

Test output

Catalog service test output:

```
(base) om@Oms-MacBook-Air test % python3 catalog-service-test.py
Test lookup on a stock that is present in the database
Sending lookup request for : stock1
Lookup request: stock1, response: Price of stock: 25.78, Volume of the stock: 335
.Test lookup on a stock that is not present in the database
Sending lookup request for : IAmNotAStock
Lookup request: IAmNotAStock, response: Price of stock: -1.0, Volume of the stock: -1
.Test buy update on a stock that is present in the database
Sending lookup request for : stock1
Lookup request: stock1, response: Price of stock: 25.78, Volume of the stock: 335
Sending update request of type: 0 for : stock1 with quantity: 10
Trade request: stock1, 10, response status : 1
Sending lookup request for : stock1
Lookup request: stock1, response: Price of stock: 25.78, Volume of the stock: 325
.Test sell update on a stock that is present in the database
Sending lookup request for : stock1
Lookup request: stock1, response: Price of stock: 25.78, Volume of the stock: 325
Sending update request of type: 1 for : stock1 with quantity: 10
Trade request: stock1, 10, response status : 1
Sending lookup request for : stock1
Lookup request: stock1, response: Price of stock: 25.78, Volume of the stock: 335
.Test lookup on a stock that is present in the database but has insufficient volume for buy
Sending update request of type: 0 for : stock1 with quantity: 100000000
Trade request: stock1, 100000000, response status : 0
.Test update on a stock that is not present in the database
Sending update request of type: 0 for : IAmNotAStock with quantity: 10
Trade request: IAmNotAStock, 10, response status : -1
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Ran 6 tests in 0.036s

OK
```

Order service test output:

```
(base) om@Oms-MacBook-Air test % python3 order-service-test.py
Test buy order on a stock that is present in the database
Sending trade request of type: 0 for : stock1 with quantity: 10
Trade request: stock1, 10, response status : 1
Test sell order on a stock that is present in the database
Sending trade request of type: 1 for : stock1 with quantity: 10
Trade request: stock1, 10, response status : 1
.Test buy order on a stock that is present in the database but has insufficient volume
Sending trade request of type: 0 for : stock1 with quantity: 100000000
Trade request: stock1, 100000000, response status : 0
.Sending trade request of type: 1 for : stock1 with quantity: 10
Trade request: stock1, 10, response status : 1
Test order lookup on order: 107
Performing get request for order: 107
Order lookup request: 107, response status : 1
.Test order lookup on non-existing order: -1
Performing get request for order: -1
Order lookup request: -1, response status : 0
.Test buy order on a stock that is not present in the database
Sending trade request of type: 0 for : IAmNotAStock with quantity: 10
Trade request: IAmNotAStock, 10, response status : -1
Test sell order on a stock that is present in the database
Sending trade request of type: 1 for : IAmNotAStock with quantity: 10
Trade request: IAmNotAStock, 10, response status : -1
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Ran 5 tests in 0.574s

OK
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Frontend service test output:

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(base) om@Oms-MacBook-Air test % python3 frontend_service_test.py
Testing normal working
Connecting frontend server on port: localhost : 26111
Lookup Case: valid stock name
GET request: /stocks?stockname=stock2
Response: {'data': {'name': 'stock2', 'price': 11.8, 'quantity': 65}}

Lookup Case: invalid stock name
GET request: /stocks?stockname=stock6
Response: {'error': {'code': 404, 'message': 'stock not found'}}

Trade Case: success - valid order data
POST request: {'name': 'stock3', 'quantity': 25, 'type': 'SELL'}
Response: {'data': {'transaction_number': 102}}

Trade Case: failure - trade quantity more than available stock volume
POST request: {'name': 'stock5', 'quantity': 100, 'type': 'BUY'}
Response: {'error': {'code': 404, 'message': 'Trading not permitted due to insufficient volume'}}

Trade Case: failure - invalid stock name
POST request: {'name': 'stock8', 'quantity': 10, 'type': 'BUY'}
Response: {'error': {'code': 404, 'message': 'Stock not found'}}

Trade Case: failure - invalid trade quantity (negative)
POST request: {'name': 'stock1', 'quantity': -5, 'type': 'BUY'}
Response: {'error': {'code': 404, 'message': 'Stock not found'}}

Trade Case: failure - invalid trade type
POST request: {'name': 'stock1', 'quantity': 5, 'type': 'word'}
Response: {'error': {'code': 404, 'message': 'Stock not found'}}
Test second lookup request should return from cache
GET request: /stocks?stockname=stock2
Response: {'data': {'name': 'stock2', 'price': 11.8, 'quantity': 65}}
GET request: /stocks?stockname=stock2
Response: {'data': {'name': 'stock2', 'price': 11.8, 'quantity': 65}}
.Test Lookup Failure because of invalid path
GET request: /stock?stockname=stock1
Response: Path not found
.Test Lookup Failure because of invalid stockname
GET request: /stocks?stockname=stock10
Response: {'error': {'code': 404, 'message': 'stock not found'}}
.Test Lookup Success
GET request: /stocks?stockname=stock1
Response: {'data': {'name': 'stock1', 'price': 25.78, 'quantity': 310}}
.Test Order Failure because of invalid trade quantity
POST request: {'name': 'stock1', 'quantity': -5, 'type': 'BUY'}
Response: {'error': {'code': 404, 'message': 'Stock not found'}}
.Test order get request for an invalid order
GET request: /orders?order-number=-1
Response: {'error': {'code': 404, 'message': 'order not found'}}
.Test order get request for an already existing order
POST request: {'name': 'stock1', 'quantity': 25, 'type': 'SELL'}
Response: {'data': {'transaction_number': 103}}
.Test order get request for an already existing order
POST request: {'name': 'stock1', 'quantity': 25, 'type': 'SELL'}
Response: {'data': {'transaction_number': 103}}
GET request: /orders?order-number=103
Response: {'data': {'number': 103, 'name': 'stock1', 'type': 'SELL', 'quantity': 25}}
.Test Order Failure because of invalid stockname
POST request: {'name': 'stock8', 'quantity': 10, 'type': 'BUY'}
Response: {'error': {'code': 404, 'message': 'Stock not found'}}
.Test Order Success
POST request: {'name': 'stock3', 'quantity': 25, 'type': 'SELL'}
Response: {'data': {'transaction_number': 104}}
.Test Order Failure because of invalid trade type
POST request: {'name': 'stock1', 'quantity': 5, 'type': 'word'}
Response: {'error': {'code': 404, 'message': 'Stock not found'}}
.Test Order Failure because trade quantity more than available volume
POST request: {'name': 'stock5', 'quantity': 100, 'type': 'BUY'}
Response: {'error': {'code': 404, 'message': 'Trading not permitted due to insufficient volume'}}
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Ran 11 tests in 0.550s
OK
```

Cache feature test output:

```
(base) om@Oms-MacBook-Air test % python3 cache-test.py
Test evict the least recently used key when cache is full
Test complete!
.Test get from cache call
Test complete!
.Test add to cache call
Test complete!
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Ran 3 tests in 0.000s

OK
```

Replication feature test output:

```
PS E:\MPASS_Acads\Sem2\6770DS\Labs_lablets\spring23-lab-3-vineeth-om_13\src\test> python .\replication-test.py
Sending trade request of type: BUY for : stock3 with quantity: 19
Trade request: stock3, 19, response status : 1
Sending trade request of type: BUY for : stock3 with quantity: 22
Trade request: stock3, 22, response status : 1
Sending trade request of type: BUY for : stock4 with quantity: 24
Trade request: stock4, 24, response status : 0
Sending trade request of type: SELL for : stock18 with quantity: 20
Trade request: stock18, 20, response status : -1
Sending trade request of type: SELL for : stock10 with quantity: 6
Trade request: stock10, 6, response status : 1
Sending trade request of type: BUY for : stock10 with quantity: 27
Trade request: stock10, 27, response status : 0
Sending trade request of type: SELL for : stock2 with quantity: 25
Trade request: stock2, 25, response status : 1
Sending trade request of type: SELL for : stock17 with quantity: 10
Trade request: stock17, 10, response status : -1
Sending order lookup request for id: 3357 at host: localhost:9721
Order lookup request: 3357, response status : 1
Sending order lookup request for id: 3357 at host: localhost:9722
Order lookup request: 3357, response status : 1
Sending order lookup request for id: 3357 at host: localhost:9723
Order lookup request: 3357, response status : 1
Sending order lookup request for id: 3358 at host: localhost:9721
Order lookup request: 3358, response status : 1
Sending order lookup request for id: 3358 at host: localhost:9722
Order lookup request: 3358, response status : 1
Sending order lookup request for id: 3358 at host: localhost:9723
Order lookup request: 3358, response status : 1
Sending order lookup request for id: 3359 at host: localhost:9721
Order lookup request: 3359, response status : 1
Sending order lookup request for id: 3359 at host: localhost:9722
Order lookup request: 3359, response status : 1
Sending order lookup request for id: 3359 at host: localhost:9723
Order lookup request: 3359, response status : 1
Sending order lookup request for id: 3360 at host: localhost:9721
Order lookup request: 3360, response status : 1
Sending order lookup request for id: 3360 at host: localhost:9722
Order lookup request: 3360, response status : 1
Sending order lookup request for id: 3360 at host: localhost:9723
Order lookup request: 3360, response status : 1
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Ran 1 test in 2.500s

OK
PS E:\MPASS_Acads\Sem2\6770DS\Labs_lablets\spring23-lab-3-vineeth-om_13\src\test>
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