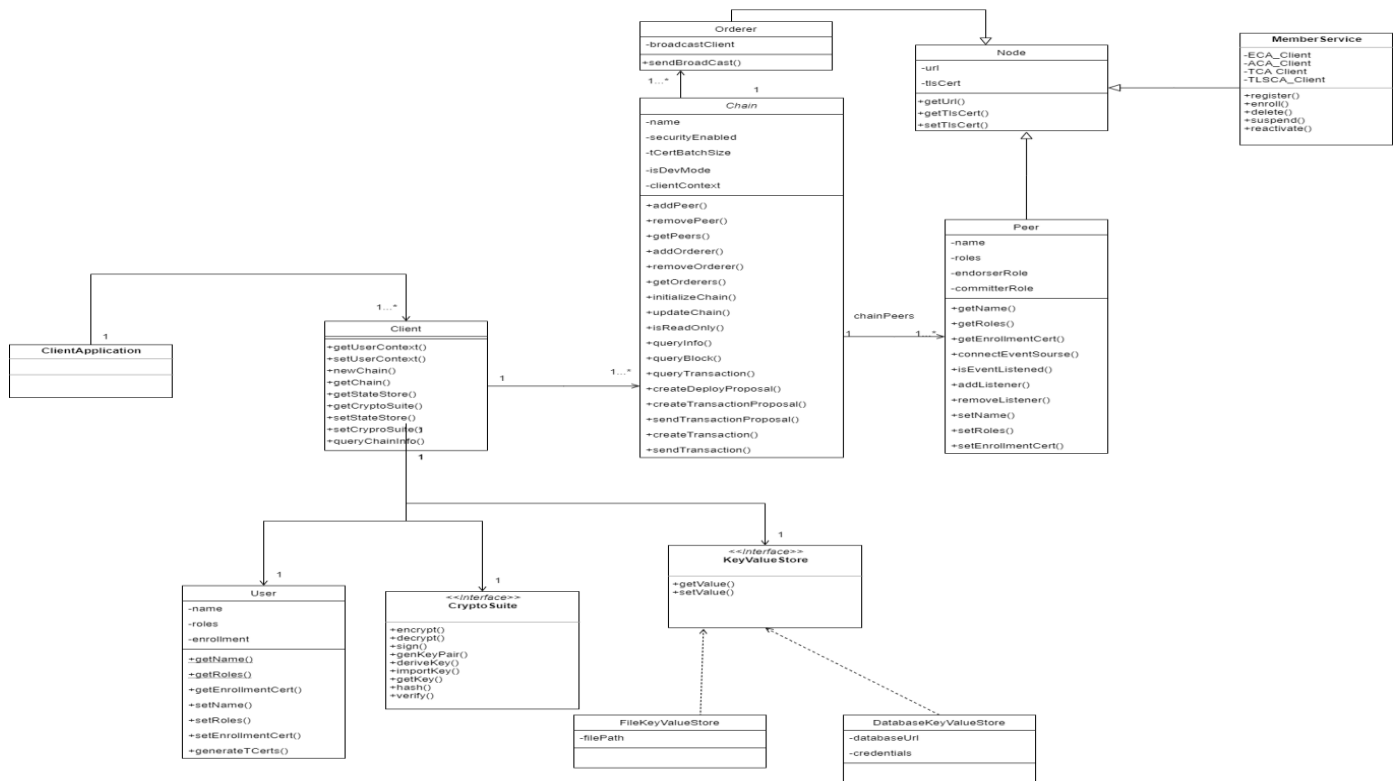# 수목관리 시스템 (+BlockChain3.0)

[WeekdaysIdea] 박지은 이재호
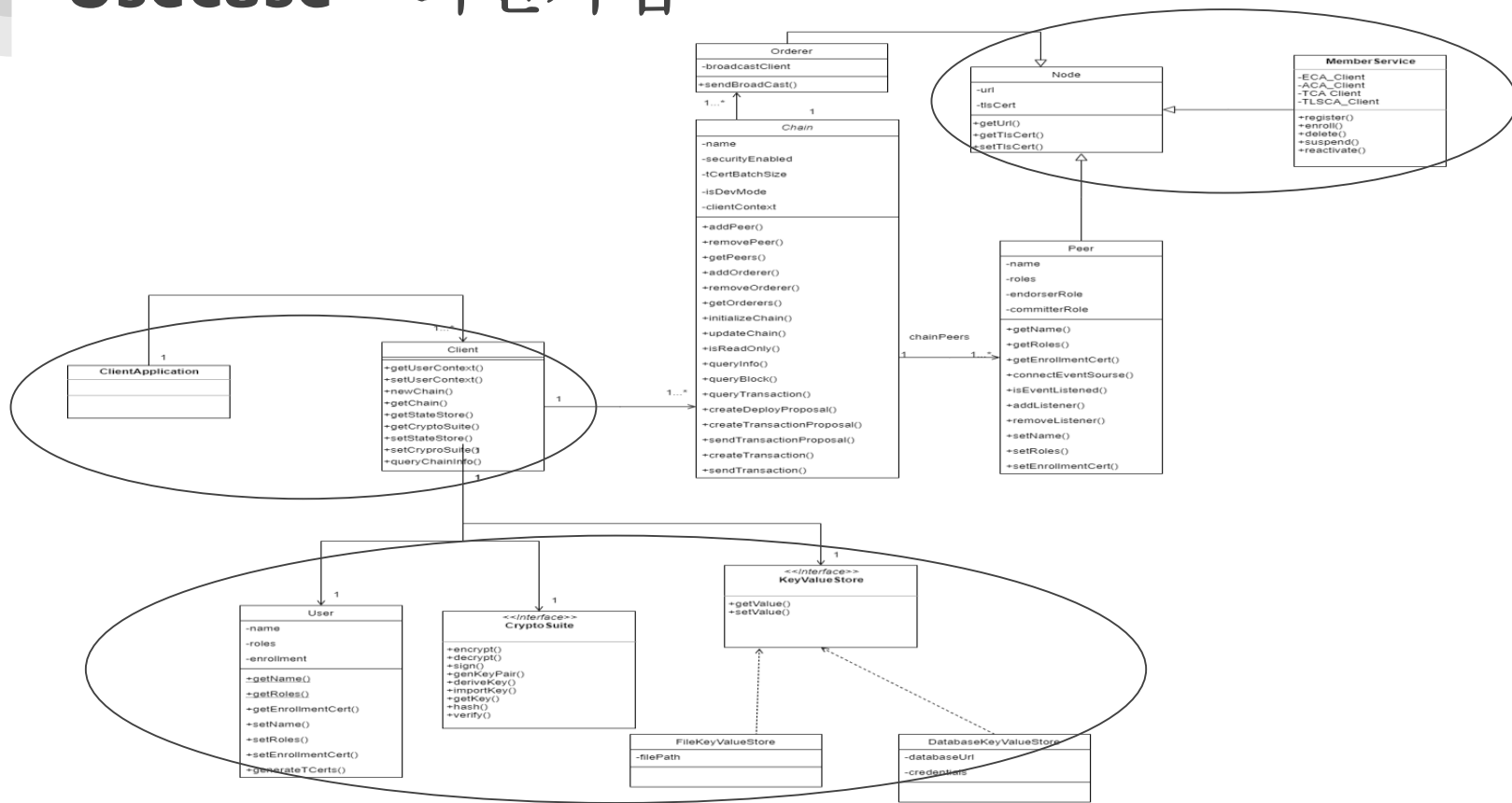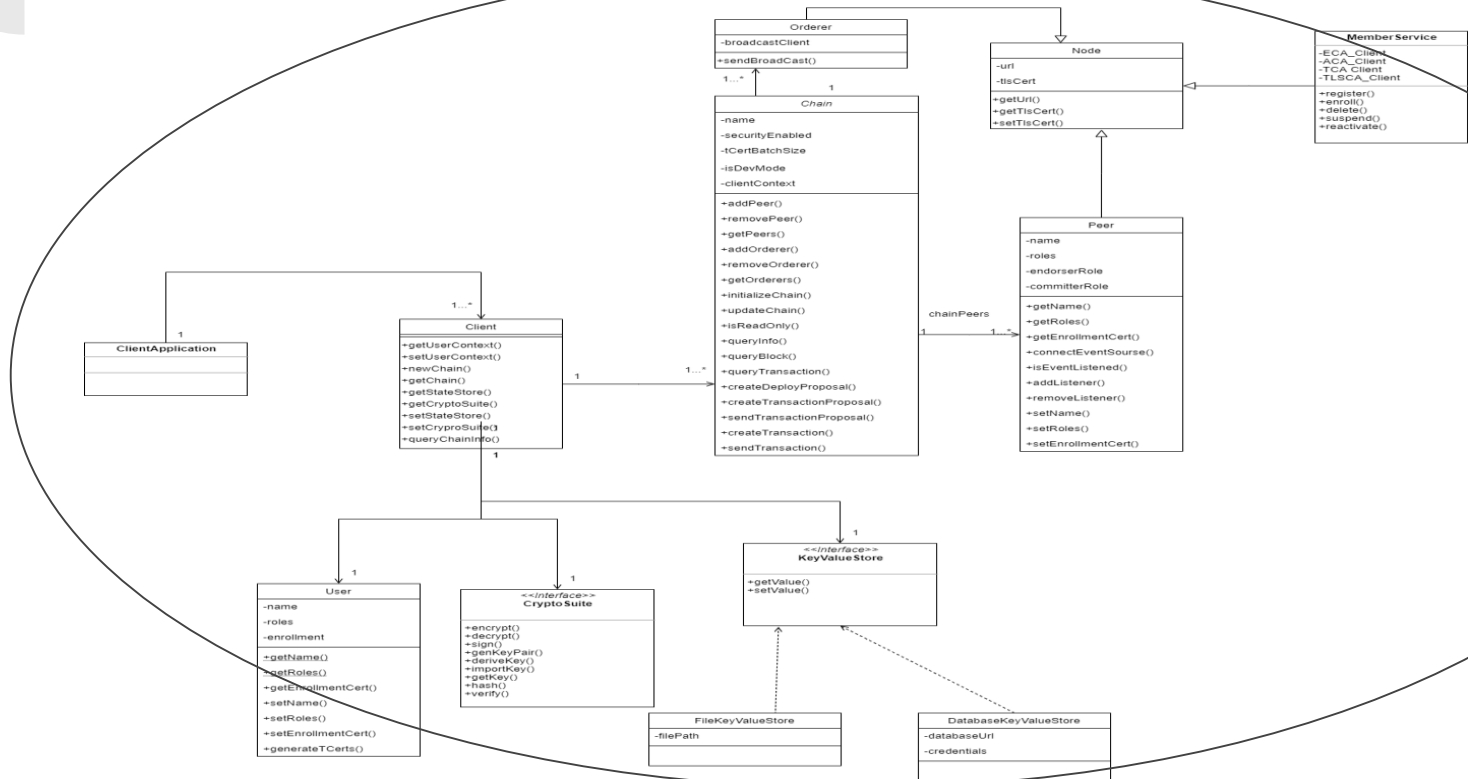
Class Diagram

Orderer
- -broadcastClient
- +sendBroadCast()

Node
- -url
- -tlsCert
- +getUrl()
- +getTlsCert()
- +setTlsCert()

Member Service
- -ECA_Client
- -ACA_Client
- -TCA Client
- -TLSCA_Client
- +register()
- +enroll()
- +delete()
- +suspend()
- +reactivate()

Chain
- -name
- -securityEnabled
- -tCertBatchSize
- -isDevMode
- -clientContext
- +addPeer()
- +removePeer()
- +getPeers()
- +addOrderer()
- +removeOrderer()
- +getOrderers()
- +initializeChain()
- +updateChain()
- +isReadOnly()
- +queryInfo()
- +queryBlock()
- +queryTransaction()
- +createDeployProposal()
- +createTransactionProposal()
- +sendTransactionProposal()
- +createTransaction()
- +sendTransaction()

Peer
- -name
- -roles
- -endorserRole
- -committerRole
- +getName()
- +getRoles()
- +getEnrollmentCert()
- +connectEventSourse()
- +isEventListened()
- +addListener()
- +removeListener()
- +setName()
- +setRoles()
- +setEnrollmentCert()

ClientApplication

Client
- +getUserContext()
- +setUserContext()
- +newChain()
- +getChain()
- +getStateStore()
- +getCryptoSuite()
- +setStateStore()
- +setCryproSuite()
- +queryChainInfo()

chainPeers

User
- -name
- -roles
- -enrollment
- +getName()
- +getRoles()
- +getEnrollmentCert()
- +setName()
- +setRoles()
- +setEnrollmentCert()
- +generateTCerts()

<<Interface>> Crypto Suite
- +encrypt()
- +decrypt()
- +sign()
- +genKeyPair()
- +deriveKey()
- +importKey()
- +getKey()
- +hash()
- +verify()

<<Interface>> KeyValueStore
- +getValue()
- +setValue()

FileKeyValueStore
- -filePath

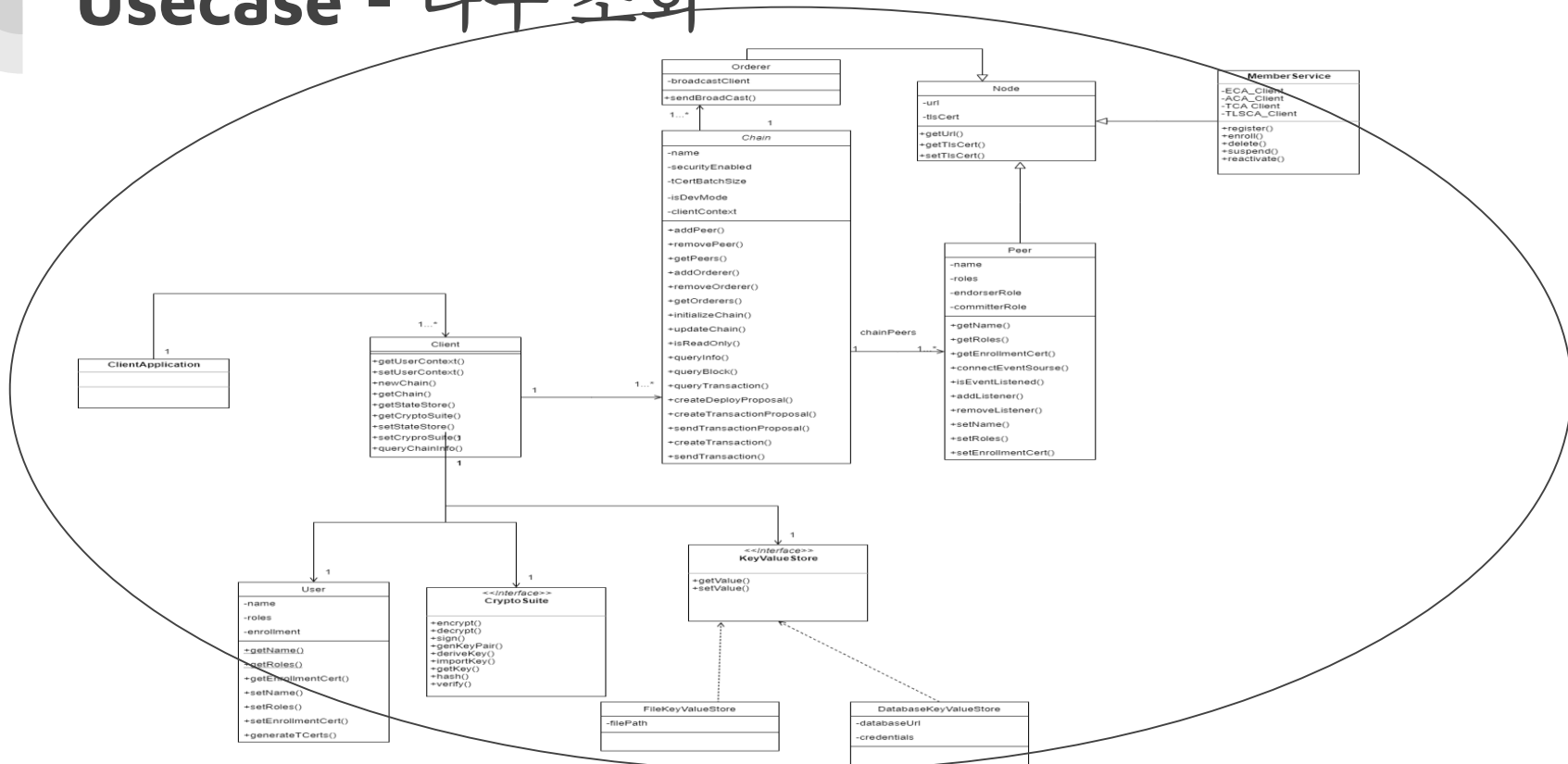**DatabaseKeyValueStore**
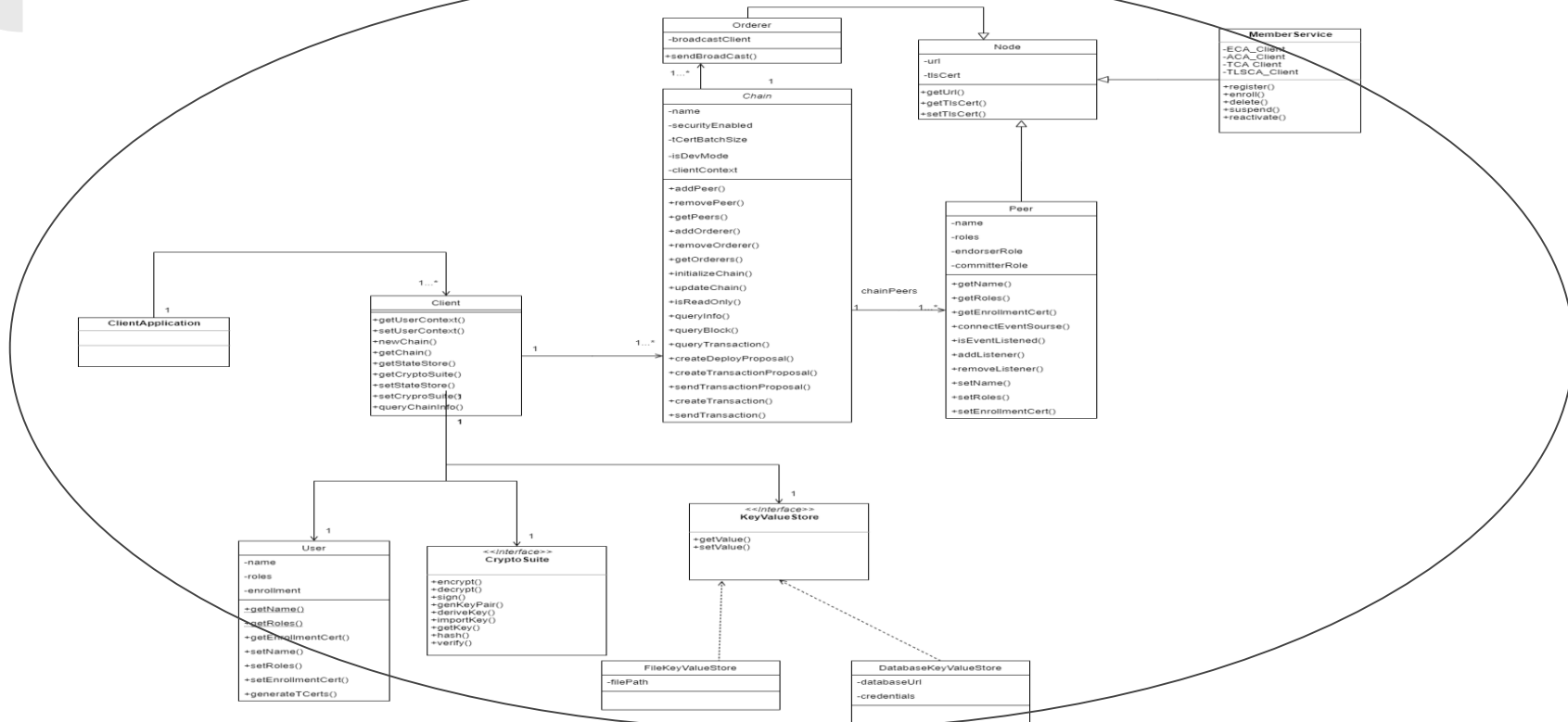- -databaseUrl
- -credentials

Usecase - 회원가입

Usecase - 내 나무 관리
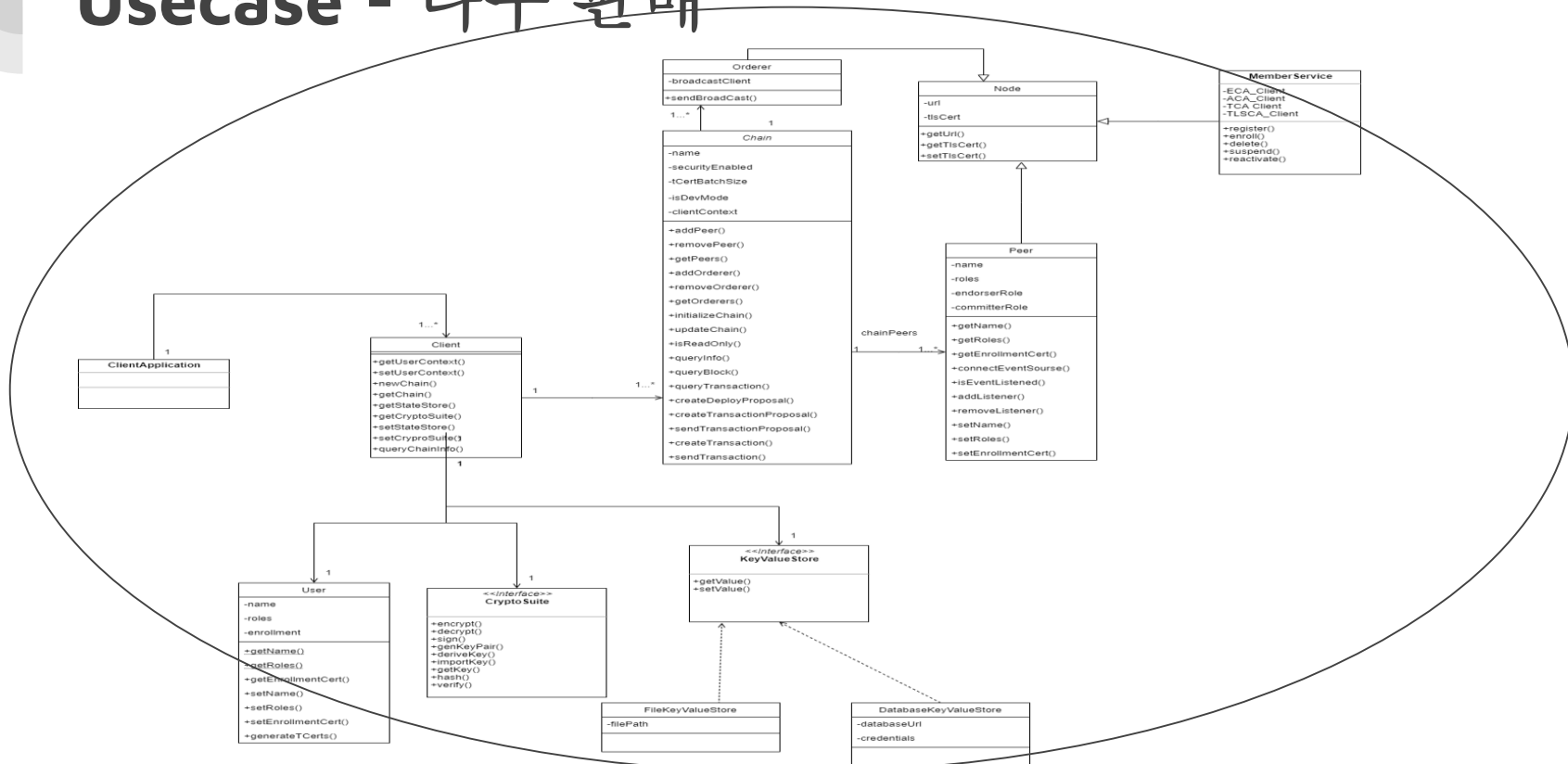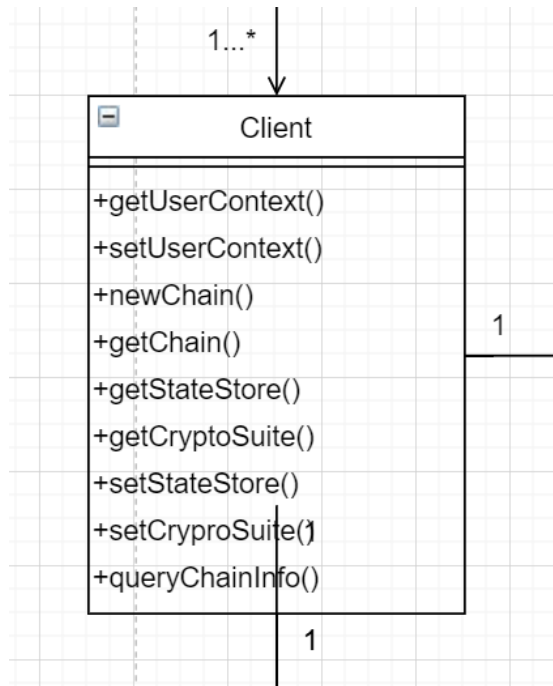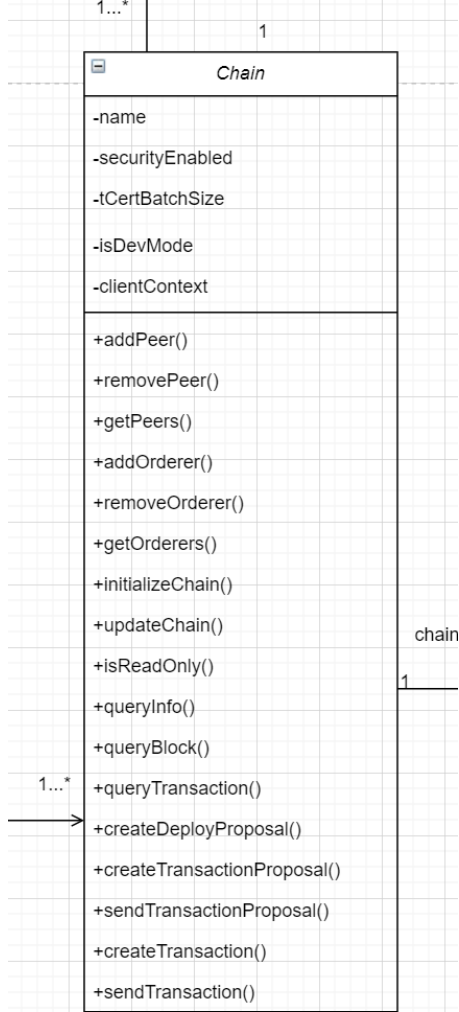
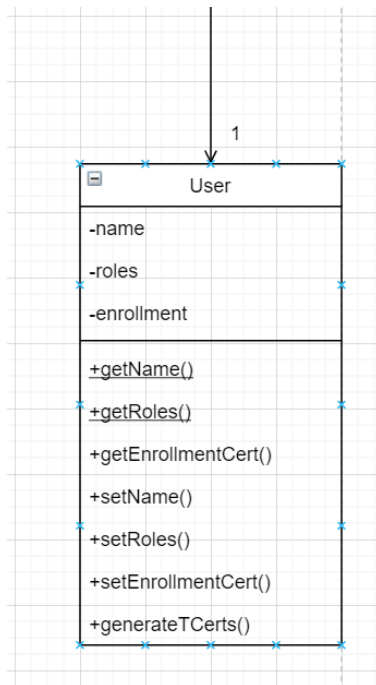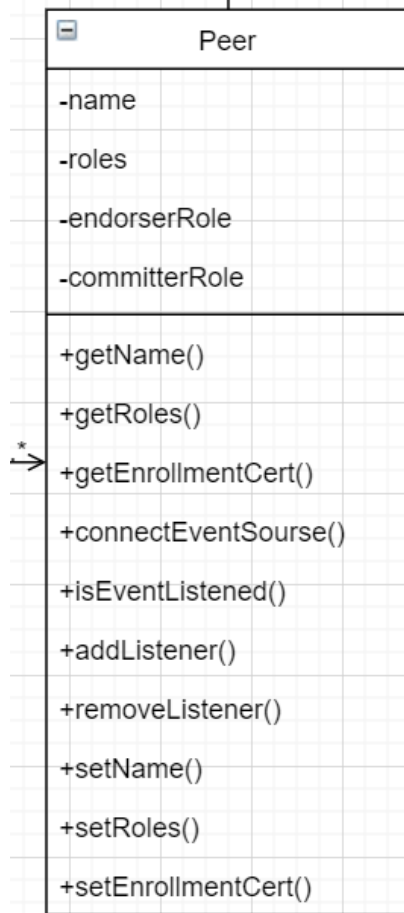# Usecase - 나무 조회

Usecase - 나무 진료

Usecase - 나무 판매

Client

1...*

Client
+getUserContext()
+setUserContext()
+newChain()
+getChain()
+getStateStore()
+getCryptoSuite()
+setStateStore()
+setCryproSuite()
+queryChainInfo()

1

1

1

Chain

⊟	*Chain*

-name

-securityEnabled

-tCertBatchSize

-isDevMode

-clientContext

+addPeer()

+removePeer()

+getPeers()

+addOrderer()

+removeOrderer()

+getOrderers()

+initializeChain()

+updateChain()

+isReadOnly()

+queryInfo()

+queryBlock()

+queryTransaction()

+createDeployProposal()

+createTransactionProposal()

+sendTransactionProposal()

+createTransaction()

+sendTransaction()

1...*

1

chain

1

1...*

User

Peer

Peer
-name
-roles
-endorserRole
-committerRole
+getName()
+getRoles()
+getEnrollmentCert()
+connectEventSourse()
+isEventListened()
+addListener()
+removeListener()
+setName()
+setRoles()
+setEnrollmentCert()

KeyValueStore

CryptoSuite

<<*Interface*>>
CryptoSuite

1

+encrypt()
+decrypt()
+sign()
+genKeyPair()
+deriveKey()
+importKey()
+getKey()
+hash()
+verify()

Node

MemberService

MemberService

-ECA_Client
-ACA_Client
-TCA Client
-TLSCA_Client
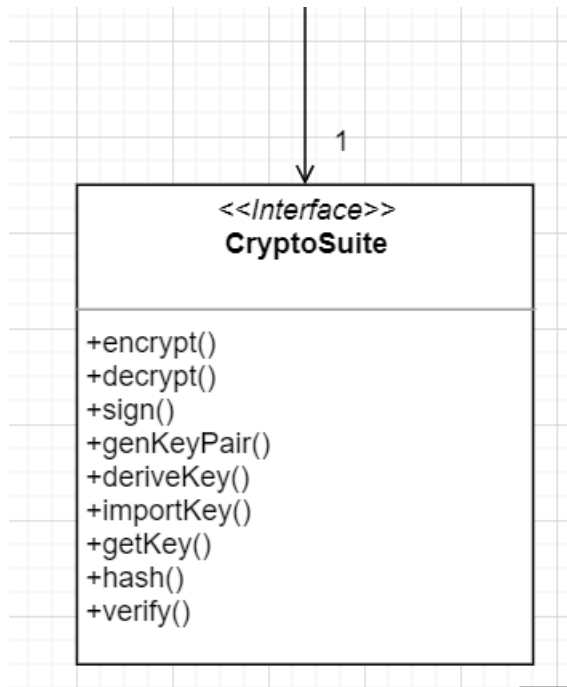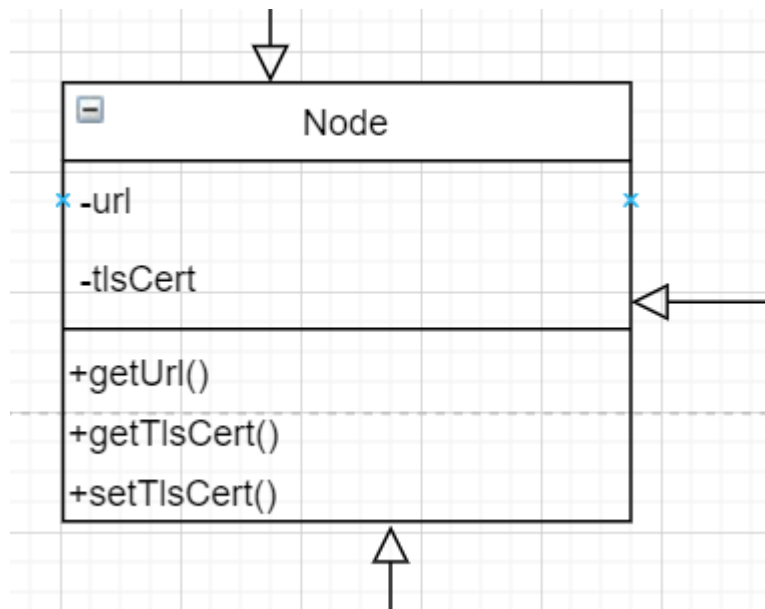
+register()
+enroll()
+delete()
+suspend()
+reactivate()
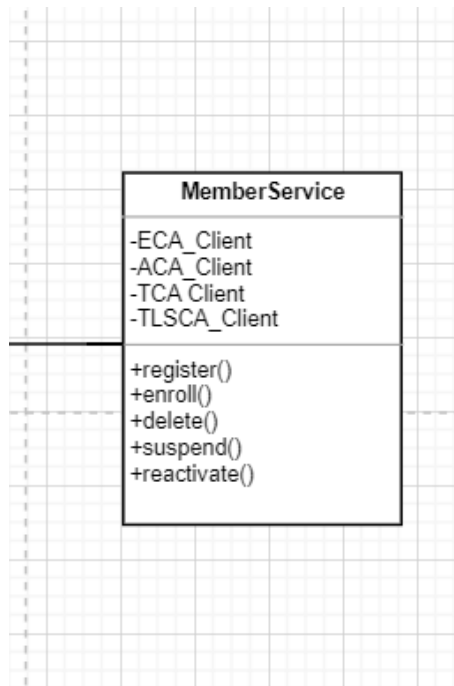
ClientApplication

Orderer Class