Saga Pattern :

Success flow :

Rollback :

CANCELLED   ROLLBACK_INVENTORY

Order Service ← ⑥ ← Order DB ← ⑤ ← Kafka

ROLLBACK_INVENTORY

④

ROLLBACK   PAYMENT_FAILED
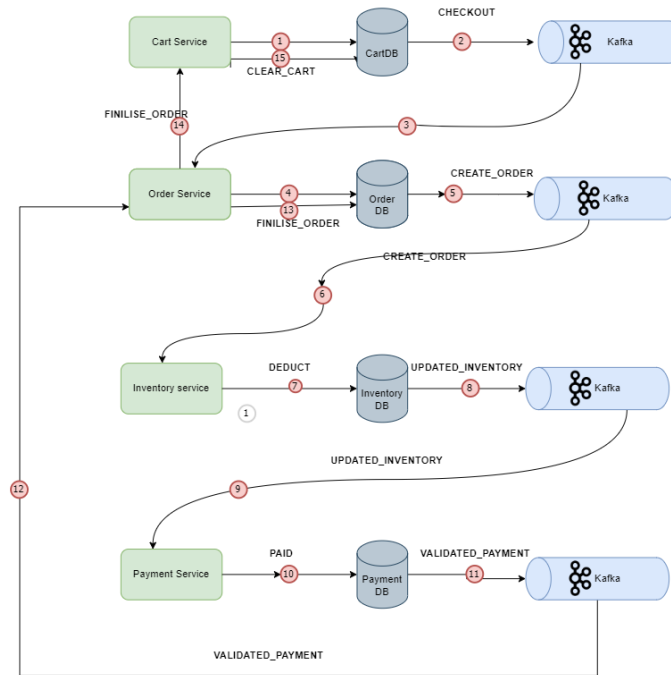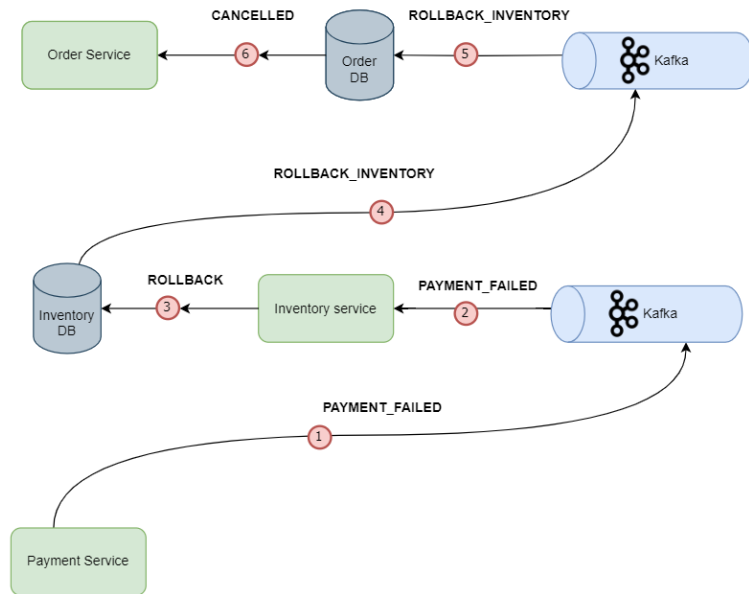
Inventory DB ← ③ ← Inventory service ← ② ← Kafka

PAYMENT_FAILED

①

Payment Service

Assumptions :

- We will have local transaction for two phased commit to maintain inventory status.
- For removing two PC , we can maintain a cache that will hold inventory for shorter period of time with TTL , will expire after given time and update the inventory.
- We have aggregated event store that will hold event lifecycle. We can get event details by querying this DB.
- The event will have acknowledgement flow to mark completion of processing. If acknowledgement does not come after given time a worker node will get those events and replay it or send an alert for its resolution.