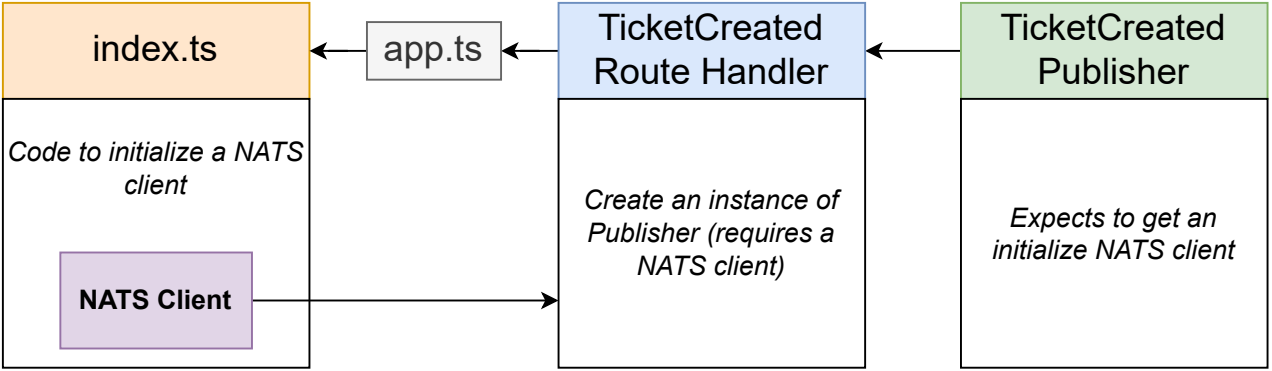
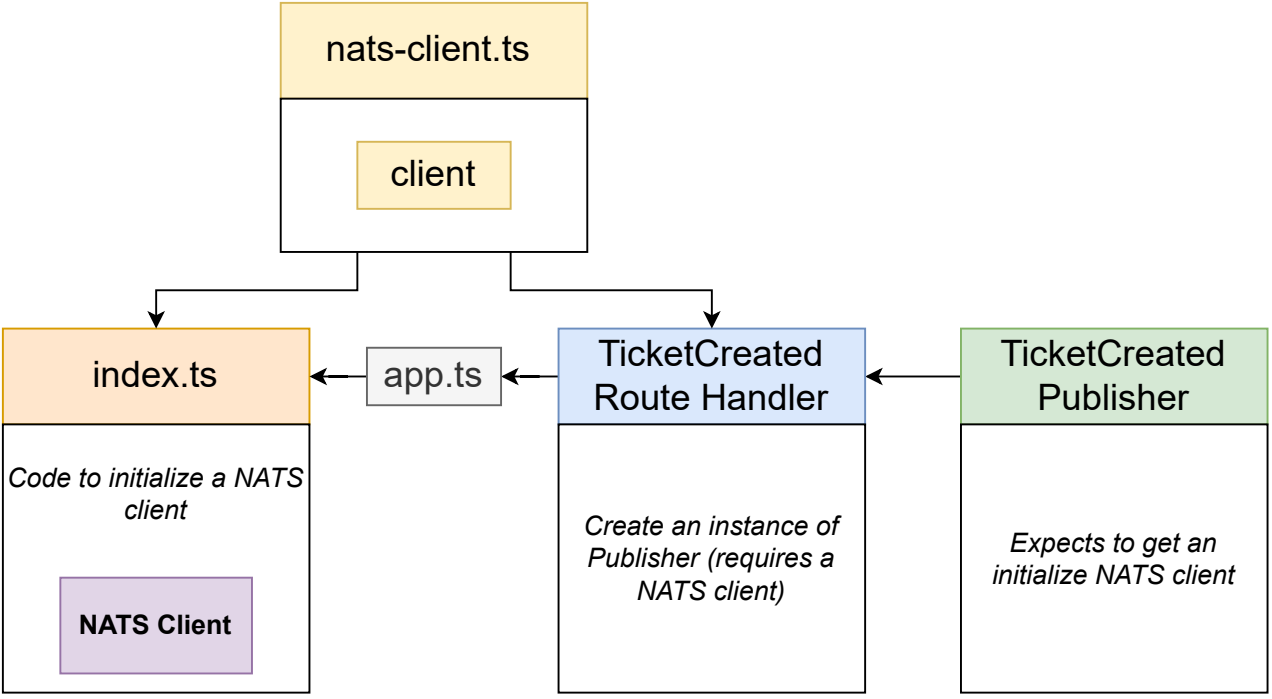
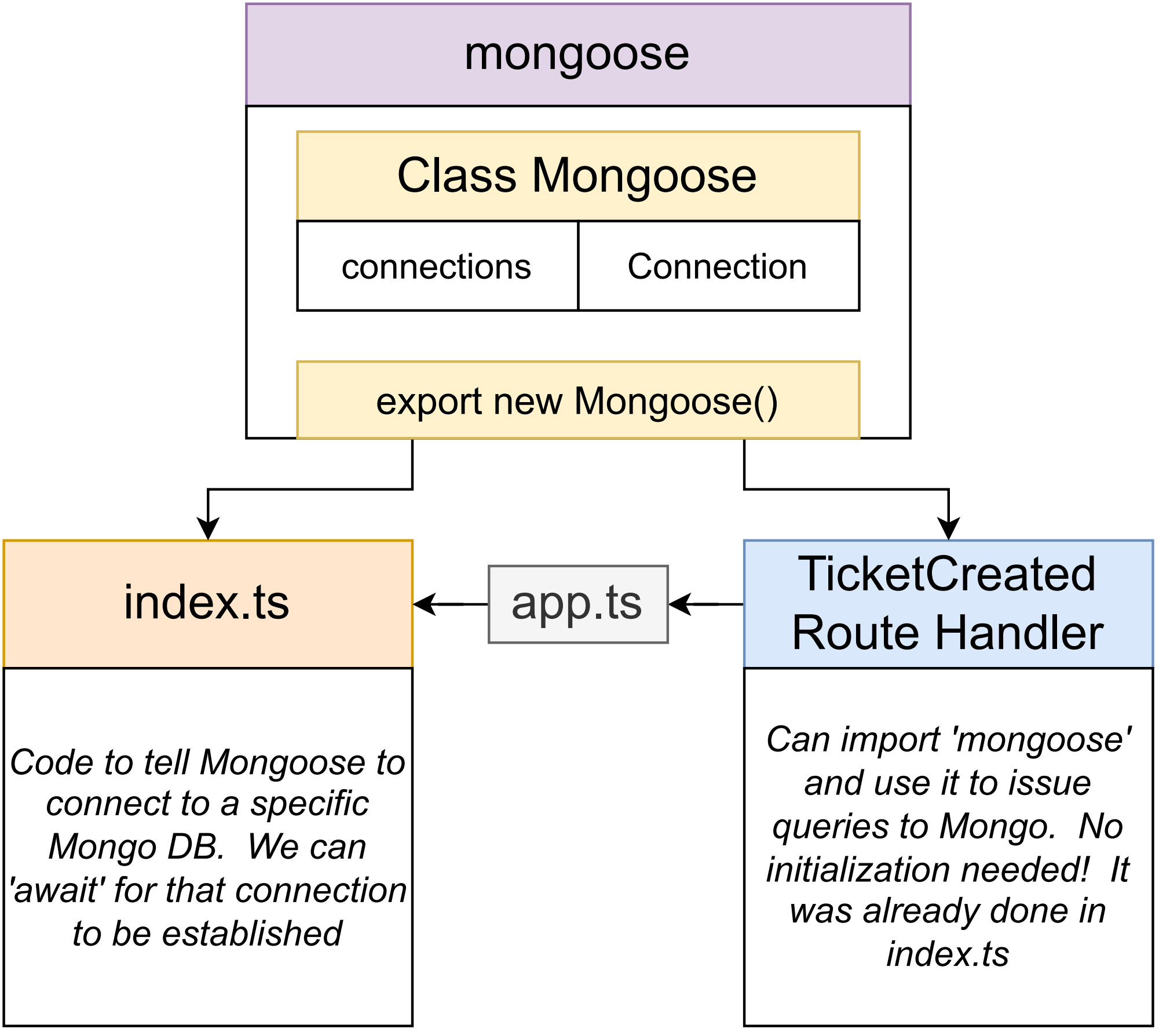
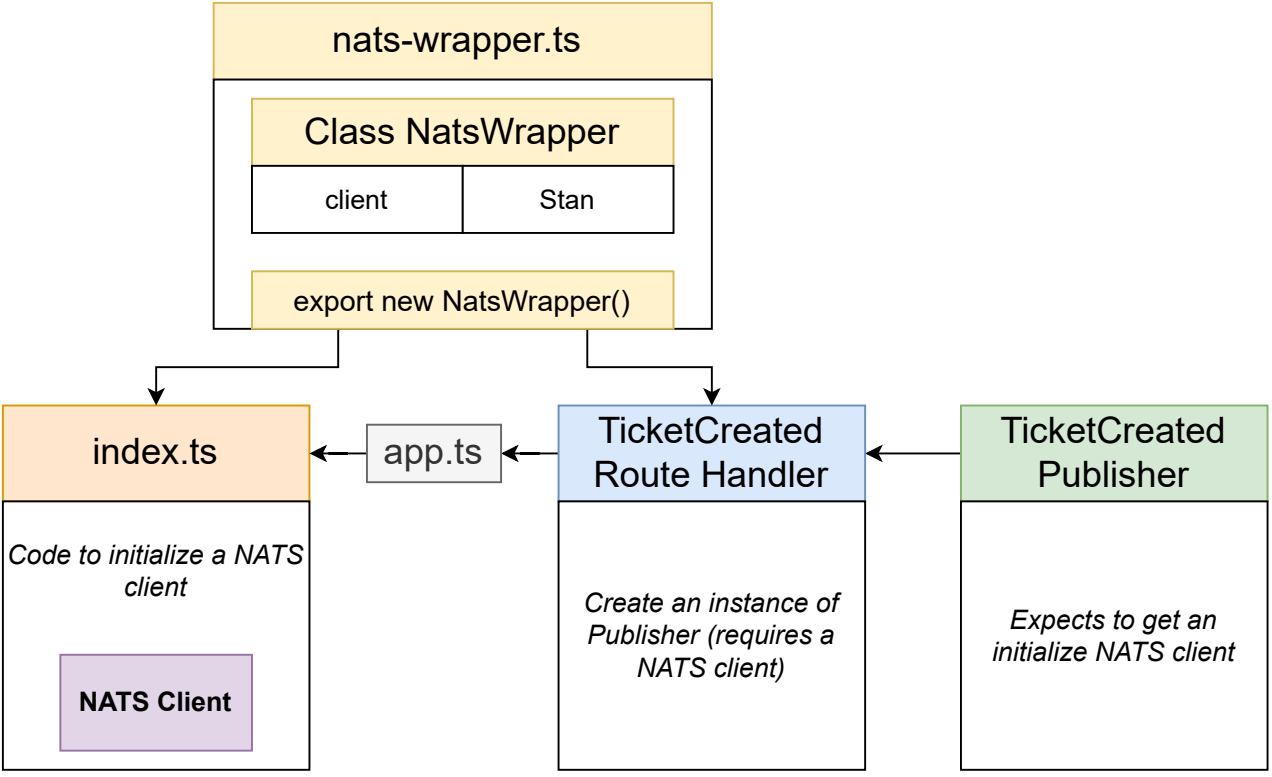
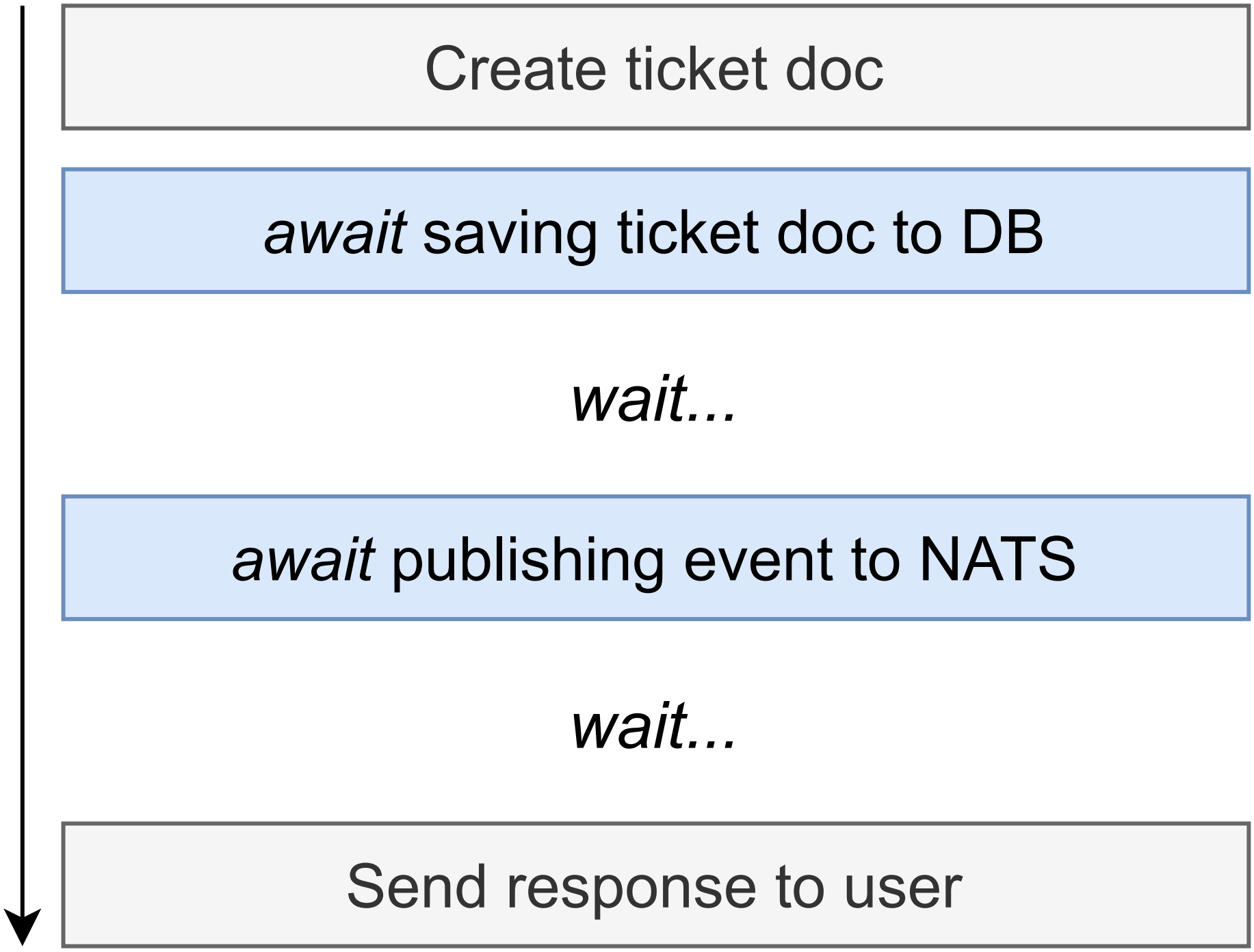

index.ts
app.ts
TicketCreated Route Handler
TicketCreated Publisher
Code to initialize a NATS client
NATS Client
Create an instance of Publisher (requires a NATS client)
Expects to get an initialize NATS client


nats-client.ts
client
index.ts
app.ts
TicketCreated Route Handler
TicketCreated Publisher
Code to initialize a NATS client
NATS Client
Create an instance of Publisher (requires a NATS client)
Expects to get an initialize NATS client

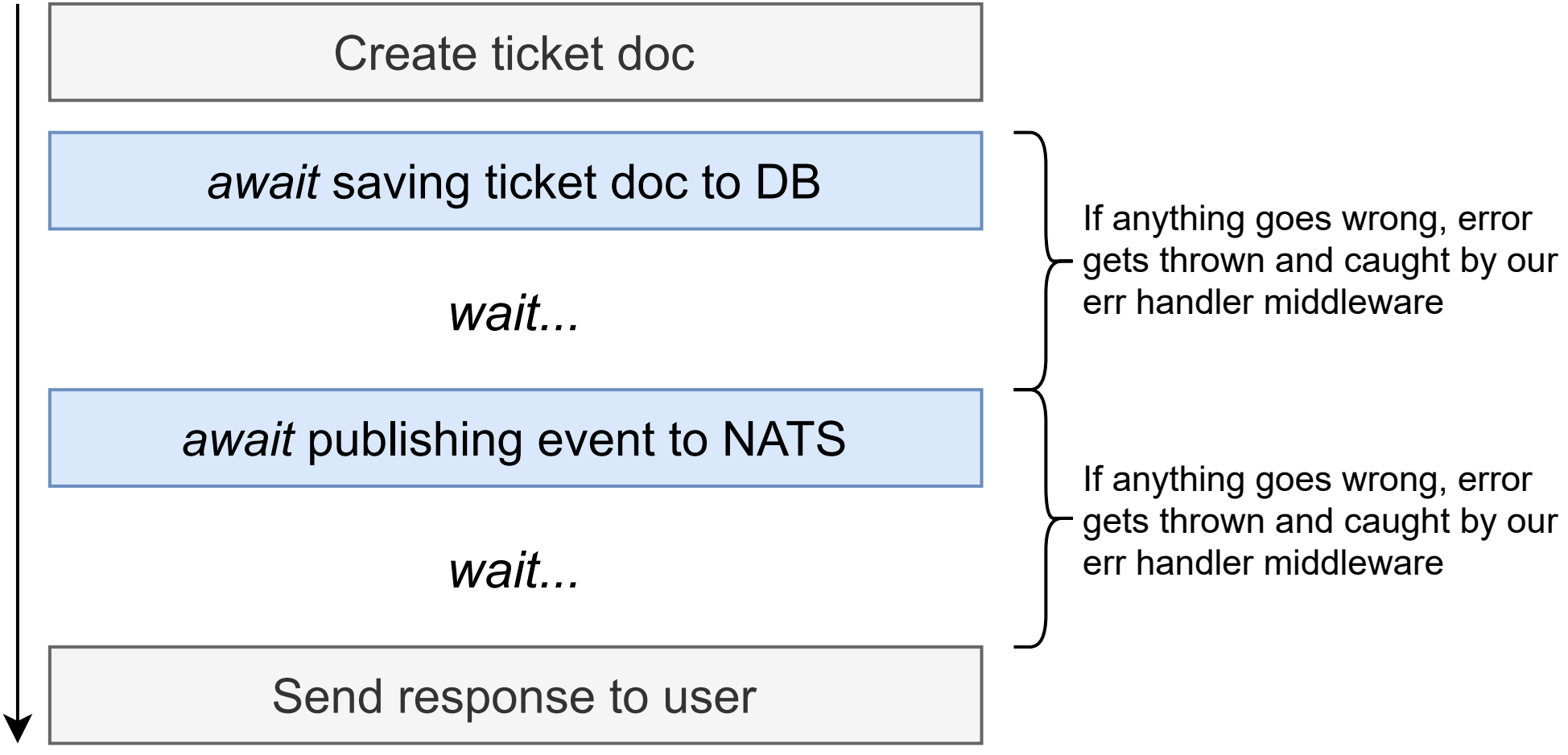

mongoose
Class Mongoose
connections
Connection
export new Mongoose()
index.ts
app.ts
TicketCreated Route Handler
Code to tell Mongoose to connect to a specific Mongo DB. We can 'await' for that connection to be established
Can import 'mongoose' and use it to issue queries to Mongo. No initialization needed! It was already done in index.ts

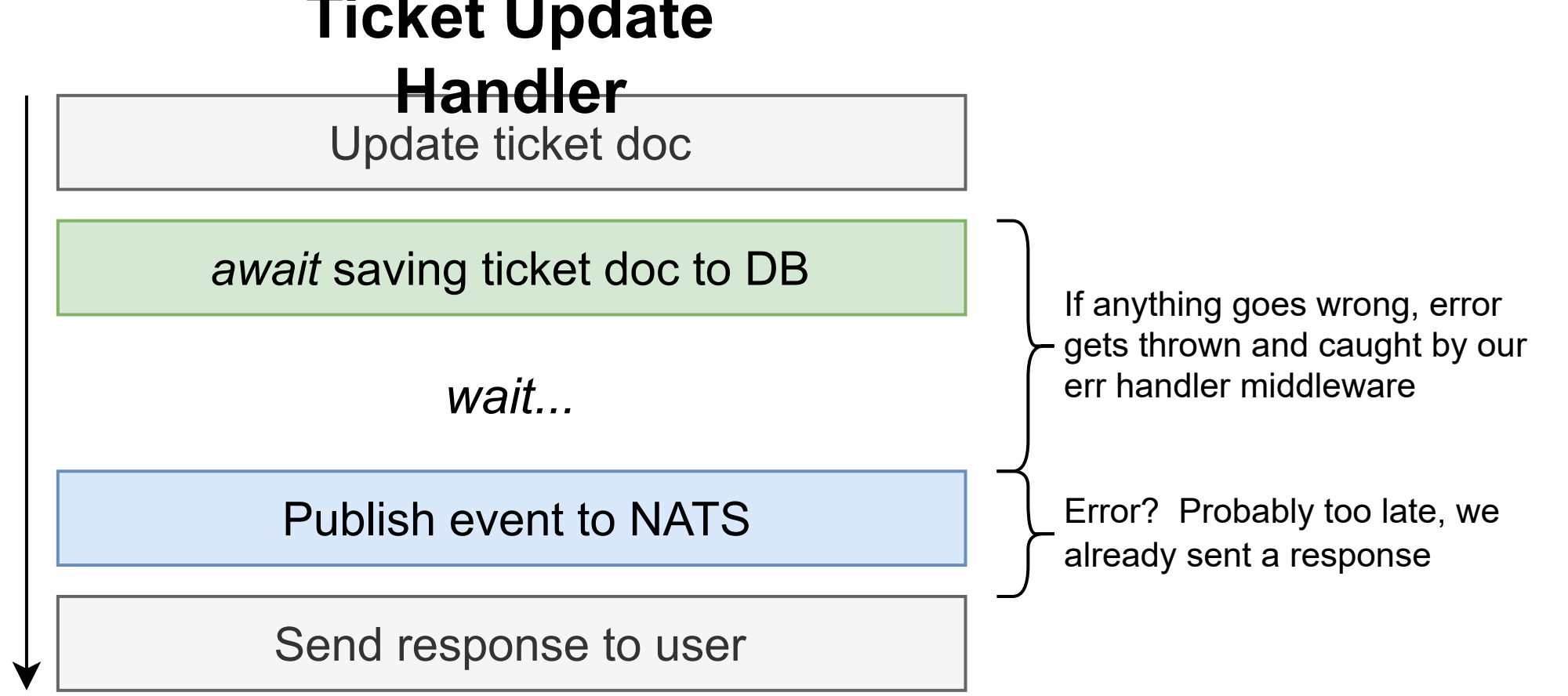

nats-wrapper.ts
Class NatsWrapper
client
Stan
export new NatsWrapper()
index.ts
app.ts
TicketCreated Route Handler
TicketCreated Publisher
Code to initialize a NATS client
NATS Client
Create an instance of Publisher (requires a NATS client)
Expects to get an initialize NATS client

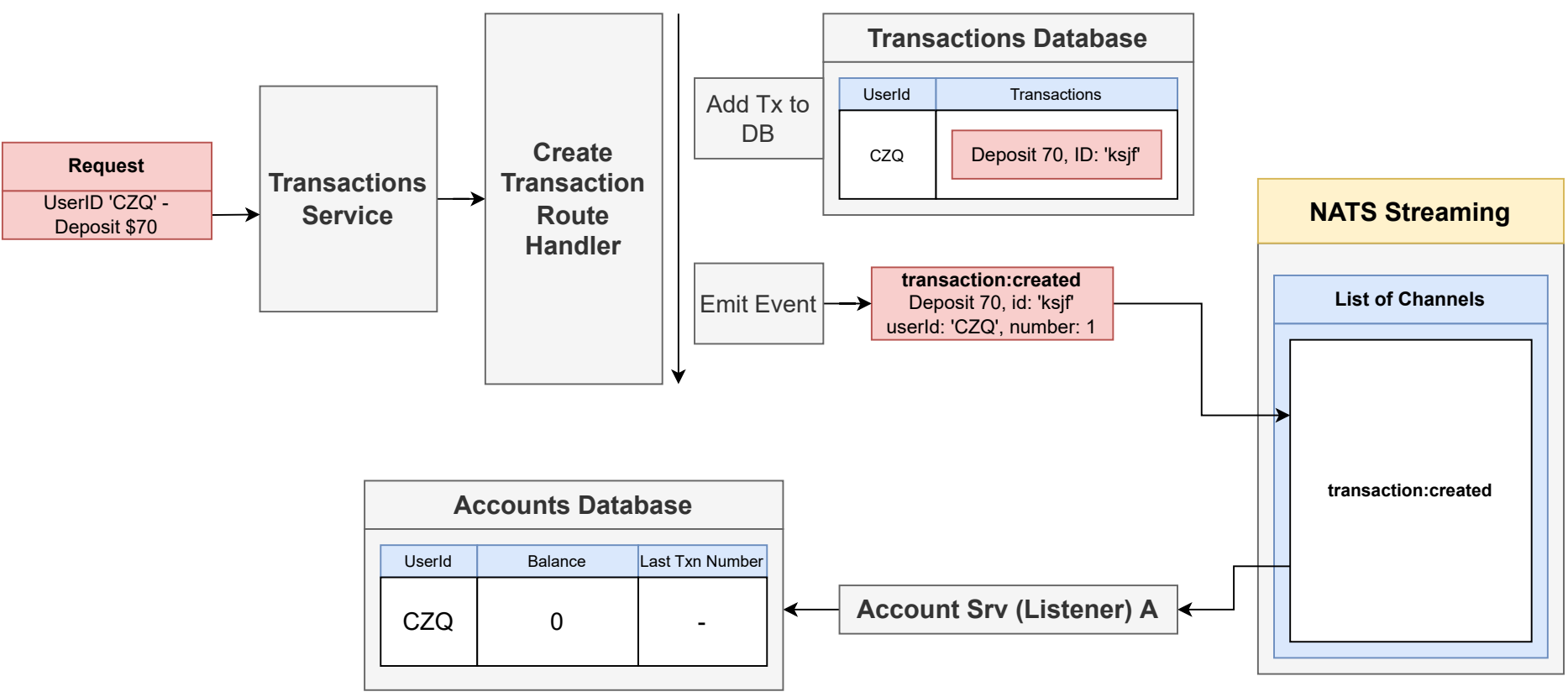
Ticket Create Handler

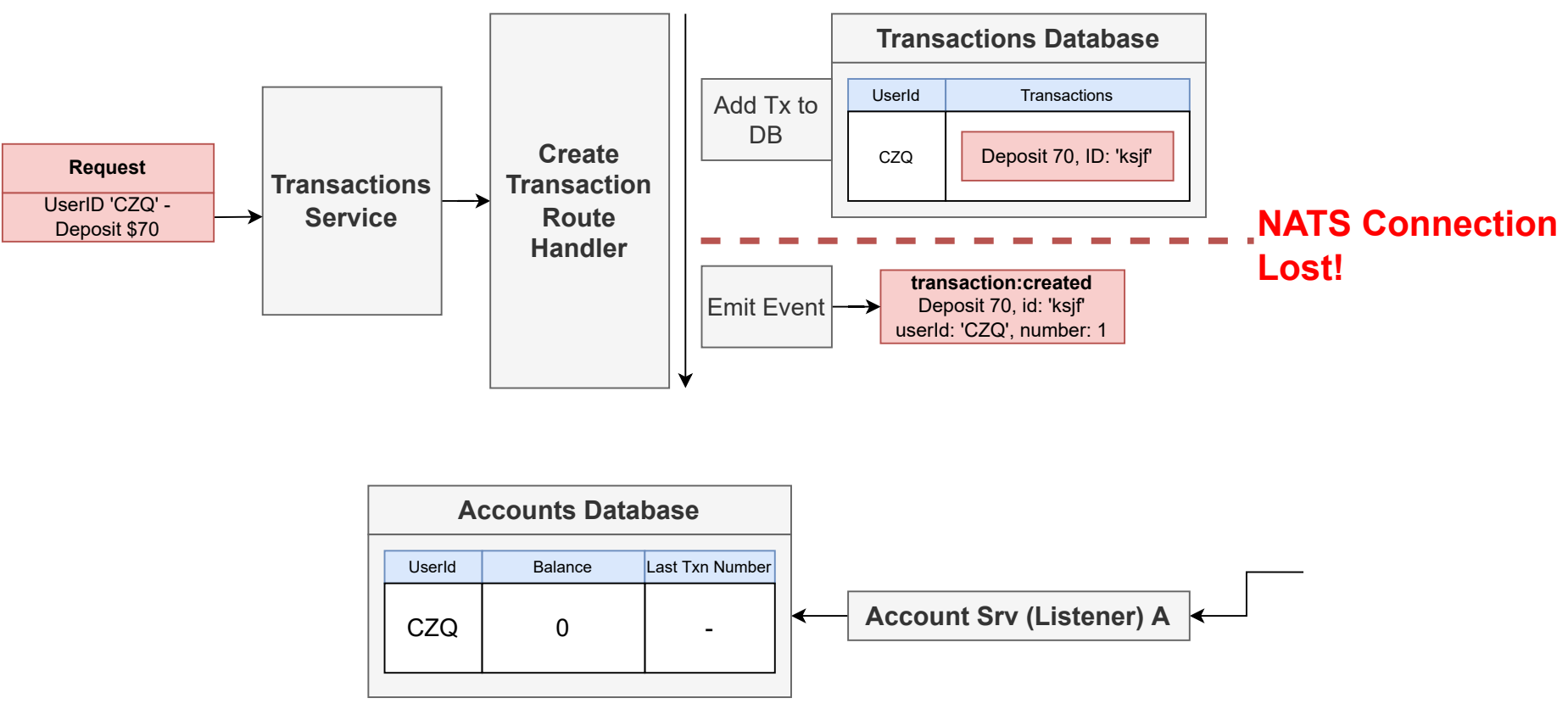


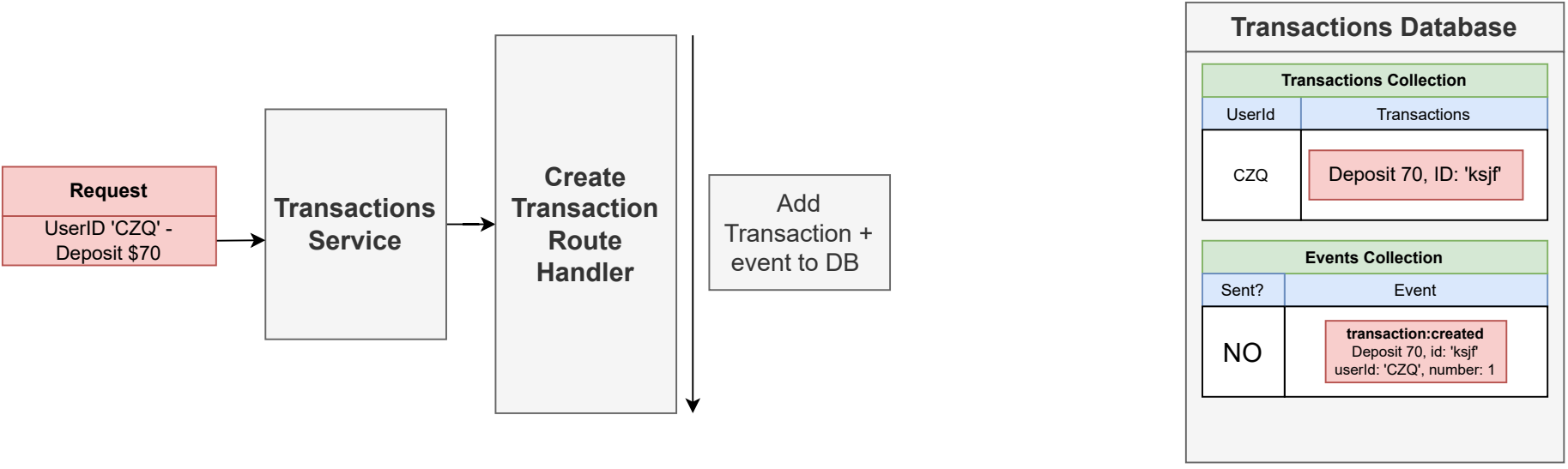
Ticket Create Handler

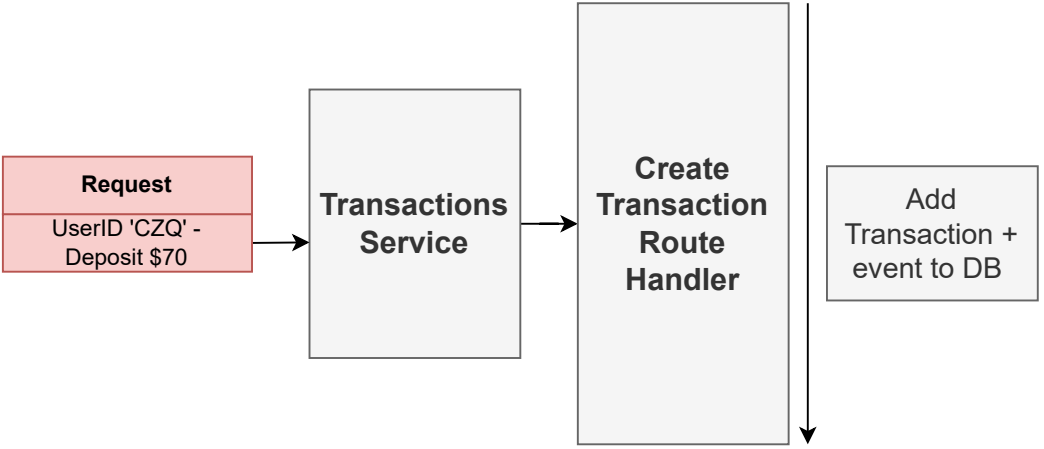


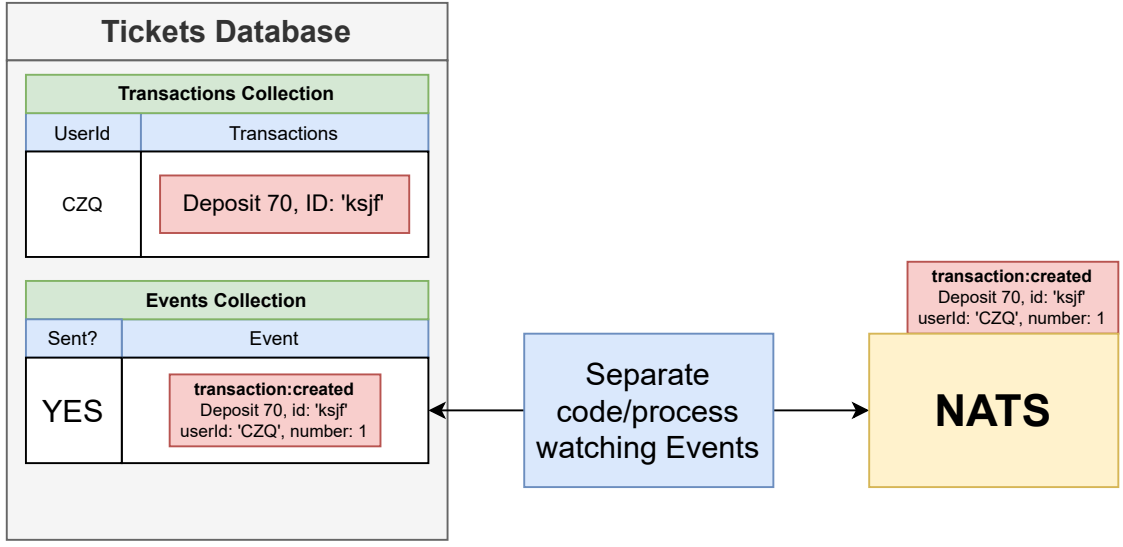

Ticket Update Handler
Update ticket doc
await saving ticket doc to DB
wait...
Publish event to NATS
Send response to user
If anything goes wrong, error gets thrown and caught by our err handler middleware
Error? Probably too late, we already sent a response


Request
UserID 'CZQ' - Deposit $70
Transactions Service
Create Transaction Route Handler
Add Tx to DB
Transactions Database
UserId
Transactions
CZQ
Deposit 70, ID: 'ksjf'
Emit Event
transaction:created
Deposit 70, id: 'ksjf'
userId: 'CZQ', number: 1
NATS Streaming
List of Channels
transaction:created
Accounts Database
UserId
Balance
Last Txn Number
CZQ
0
-
Account Srv (Listener) A


Request
UserID 'CZQ' - Deposit $70
Transactions Service
Create Transaction Route Handler
Add Tx to DB
Transactions Database
UserId
Transactions
CZQ
Deposit 70, ID: 'ksjf'
NATS Connection Lost!
Emit Event
transaction:created
Deposit 70, id: 'ksjf'
userId: 'CZQ', number: 1
Accounts Database
UserId
Balance
Last Txn Number
CZQ
0
-
Account Srv (Listener) A


Request
UserID 'CZQ' - Deposit $70
Transactions Service
Create Transaction Route Handler
Add Transaction + event to DB
Transactions Database
Transactions Collection
UserId
Transactions
CZQ
Deposit 70, ID: 'ksjf'
Events Collection
Sent?
Event
NO
transaction:created
Deposit 70, id: 'ksjf'
userId: 'CZQ', number: 1


Request
UserID 'CZQ' -
Deposit $70
Transactions Service
Create Transaction Route Handler
Add Transaction + event to DB


Tickets Database
Transactions Collection
UserId
Transactions
CZQ
Deposit 70, ID: 'ksjf'
Events Collection
Sent?
Event
YES
transaction:created
Deposit 70, id: 'ksjf'
userId: 'CZQ', number: 1
Separate code/process watching Events
transaction:created
Deposit 70, id: 'ksjf'
userId: 'CZQ', number: 1
NATS

If inserting either of these records fails, all inserts should be reverted

Deposit 70, ID: 'ksjf'

transaction:created
Deposit 70, id: 'ksjf'
userId: 'CZQ', number: 1

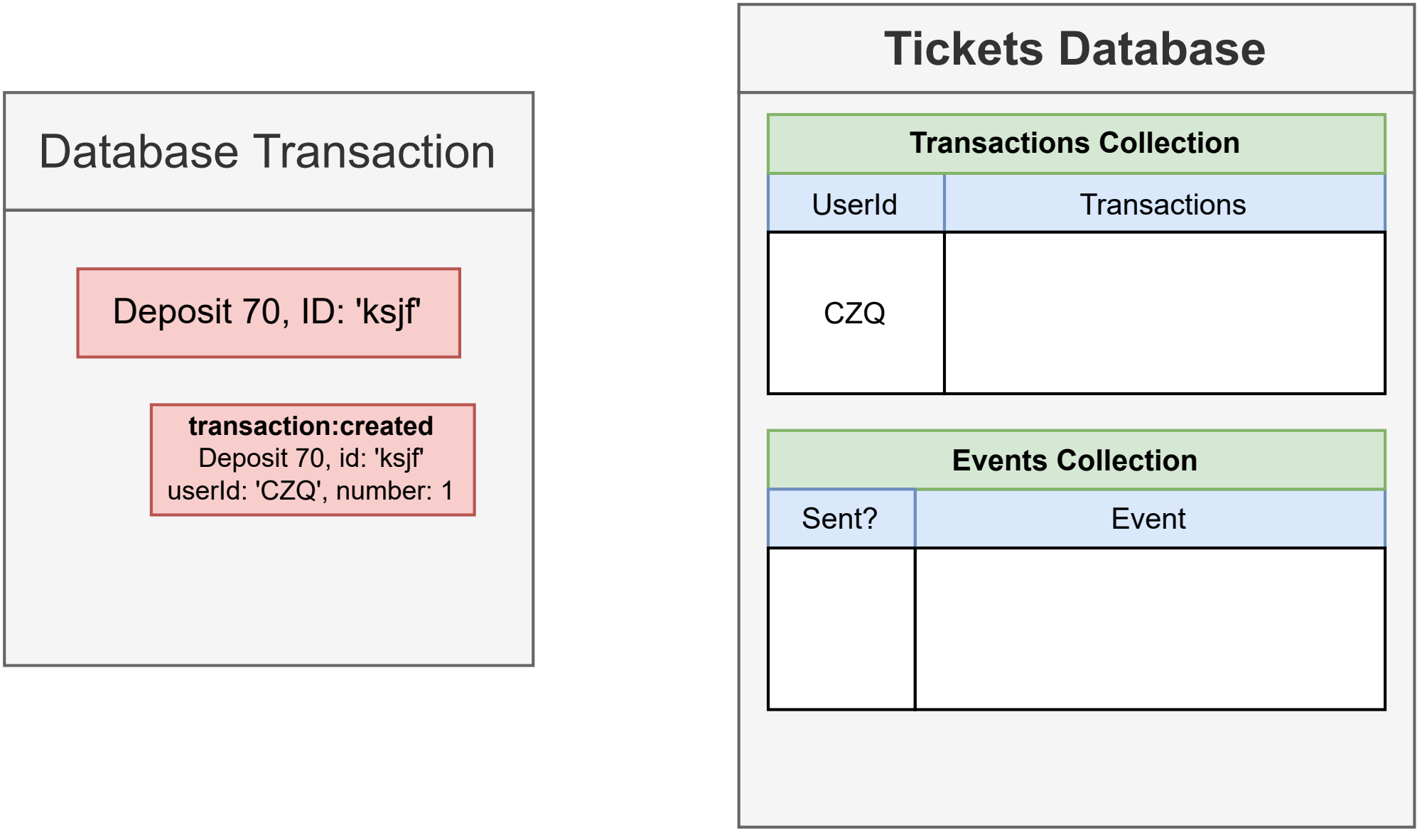
Tickets Database

Transactions Collection

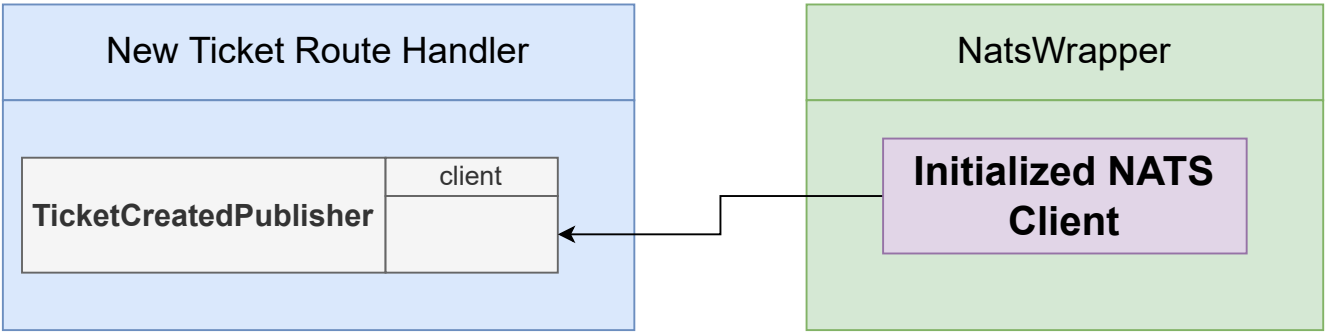
UserId	Transactions
CZQ	

Events Collection

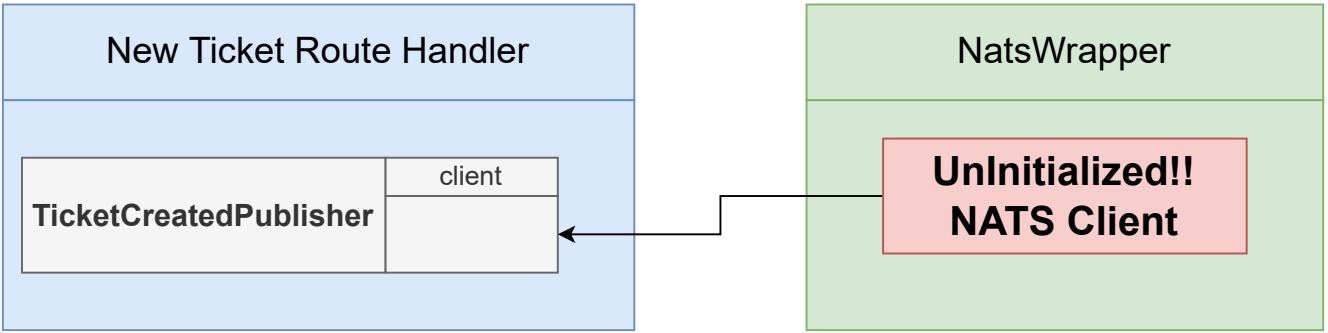
Sent?	Event

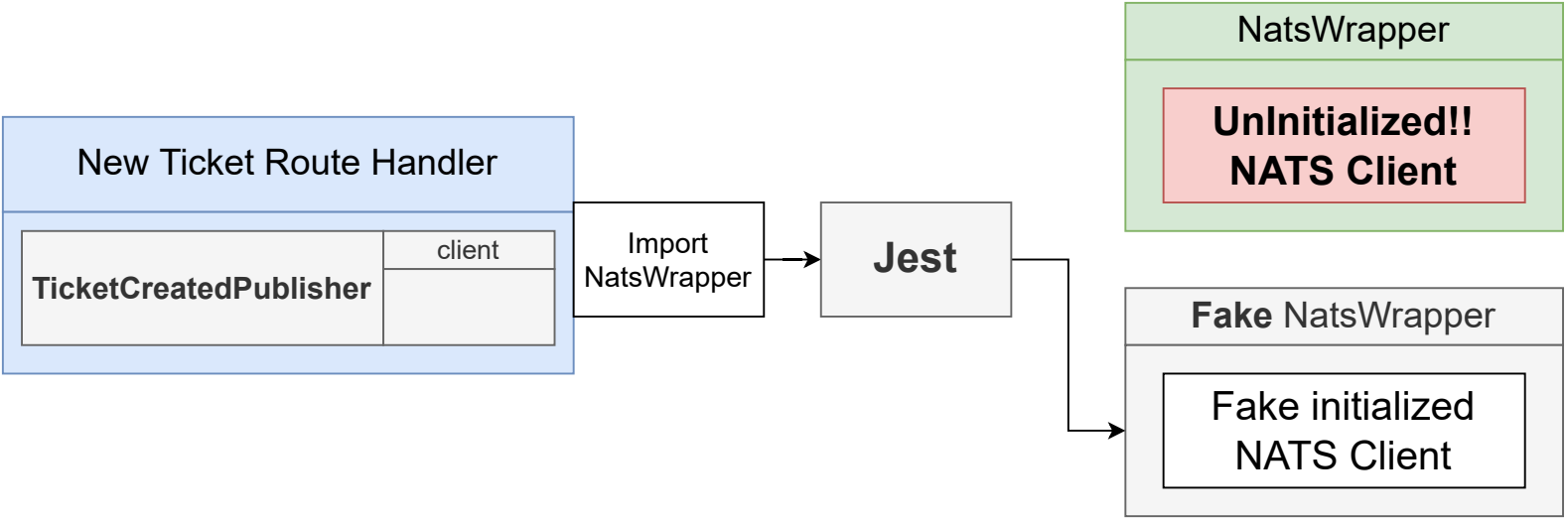

Database Transaction
Deposit 70, ID: 'ksjf'
transaction:created
Deposit 70, id: 'ksjf'
userId: 'CZQ', number: 1
Tickets Database
Transactions Collection
UserId
Transactions
CZQ
Events Collection
Sent?
Event

When Running Our App

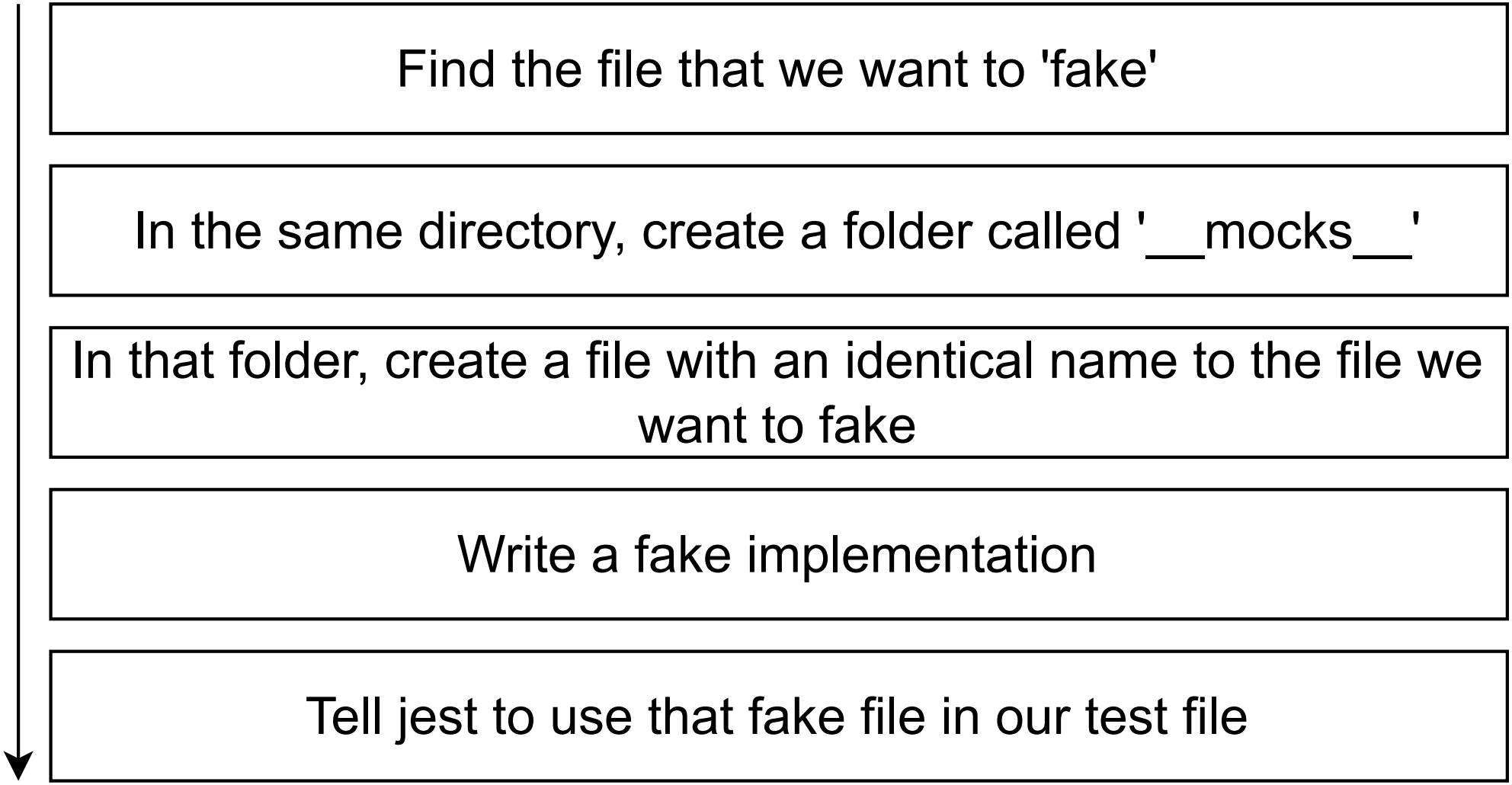


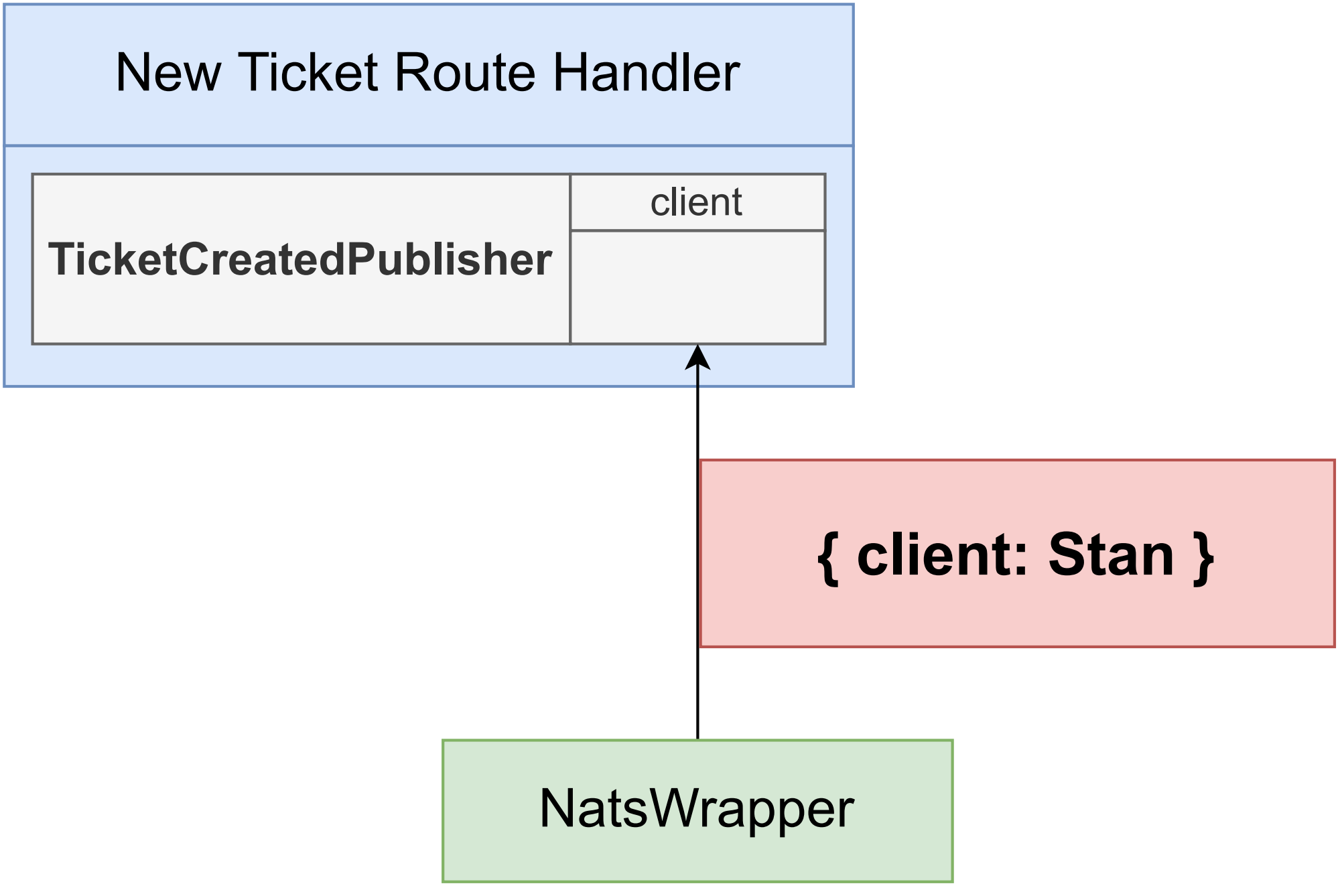
When *Testing* Our App

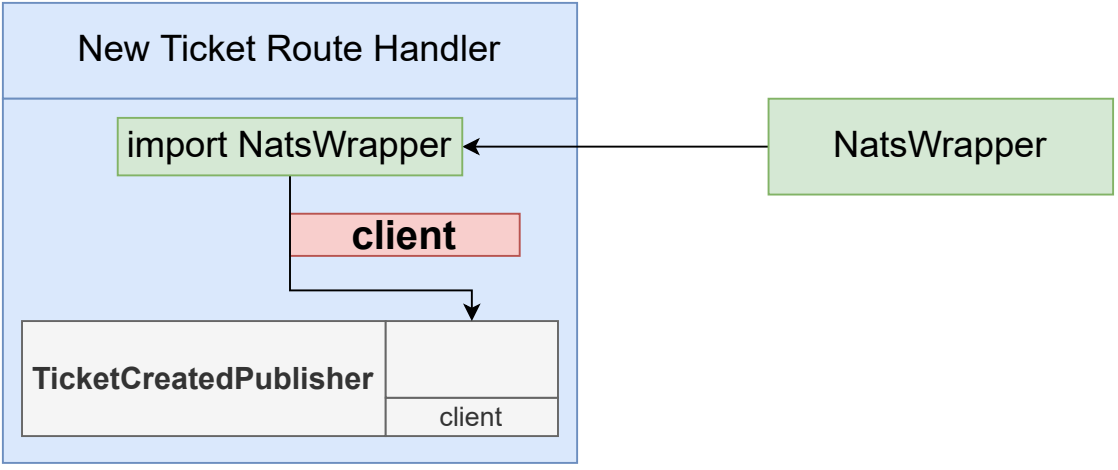


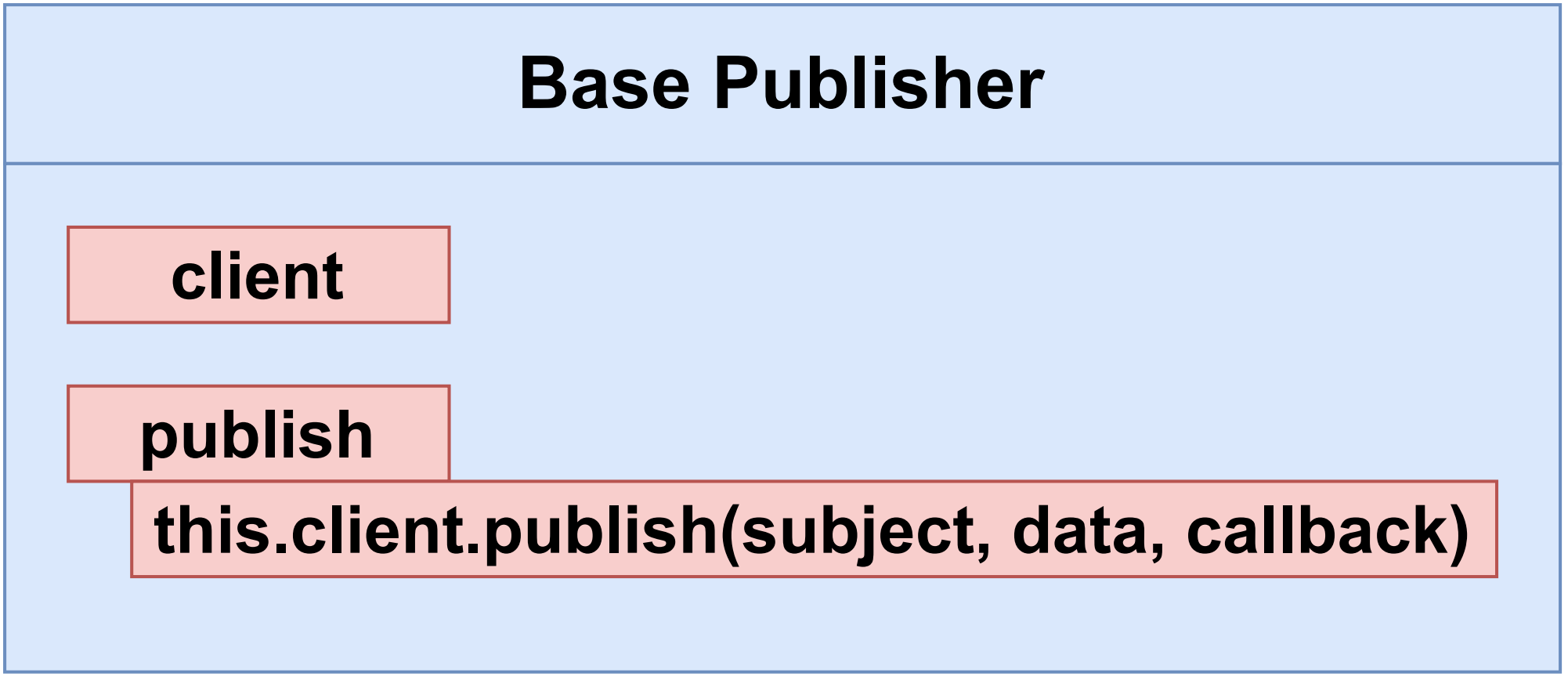

NatsWrapper
UnInitialized!!
NATS Client
New Ticket Route Handler
client
TicketCreatedPublisher
Import
NatsWrapper
Jest
Fake NatsWrapper
Fake initialized
NATS Client

Mocking (Faking) Imports with Jest




New Ticket Route Handler
TicketCreatedPublisher
client
{ client: Stan }
NatsWrapper


New Ticket Route Handler
import NatsWrapper
NatsWrapper
client
TicketCreatedPublisher
client



The BasePublisher expects
to be given a *client* that has a
'publish' function