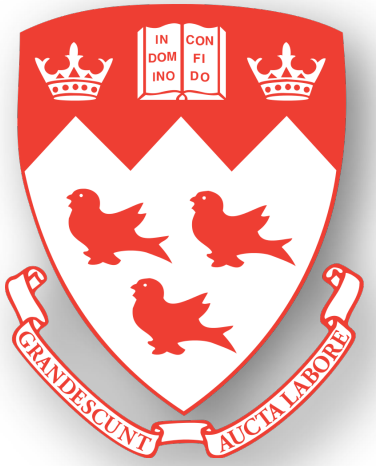
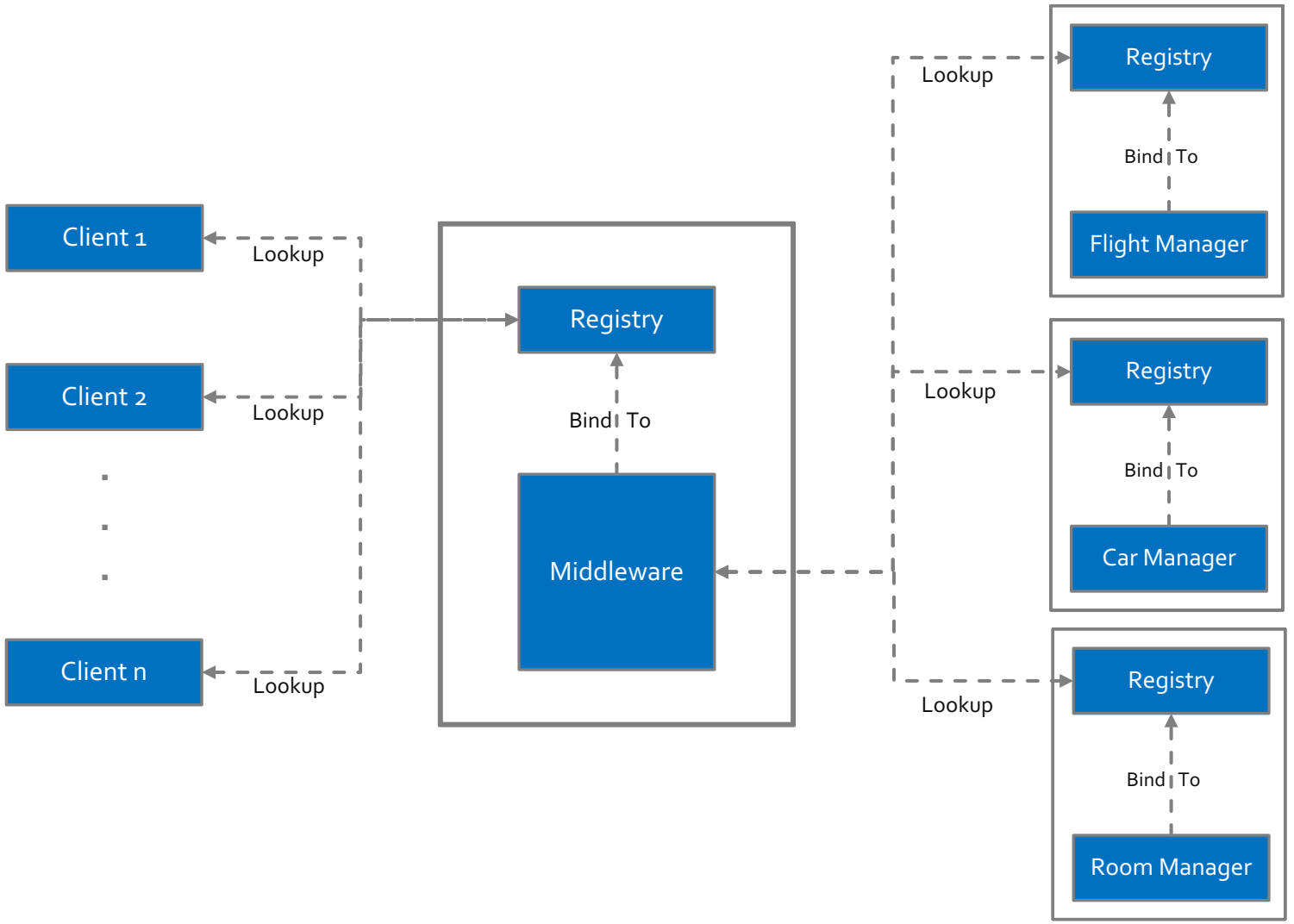


COMPONENT – BASED DISTRIBUTED INFORMATION SYSTEM

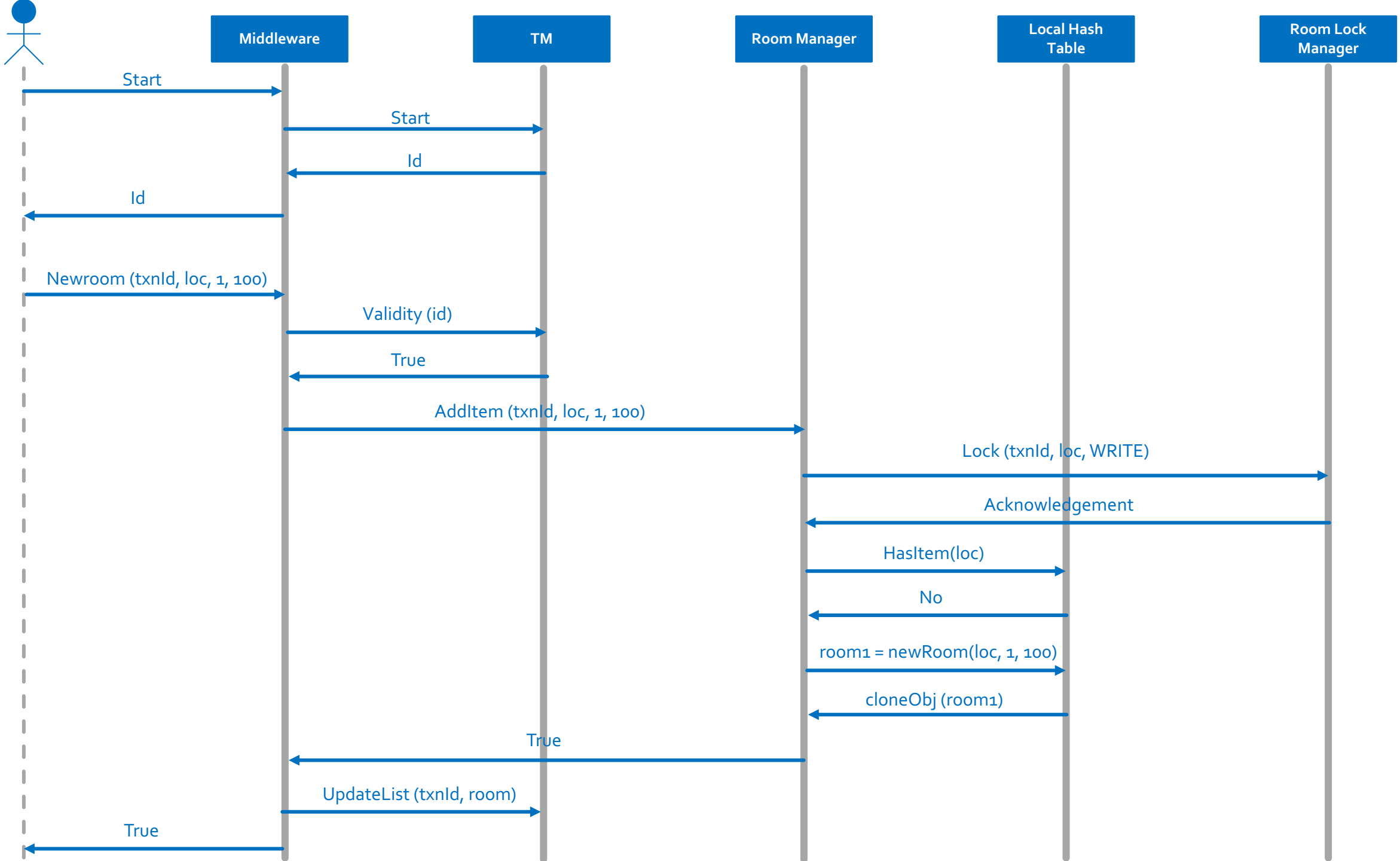
Akash Singh

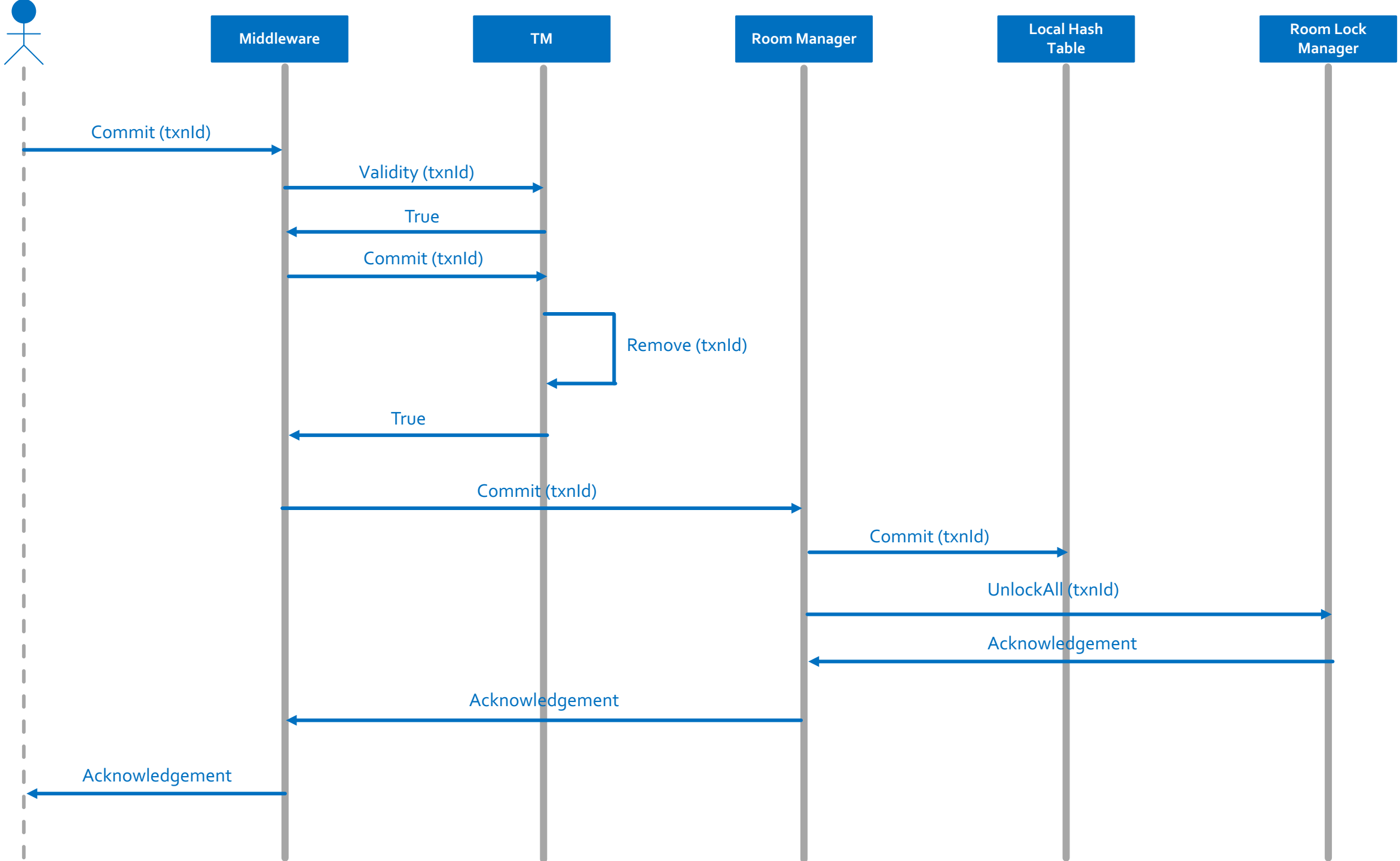
Nirmal Kanagasabai

ARCHITECTURE

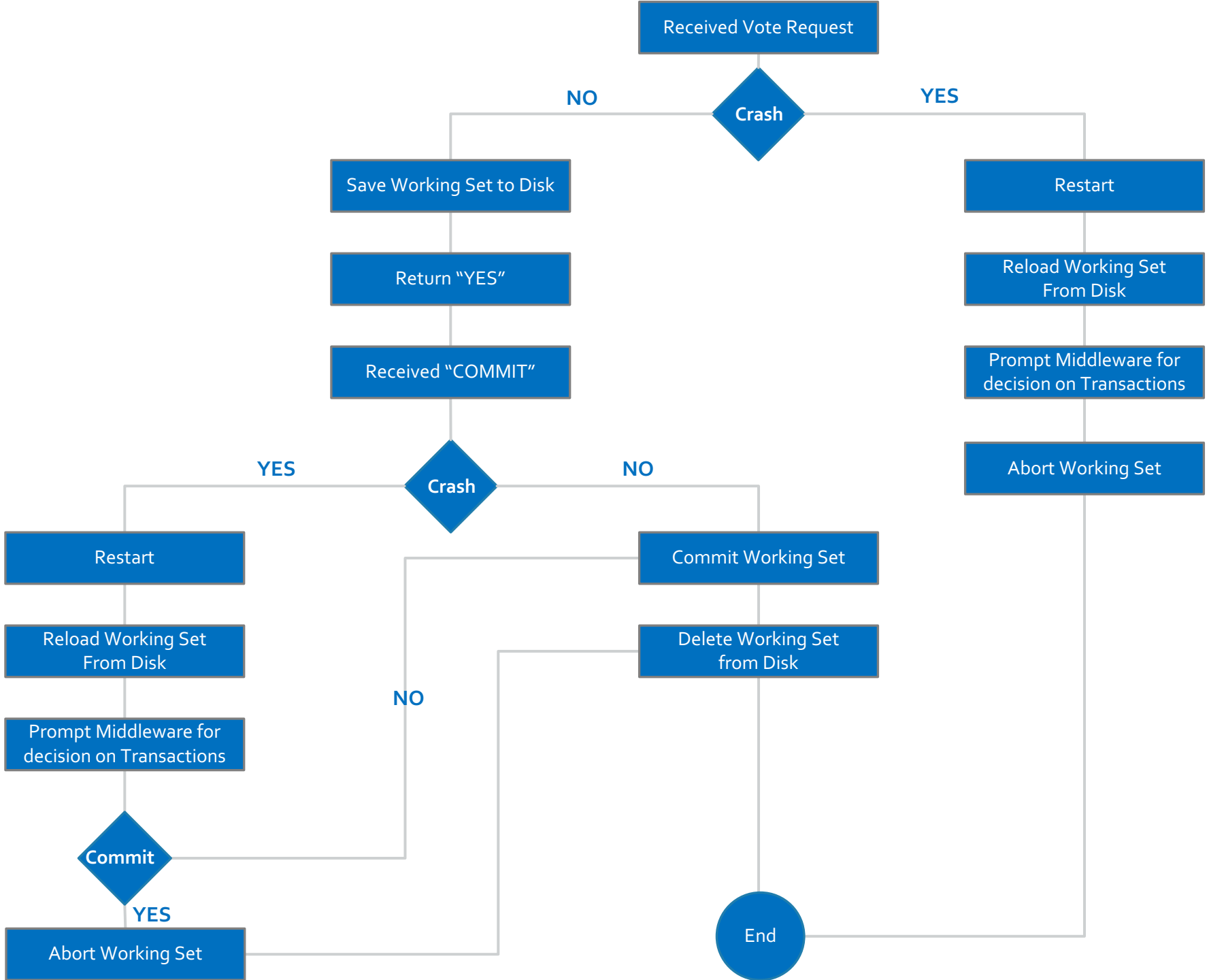


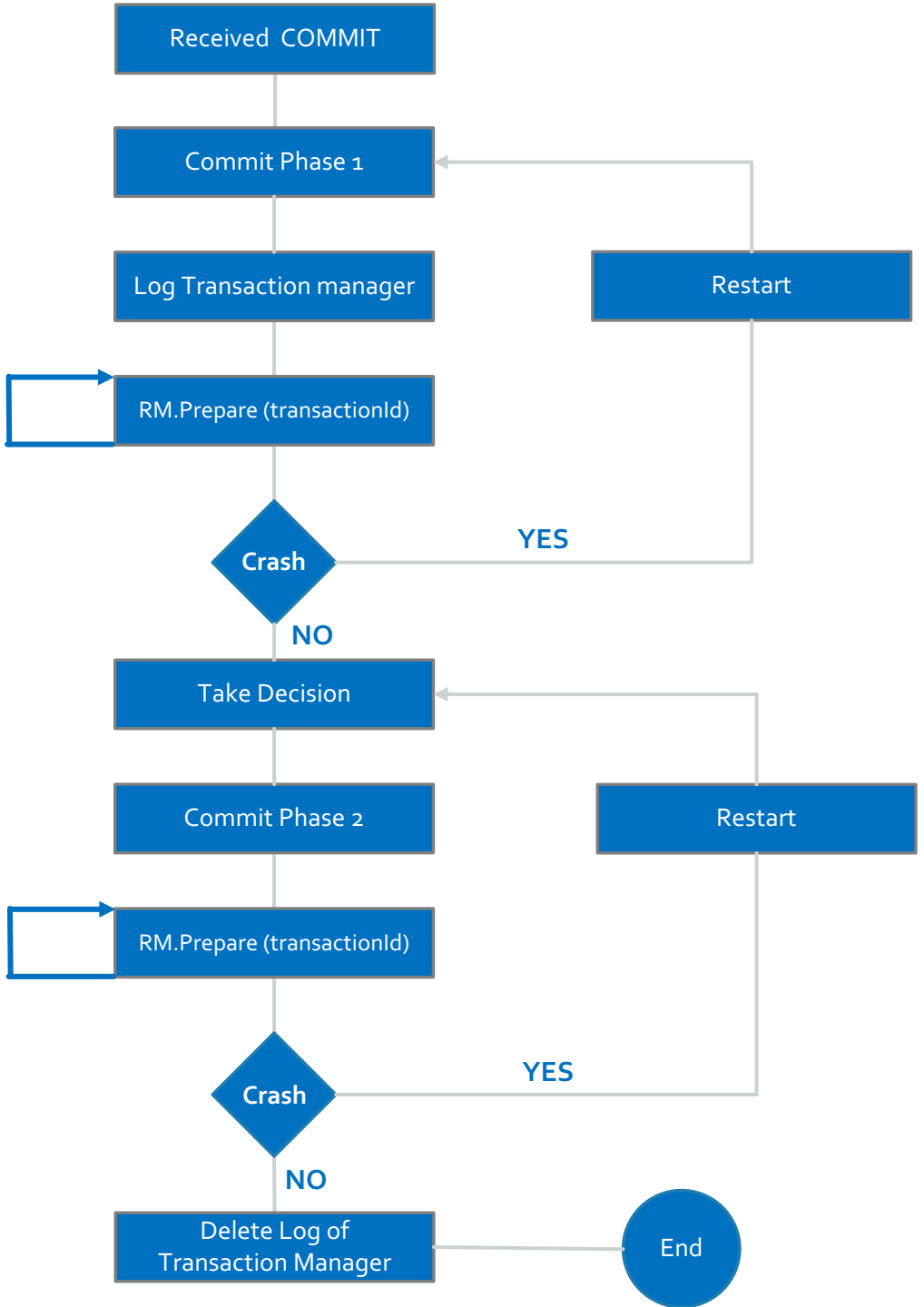
ACTIVITY DIAGRAMS


Middleware
TM
Room Manager
Local Hash Table
Room Lock Manager
Start
Start
Id
Id
Newroom (txnId, loc, 1, 100)
Validity (id)
True
AddItem (txnId, loc, 1, 100)
Lock (txnId, loc, WRITE)
Acknowledgement
HasItem(loc)
No
room1 = newRoom(loc, 1, 100)
cloneObj (room1)
True
UpdateList (txnId, room)
True


Middleware
TM
Room Manager
Local Hash Table
Room Lock Manager
Commit (txnId)
Validity (txnId)
True
Commit (txnId)
Remove (txnId)
True
Commit (txnId)
Commit (txnId)
UnlockAll (txnId)
Acknowledgement
Acknowledgement
Acknowledgement

2-PHASE COMMIT (RM & MIDDLEWARE VIEWS)

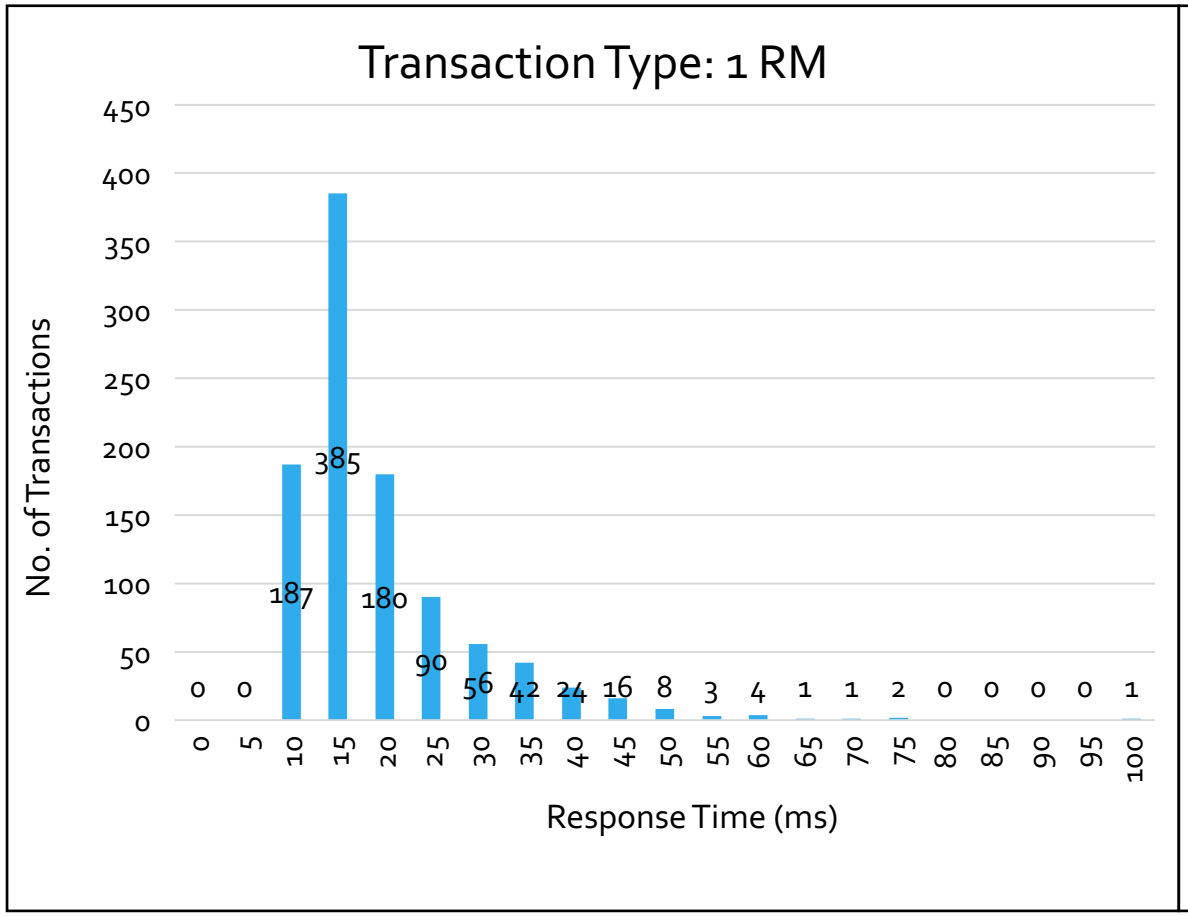

Received Vote Request
Crash
NO
YES
Save Working Set to Disk
Return "YES"
Received "COMMIT"
Crash
YES
NO
Restart
Reload Working Set From Disk
Prompt Middleware for decision on Transactions
Commit
YES
NO
Abort Working Set
Commit Working Set
Delete Working Set from Disk
End
Restart
Reload Working Set From Disk
Prompt Middleware for decision on Transactions
Abort Working Set

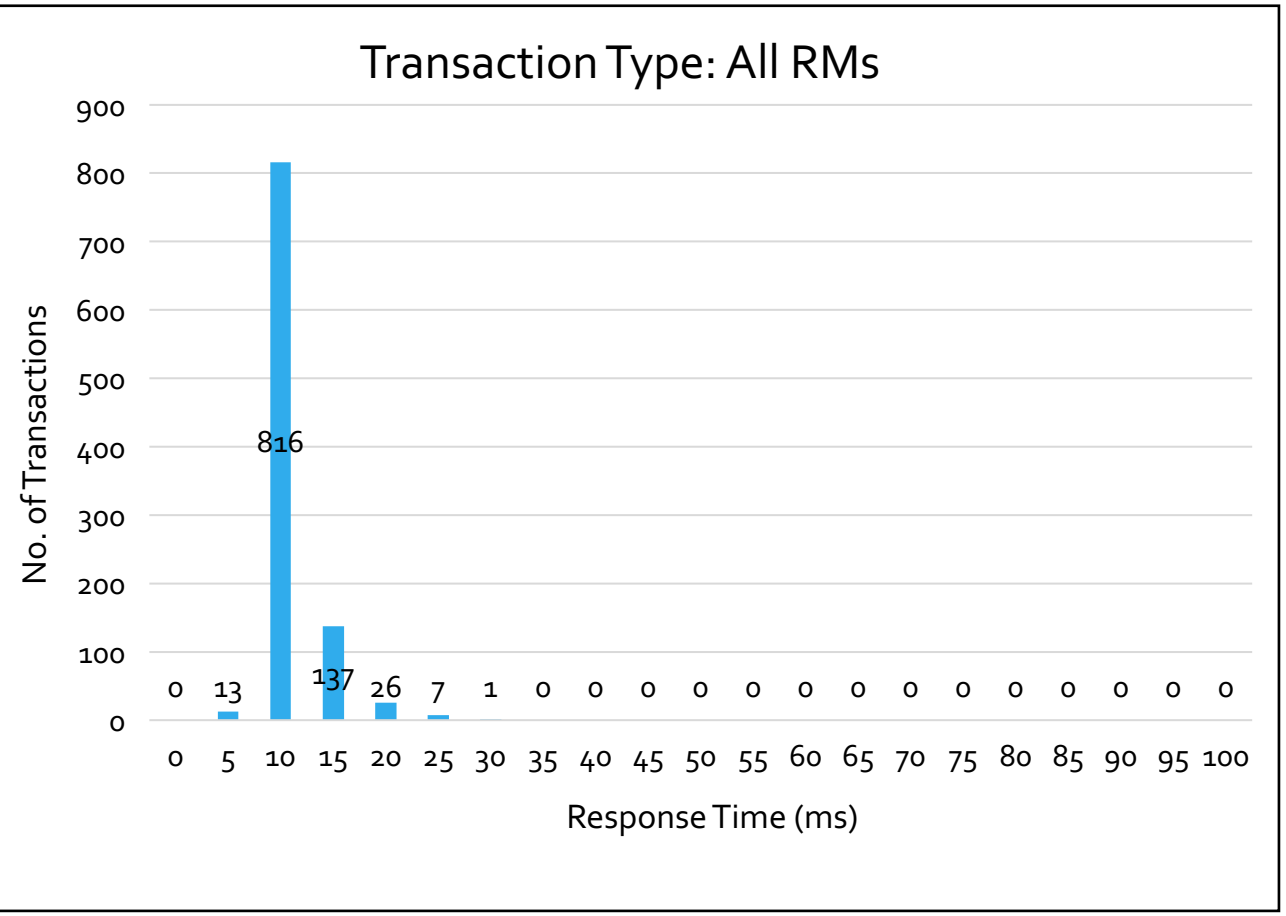
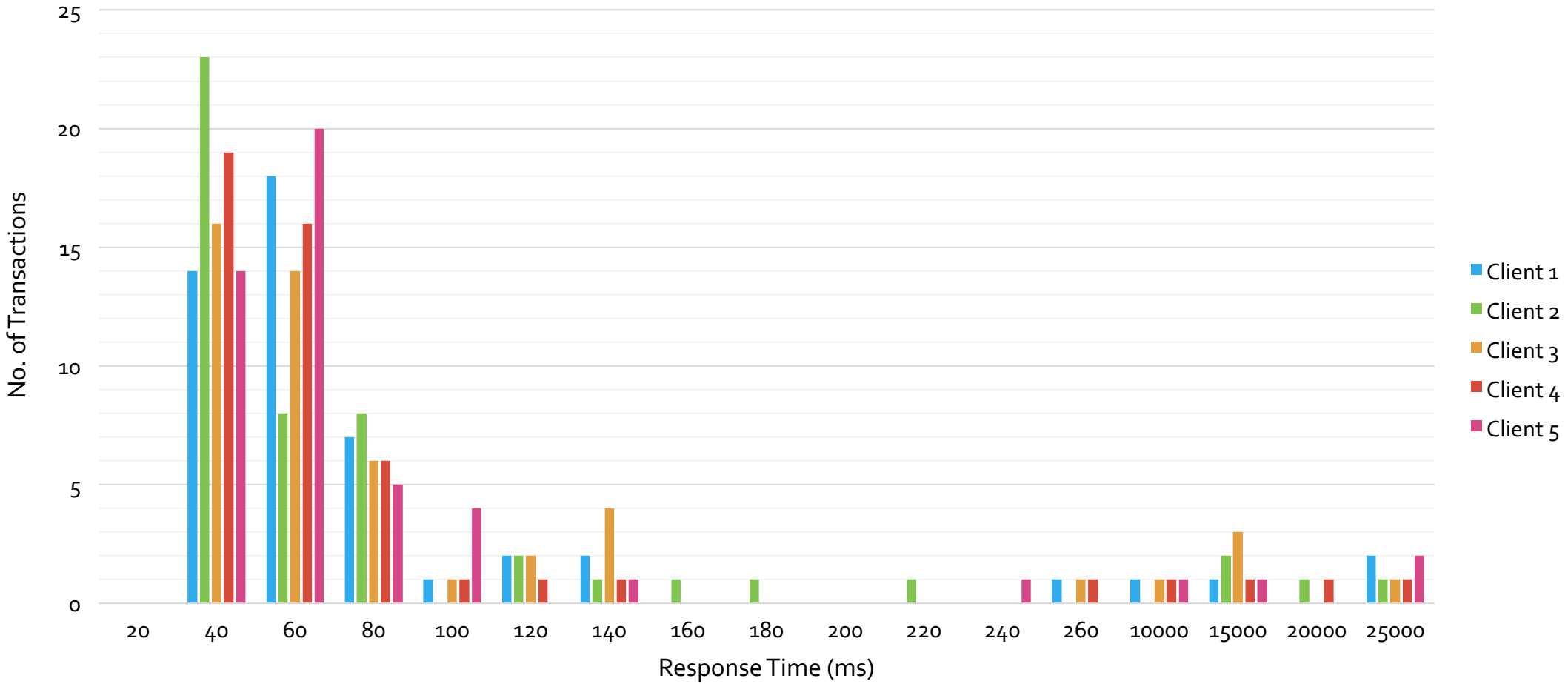

Received COMMIT
Commit Phase 1
Log Transaction manager
Restart
RM.Prepare (transactionId)
Crash
YES
NO
Take Decision
Commit Phase 2
Restart
RM.Prepare (transactionId)
Crash
YES
NO
Delete Log of Transaction Manager
End

PERFORMANCE ANALYSIS

- Single Client
  - 1 RM
  - All RMs
- Multiple Client
  - Client 1 to 5

SINGLE CLIENT TEST





MULTIPLE CLIENTS TEST