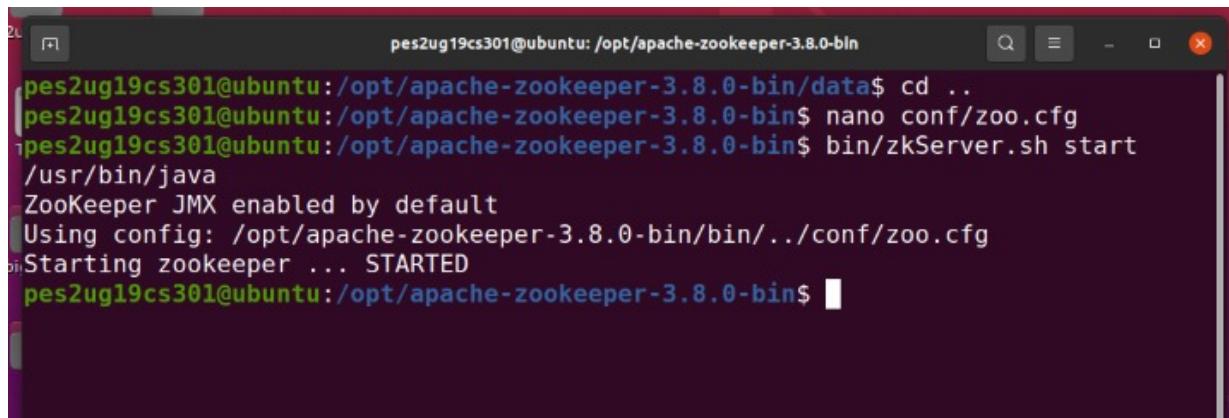


CLOUD ASSIGNMENT - 4

Introduction to Apache Zookeeper

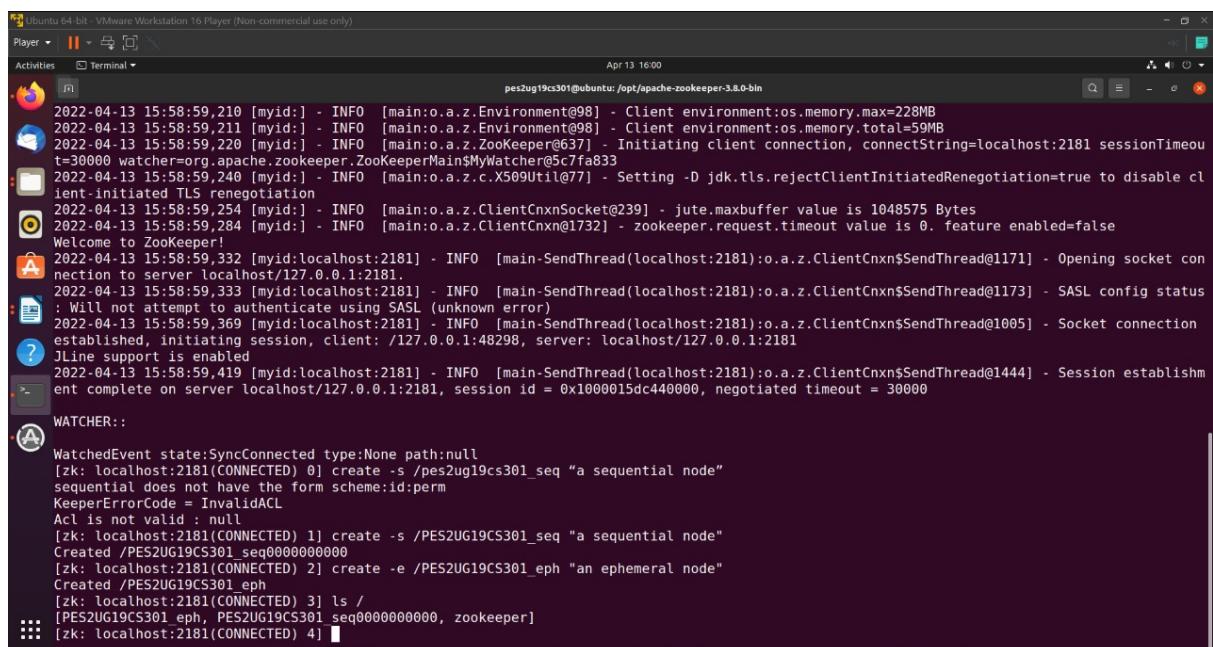
Name: Priya Mohata
SRN: PES2UG19CS301
Section: E

1a.jpeg



```
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin$ cd ..
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin$ nano conf/zoo.cfg
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin$ bin/zkServer.sh start
/usr/bin/java
ZooKeeper JMX enabled by default
Using config: /opt/apache-zookeeper-3.8.0-bin/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin$
```

2a.jpeg



```
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin
2022-04-13 15:58:59,210 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:os.memory.max=228MB
2022-04-13 15:58:59,211 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:os.memory.total=59MB
2022-04-13 15:58:59,220 [myid:] - INFO  [main:o.a.z.ZooKeeper@637] - Initiating client connection, connectString=localhost:2181 sessionTimeout=30000 watcher=org.apache.zookeeper.ZooKeeperMain$MyWatcher@5c7fa833
2022-04-13 15:58:59,240 [myid:] - INFO  [main:o.a.z.X509Util@77] - Setting -D jdk.tls.rejectClientInitiatedRenegotiation=true to disable client-initiated TLS renegotiation
2022-04-13 15:58:59,254 [myid:] - INFO  [main:o.a.z.ClientCnxnSocket@239] - jute.maxbuffer value is 1048575 Bytes
2022-04-13 15:58:59,284 [myid:] - INFO  [main:o.a.z.ClientCnxn@1732] - zookeeper.request.timeout value is 0. feature.enabled=false
Welcome to ZooKeeper!
2022-04-13 15:58:59,332 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1171] - Opening socket connection to server localhost/127.0.0.1:2181.
2022-04-13 15:58:59,333 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1173] - SASL config status : Will not attempt to authenticate using SASL (unknown error)
2022-04-13 15:58:59,369 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1005] - Socket connection established, initiating session, client: /127.0.0.1:48298, server: localhost/127.0.0.1:2181
JLine support is enabled
2022-04-13 15:58:59,419 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1444] - Session establishment complete on server localhost/127.0.0.1:2181, session id = 0x1000015dc440000, negotiated timeout = 30000
WATCHER::
```

WatchedEvent state:SyncConnected type:None path:null
[zk: localhost:2181(CONNECTED) 0] create -s /pes2ug19cs301_seq "a sequential node"
sequential does not have the form scheme:id:perm
KeeperErrorCode = InvalidACL
Acl is not valid : null
[zk: localhost:2181(CONNECTED) 1] create -s /PES2UG19CS301_seq0000000000
Created /PES2UG19CS301_seq0000000000
[zk: localhost:2181(CONNECTED) 2] create -e /PES2UG19CS301_eph "an ephemeral node"
Created /PES2UG19CS301_eph
[zk: localhost:2181(CONNECTED) 3] ls /
[PES2UG19CS301_eph, PES2UG19CS301_seq0000000000, zookeeper]
[zk: localhost:2181(CONNECTED) 4]

2b.jpeg

```
Ubuntu 64-bit - VMware Workstation 16 Player (Non-commercial use only)
Player Activities Terminal Apr 13 16:01
pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin

2022-04-13 16:01:28,893 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:java.compiler=<NA>
2022-04-13 16:01:28,893 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:os.name=Linux
2022-04-13 16:01:28,894 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:os.arch=amd64
2022-04-13 16:01:28,894 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:os.version=5.11.0-41-generic
2022-04-13 16:01:28,894 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:user.name=pes2ug19cs301
2022-04-13 16:01:28,895 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:user.home=/home/pes2ug19cs301
2022-04-13 16:01:28,895 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:user.dir=/opt/apache-zookeeper-3.8.0-bin
2022-04-13 16:01:28,896 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:os.memory.free=46MB
2022-04-13 16:01:28,897 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:os.memory.max=228MB
2022-04-13 16:01:28,898 [myid:] - INFO  [main:o.a.z.Environment@98] - Client environment:os.memory.total=59MB
2022-04-13 16:01:28,911 [myid:] - INFO  [main:o.a.z.ZooKeeper@637] - Initiating client connection, connectString=localhost:2181 sessionTimeout=30000 watcher=org.apache.zookeeper.ZooKeeperMains$MyWatcher@5c7fa833
2022-04-13 16:01:28,923 [myid:] - INFO  [main:o.a.z.c.X509Util@77] - Setting -D jdk.tls.rejectClientInitiatedRenegotiation=true to disable client-initiated TLS renegotiation
2022-04-13 16:01:28,954 [myid:] - INFO  [main:o.a.z.ClientCnxnSocket@239] - jute.maxbuffer value is 1048575 Bytes
2022-04-13 16:01:28,985 [myid:] - INFO  [main:o.a.z.ClientCnxn@1732] - zookeeper.request.timeout value is 0. feature.enabled=false
Welcome to ZooKeeper!
2022-04-13 16:01:29,031 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1171] - Opening socket connection to server localhost/127.0.0.1:2181.
2022-04-13 16:01:29,031 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1173] - SASL config status : Will not attempt to authenticate using SASL (unknown error)
2022-04-13 16:01:29,092 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1005] - Socket connection established, initiating session, client: /127.0.0.1:48300, server: localhost/127.0.0.1:2181
JLine support is enabled
2022-04-13 16:01:29,128 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1444] - Session establishment complete on server localhost/127.0.0.1:2181, session id = 0x1000015dc440001, negotiated timeout = 30000

WATCHER::

WatchedEvent state:SyncConnected type:None path:null
[zk: localhost:2181(CONNECTED) 0] ls /
[PES2UG19CS301 seq0000000000, zookeeper]
[zk: localhost:2181(CONNECTED) 1] ■
```

2c.jpeg

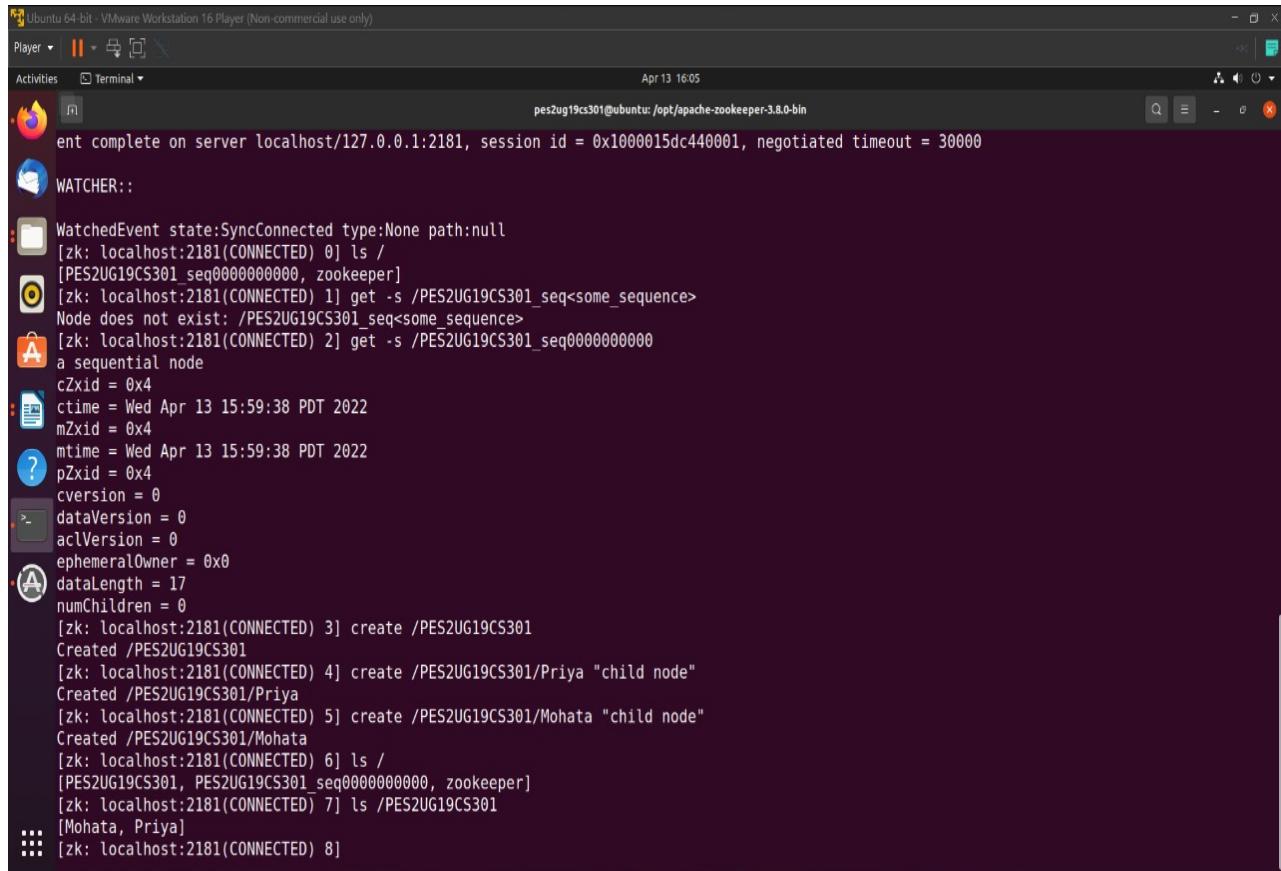
```
Ubuntu 64-bit - VMware Workstation 16 Player (Non-commercial use only)
Player Activities Terminal Apr 13 16:03
pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin

2022-04-13 16:01:28,985 [myid:] - INFO  [main:o.a.z.ClientCnxn@1732] - zookeeper.request.timeout value is 0. feature.enabled=false
Welcome to ZooKeeper!
2022-04-13 16:01:29,031 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1171] - Opening socket connection to server localhost/127.0.0.1:2181.
2022-04-13 16:01:29,031 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1173] - SASL config status : Will not attempt to authenticate using SASL (unknown error)
2022-04-13 16:01:29,092 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1005] - Socket connection established, initiating session, client: /127.0.0.1:48300, server: localhost/127.0.0.1:2181
JLine support is enabled
2022-04-13 16:01:29,128 [myid:localhost:2181] - INFO  [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1444] - Session establishment complete on server localhost/127.0.0.1:2181, session id = 0x1000015dc440001, negotiated timeout = 30000

WATCHER::

WatchedEvent state:SyncConnected type:None path:null
[zk: localhost:2181(CONNECTED) 0] ls /
[PES2UG19CS301 seq0000000000, zookeeper]
[zk: localhost:2181(CONNECTED) 1] get -s /PES2UG19CS301_seq<some_sequence>
Node does not exist: /PES2UG19CS301_seq<some sequence>
[zk: localhost:2181(CONNECTED) 2] get -s /PES2UG19CS301_seq0000000000
a sequential node
cZxid = 0x4
ctime = Wed Apr 13 15:59:38 PDT 2022
mZxid = 0x4
mtime = Wed Apr 13 15:59:38 PDT 2022
pZxid = 0x4
cversion = 0
dataVersion = 0
aclVersion = 0
ephemeralOwner = 0x0
dataLength = 17
numChildren = 0
[zk: localhost:2181(CONNECTED) 3] ■
```

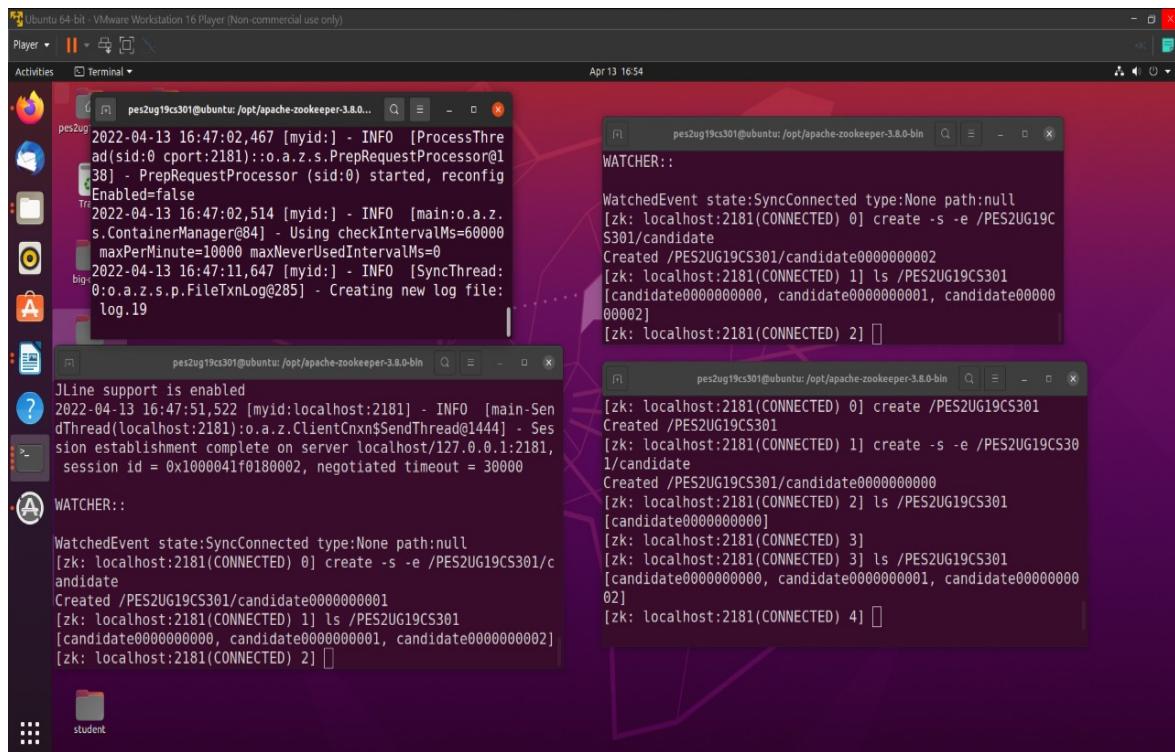
2d.jpeg



```
Ubuntu 64-bit - VMware Workstation 16 Player (Non-commercial use only)
Player Activities Terminal Apr 13 16:05
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin

ent complete on server localhost/127.0.0.1:2181, session id = 0x1000015dc440001, negotiated timeout = 30000
WATCHER:::
WatchedEvent state:SyncConnected type:None path:null
[zk: localhost:2181(CONNECTED) 0] ls /
[PES2UG19CS301 seq000000000, zookeeper]
[zk: localhost:2181(CONNECTED) 1] get -s /PES2UG19CS301_seq<some_sequence>
Node does not exist: /PES2UG19CS301_seq<some_sequence>
[zk: localhost:2181(CONNECTED) 2] get -s /PES2UG19CS301_seq000000000
a sequential node
cZxid = 0x4
ctime = Wed Apr 13 15:59:38 PDT 2022
mZxid = 0x4
mtime = Wed Apr 13 15:59:38 PDT 2022
pZxid = 0x4
cversion = 0
dataVersion = 0
aclVersion = 0
ephemeralOwner = 0x0
dataLength = 17
numChildren = 0
[zk: localhost:2181(CONNECTED) 3] create /PES2UG19CS301
Created /PES2UG19CS301
[zk: localhost:2181(CONNECTED) 4] create /PES2UG19CS301/Priya "child node"
Created /PES2UG19CS301/Priya
[zk: localhost:2181(CONNECTED) 5] create /PES2UG19CS301/Mohata "child node"
Created /PES2UG19CS301/Mohata
[zk: localhost:2181(CONNECTED) 6] ls /
[PES2UG19CS301, PES2UG19CS301_seq000000000, zookeeper]
[zk: localhost:2181(CONNECTED) 7] ls /PES2UG19CS301
[Mohata, Priya]
[zk: localhost:2181(CONNECTED) 8]
```

3a.jpeg



```
Ubuntu 64-bit - VMware Workstation 16 Player (Non-commercial use only)
Player Activities Terminal Apr 13 16:54
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin

2022-04-13 16:47:02,467 [myid:] - INFO  [ProcessThread-ad(sid:0 cport:2181):o.a.z.s.PrePRequestProcessor@138] - PrepRequestProcessor (sid:0) started, reconfig
Enabled=false
2022-04-13 16:47:02,514 [myid:] - INFO  [main:o.a.z.s.ContainerManager@84] - Using checkIntervalMs=60000
maxPerMinute=10000 maxNeverUsedIntervalMs=0
2022-04-13 16:47:11,647 [myid:] - INFO  [SyncThread:0:o.a.z.s.p.FileTxnLog@285] - Creating new log file:
log.19
JLine support is enabled
2022-04-13 16:47:51,522 [myid:localhost:2181] - INFO  [main-SendThread@localhost:2181:o.a.z.ClientCnxn$SendThread@1444] - Session establishment complete on server localhost/127.0.0.1:2181, session id = 0x1000041f0180002, negotiated timeout = 30000
WATCHER:::
WatchedEvent state:SyncConnected type:None path:null
[zk: localhost:2181(CONNECTED) 0] create -s -e /PES2UG19CS301/candidate
Created /PES2UG19CS301/candidate000000000
[zk: localhost:2181(CONNECTED) 1] ls /PES2UG19CS301
[candidate000000000, candidate000000001, candidate000000002]
[zk: localhost:2181(CONNECTED) 2] 
```

```
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin

WATCHER:::
WatchedEvent state:SyncConnected type:None path:null
[zk: localhost:2181(CONNECTED) 0] create -s -e /PES2UG19CS301/candidate
Created /PES2UG19CS301/candidate000000000
[zk: localhost:2181(CONNECTED) 1] ls /PES2UG19CS301
[candidate000000000, candidate000000001, candidate000000002]
[zk: localhost:2181(CONNECTED) 2] 
```

```
pes2ug19cs301@ubuntu:/opt/apache-zookeeper-3.8.0-bin

[zk: localhost:2181(CONNECTED) 0] create /PES2UG19CS301
Created /PES2UG19CS301
[zk: localhost:2181(CONNECTED) 1] create -s -e /PES2UG19CS301/candidate
Created /PES2UG19CS301/candidate000000000
[zk: localhost:2181(CONNECTED) 2] ls /PES2UG19CS301
[candidate000000000, candidate000000001, candidate000000002]
[zk: localhost:2181(CONNECTED) 3] ls /PES2UG19CS301
[candidate000000000, candidate000000001, candidate000000002]
[zk: localhost:2181(CONNECTED) 4] 
```

3b.jpeg

Ubuntu 64-bit - VMware Workstation 16 Player (Non-commercial use only)

Activities Terminal April 13 17:04

pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0... [pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0...]

```
2022-04-13 16:47:02,467 [myid:] - INFO  [ProcessThread(sid:0 cport:2181)::o.a.z.s.PrepRequestProcessor@138] - PrepRequestProcessor (sid:0) started, reconfig Enabled=false
2022-04-13 16:47:02,514 [myid:] - INFO  [main:o.a.z.s.ContainerManager@84] - Using checkIntervalMs=60000 maxPerMinute=10000 maxNeverUsedIntervalMs=0
2022-04-13 16:47:11,647 [myid:] - INFO  [SyncThread:0:o.a.z.s.p.FileTxnLog@285] - Creating new log file: log.19
```

pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin [pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin]

```
[zk: localhost:2181(CONNECTED) 8] ls /PES2UG19CS301
[candidate0000000000, candidate0000000001, candidate0000000002]
[zk: localhost:2181(CONNECTED) 9] quit
```

WATCHER::

```
WatchedEvent state:Closed type:None path:null
2022-04-13 17:04:31,651 [myid:] - INFO  [main:o.a.z.ZooKeeper@1232] - Session: 0x1000041f0180005 closed
2022-04-13 17:04:31,651 [myid:] - INFO  [main-EventThread:o.a.z.ClientCnxn$EventThread@568] - EventThread shut down for session: 0x1000041f0180005
2022-04-13 17:04:31,654 [myid:] - ERROR [main:o.a.z.u.ServiceUtil@42] - Exiting JVM with code 0
pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin$
```

pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin [pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin]

```
mZxid = 0x2c
mtime = Wed Apr 13 17:02:52 PDT 2022
pZxid = 0x2c
cversion = 0
dataVersion = 0
aclVersion = 0
ephemeralOwner = 0x1000041f0180003
dataLength = 0
numChildren = 0
[zk: localhost:2181(CONNECTED) 3]
```

pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin [pes2ug19cs301@ubuntu: /opt/apache-zookeeper-3.8.0-bin]

```
pZxid = 0x2b
cversion = 0
dataVersion = 0
aclVersion = 0
ephemeralOwner = 0x1000041f0180005
dataLength = 0
numChildren = 0
[zk: localhost:2181(CONNECTED) 3]
WATCHER::
```

```
WatchedEvent state:SyncConnected type:NodeDeleted path:/PES2UG19CS301/candidate0000000000
```