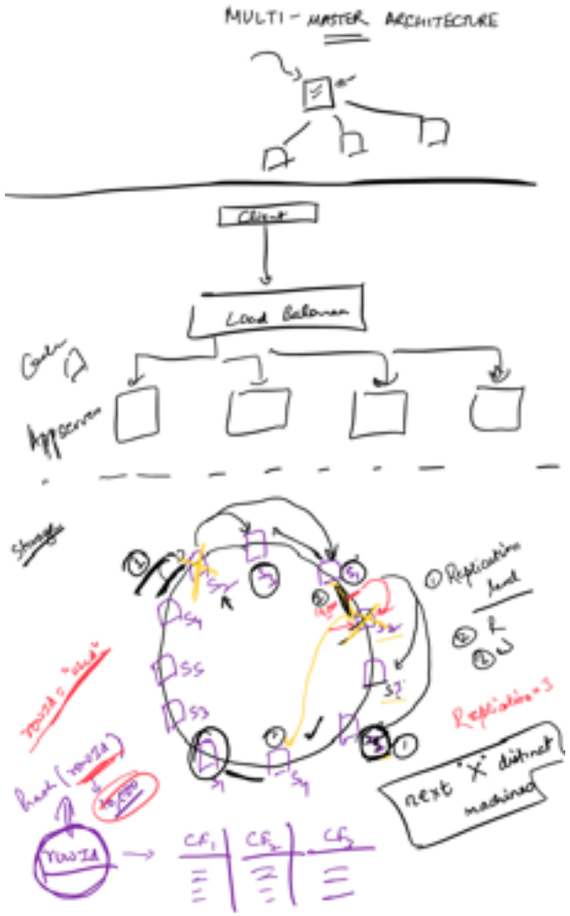
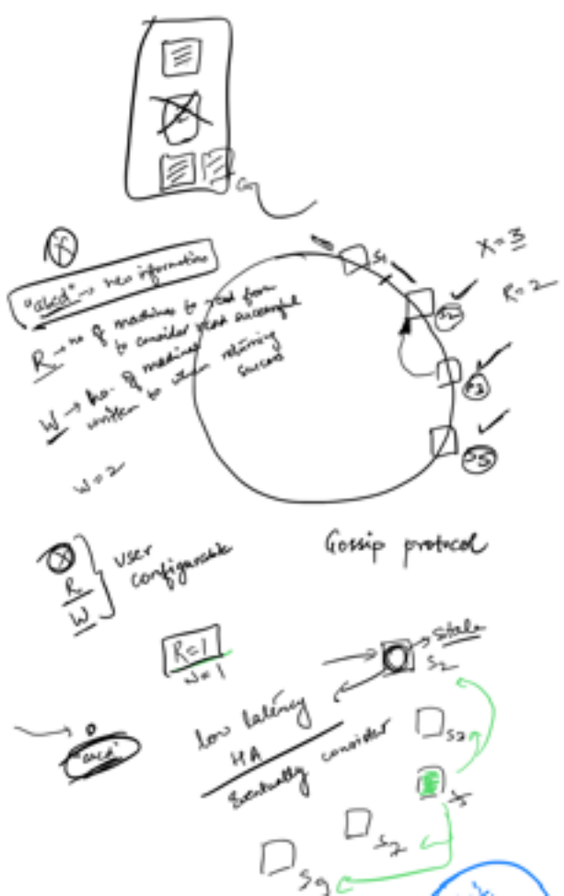
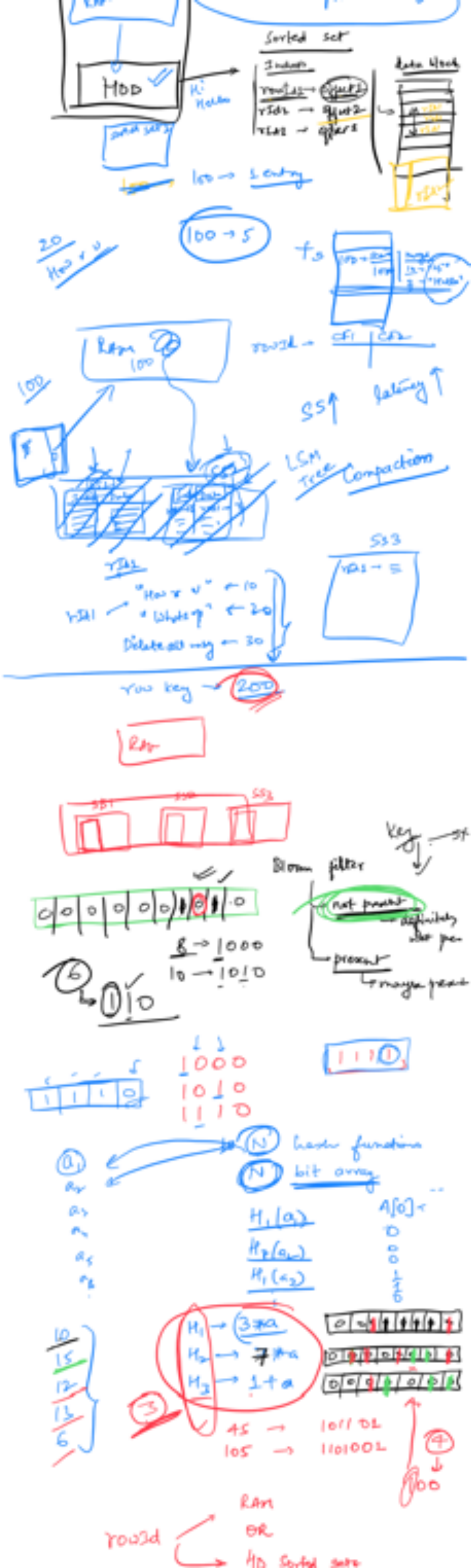
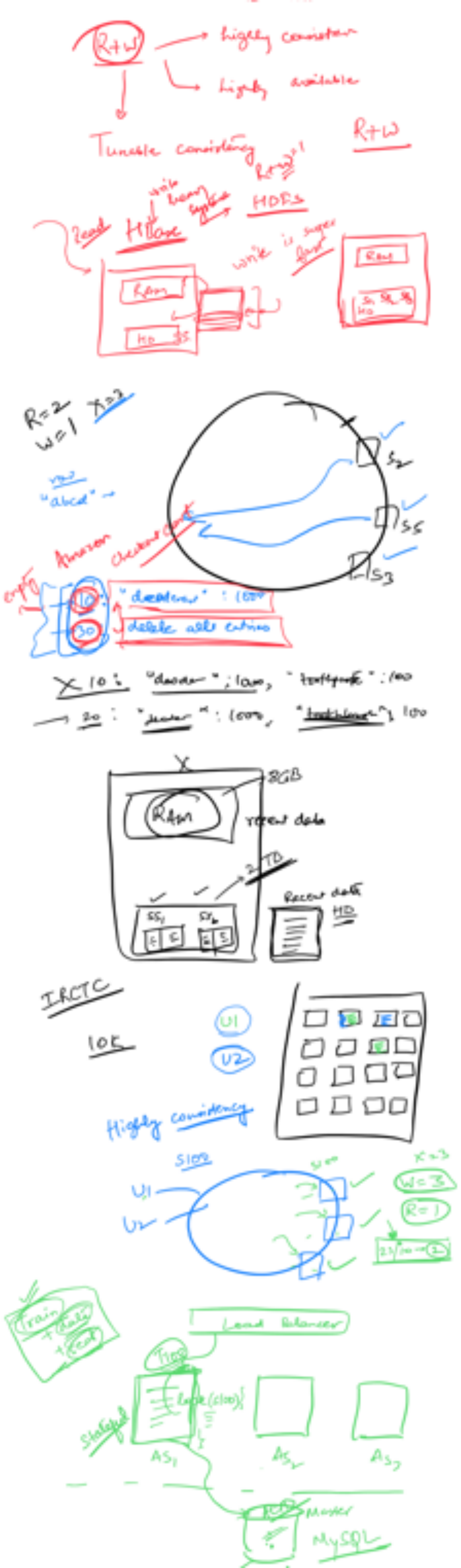

MULTI - MASTER ARCHITECTURE
Client
Load Balancer
Gossip protocol
Replication = 3
next "X" distinct machine


"data" → new information
X = 3
R = 2
W = 2
User configurable
Gossip protocol
R=1
W=1
stale
low latency
HA
Eventually consistent


W=3
R=1
Highly consistent
S1
S2
S3
Reads fast
R+W > X
replication level
Highly consistent System
else
Highly available System
R ↑ ↑ latency of read
W ↑ ↑ latency of write
R=3
W=1
R+W <= X
"abcd"
Read slow
write super fast
S2
S3
S5
Multi-master configuration
data node
rowid → CF1 CF2 CF3
first
last
city
score
8 bytes
Threads
Sorted sets + LSM Trees
Immutable vs Mutable
rowId → CF1 CF2 CF3
"Hi" → "Hello"
100 bytes
write lock
1 Data is separate where do I fit the additional bytes generated
2 Locks : slow down the system
FN
LN
score
256
8
Mutable sorted set


Sorted set
HDD
100 → 5
LSM Tree
Compaction
SS3
Bloom filter
not present
present
hash functions
bit array
RAM
OR
HD Sorted sets


R+W
highly consistent
highly available
Tunable consistency
R+W
HBase
HDFS
Read
write is super fast
RAM
R=2
W=1
X=3
Amazon
checkout cart
delete all entries
8GB
RAM
recent data
Recent data
HD
IRCTC
10K
U1
U2
Highly consistency
U1
U2
W=3
R=1
Load Balancer
AS1
AS2
AS3
stateful
Master
MySQL