" : "localhost:27021",
      "health" : 1,
      "state" : 2,
      "stateStr" : "SECONDARY",
      "uptime" : 432,
      "optime" : {
              "ts" : Timestamp(1683008864, 1),
              "t" : NumberLong(1)
      },
```

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