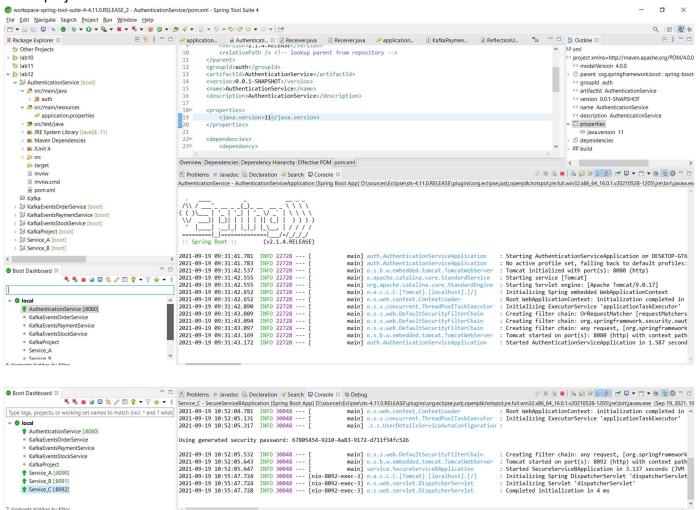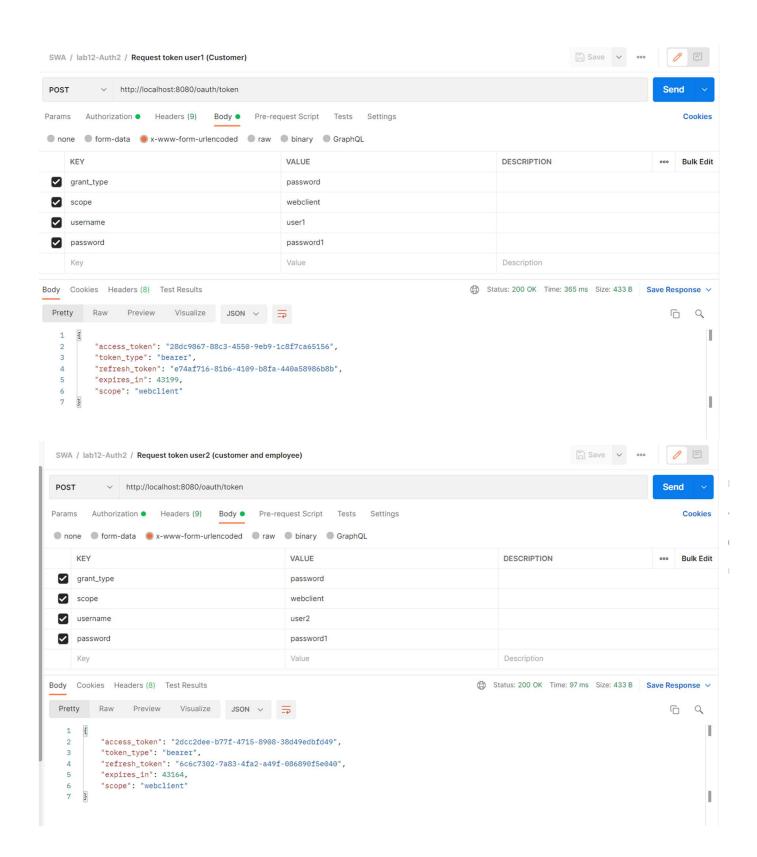| Subject	SWA – CS590
Assignment	Lab 12
Date	9/18/2021
Students	Vo Ngoc Huy Nguyen - 611066
Professor	Rene de Jong

Lab Assignment 12: Security

Exercise 1: Security

Refer projects:

And more source codes in attached file

Save ⌄ ○○○ ✎ ▢

POST ⌄ http://localhost:8080/oauth/token **Send** ⌄

Params Authorization ● Headers (9) Body ● Pre-request Script Tests Settings Cookies

○ none ○ form-data ● x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

	KEY	VALUE	DESCRIPTION	○○○	Bulk Edit
☑	grant_type	password			
☑	scope	webclient			
☑	username	user1			
☑	password	password1			
	Key	Value	Description		

Body Cookies Headers (8) Test Results ⊕ Status: 200 OK Time: 365 ms Size: 433 B Save Response ⌄

Pretty Raw Preview Visualize JSON ⌄ ⇥

```
1  {
2      "access_token": "28dc9867-88c3-4550-9eb9-1c8f7ca65156",
3      "token_type": "bearer",
4      "refresh_token": "e74af716-81b6-4109-b8fa-440a58986b8b",
5      "expires_in": 43199,
6      "scope": "webclient"
7  }
```

Save ⌄ ○○○ ✎ ▢

POST ⌄ http://localhost:8080/oauth/token **Send** ⌄

Params Authorization ● Headers (9) Body ● Pre-request Script Tests Settings Cookies

○ none ○ form-data ● x-www-form-urlencoded ○ raw ○ binary ○ GraphQL

	KEY	VALUE	DESCRIPTION	○○○	Bulk Edit
☑	grant_type	password			
☑	scope	webclient			
☑	username	user2			
☑	password	password1			
	Key	Value	Description		

Body Cookies Headers (8) Test Results ⊕ Status: 200 OK Time: 97 ms Size: 433 B Save Response ⌄

Pretty Raw Preview Visualize JSON ⌄ ⇥

```
1  {
2      "access_token": "2dcc2dee-b77f-4715-8908-38d49edbfd49",
3      "token_type": "bearer",
4      "refresh_token": "6c6c7302-7a83-4fa2-a49f-086890f5e040",
5      "expires_in": 43164,
6      "scope": "webclient"
7  }
```

💾 Save ∨   ∘∘∘   ✏️ 💬

POST ∨ | http://localhost:8080/oauth/token | **Send** ∨

Params   Authorization ●   Headers (9)   **Body** ●   Pre-request Script   Tests   Settings   **Cookies**

○ none   ○ form-data   ● x-www-form-urlencoded   ○ raw   ○ binary   ○ GraphQL

	KEY	VALUE	DESCRIPTION	∘∘∘	**Bulk Edit**
☑	grant_type	password			
☑	scope	webclient			
☑	username	user3			
☑	password	password1			
	Key	Value	Description		

Body   Cookies   Headers (8)   Test Results   ⊕ Status: 200 OK   Time: 138 ms   Size: 433 B   **Save Response** ∨

Pretty   Raw   Preview   Visualize   JSON ∨   ⇥   🗐 🔍

```
1  {
2      "access_token": "b8b5b95f-6637-4562-9016-84d0e7401f72",
3      "token_type": "bearer",
4      "refresh_token": "98d664a0-4ea8-4ca5-9552-2bfa8a5a029e",
5      "expires_in": 43200,
6      "scope": "webclient"
7  }
```

- **Get info of user:**

+ ≡ | ∘∘∘   SWA / lab12-Auth2 / **Get user1 info**   💾 Save ∨ ∘∘∘ ✏️ 💬

> Clic Integration
> CLIC UAT
> EmailRegression
> Integration with Compass
> Mule-Intg
> Mule-Intg Copy
> Sprint2.3
> SR
∨ SWA
  > 📁 WebShop
  > 📁 Lab7
  > 📁 microservice
  > 📁 lab9
  ∨ 📁 lab12-Auth2
    POST Request token user1 (Cust...
    POST Request token user2 (custo...
    POST Request token user3 (cust...
    GET Get user1 info
    GET call ServiceA-publicinfo
    GET call ServiceB-employeeinfo
    GET Save an order Copy
    GET http://localhost:8080/greetin...
    POST http://localhost:8080/books

GET ∨ | http://localhost:8080/user | **Send** ∨

Params   Authorization ●   Headers (7)   Body   Pre-request Script   Tests   Settings   **Cookies**

Headers 👁 6 hidden

	KEY	VALUE	DESCRIPTION	∘∘∘	**Bulk Edit**	Presets ∨
☑	Authorization	Bearer 79786254-e184-402d-8730-bee550ced315				
	Key	Value	Description			

Body   Cookies   Headers (9)   Test Results   ⊕ Status: 200 OK   Time: 9 ms   Size: 528 B   **Save Response** ∨

Pretty   Raw   Preview   Visualize   JSON ∨   ⇥   🗐 🔍

```
1  {
2      "user": {
3          "password": null,
4          "username": "user1",
5          "authorities": [
6              {
7                  "authority": "ROLE_CUSTOMER"
8              }
9          ],
10         "accountNonExpired": true,
11         "accountNonLocked": true,
12         "credentialsNonExpired": true,
13         "enabled": true
14     },
15     "authorities": [
16         "ROLE_CUSTOMER"
17     ]
```

Save ✎ 🗨

GET ∨ http://localhost:8080/user **Send** ∨

Params Authorization ● **Headers (7)** Body Pre-request Script Tests Settings **Cookies**

Headers 👁 6 hidden

	KEY	VALUE	DESCRIPTION	•••	Bulk Edit	Presets ∨
☑	Authorization	Bearer 57bfb169-ea8b-4824-81d4-f85648e16e0a				
	Key	Value	Description			

Body Cookies Headers (9) Test Results 🌐 Status: 200 OK Time: 10 ms Size: 574 B Save Response ∨

Pretty Raw Preview Visualize JSON ∨

```
 5          "authorities": [
 6              {
 7                  "authority": "ROLE_CUSTOMER"
 8              },
 9              {
10                  "authority": "ROLE_EMPLOYEE"
11              }
12          ],
13          "accountNonExpired": true,
14          "accountNonLocked": true,
15          "credentialsNonExpired": true,
16          "enabled": true
17      },
18      "authorities": [
19          "ROLE_CUSTOMER",
20          "ROLE_EMPLOYEE"
```

Save ✎ 🗨

GET ∨ http://localhost:8080/user **Send** ∨

Params Authorization ● **Headers (7)** Body Pre-request Script Tests Settings **Cookies**

Headers 👁 6 hidden

	KEY	VALUE	DESCRIPTION	•••	Bulk Edit	Presets ∨
☑	Authorization	Bearer c205b3f1-baae-4c77-8b9b-f5eff00d9320				
	Key	Value	Description			

Body Cookies Headers (9) Test Results 🌐 Status: 200 OK Time: 8 ms Size: 618 B Save Response ∨

Pretty Raw Preview Visualize JSON ∨

```
 4          "username": "user3",
 5          "authorities": [
 6              {
 7                  "authority": "ROLE_CUSTOMER"
 8              },
 9              {
10                  "authority": "ROLE_EMPLOYEE"
11              },
12              {
13                  "authority": "ROLE_MANAGER"
14              }
15          ],
16          "accountNonExpired": true,
17          "accountNonLocked": true,
18          "credentialsNonExpired": true,
19          "enabled": true
```

- Call ServiceA

SWA / lab12-Auth2 / **call ServiceA-name**

💾 Save ⌄   ⚬⚬⚬   ✏️ 💬

GET ⌄   http://localhost:8090/name   **Send** ⌄

Params   Authorization 🟢   **Headers (7)**   Body   Pre-request Script   Tests   Settings   **Cookies**

Headers   👁 6 hidden

	KEY	VALUE	DESCRIPTION	⚬⚬⚬	Bulk Edit	Presets ⌄
☑	Authorization	Bearer 57bfb169-ea8b-4824-81d4-f85648e16e0a				
	Key	Value	Description			

Body   Cookies   Headers (9)   Test Results   🌐 Status: 200 OK Time: 18 ms Size: 302 B   **Save Response** ⌄

Pretty   Raw   Preview   Visualize   Text ⌄   ⇥   📋 🔍

```
1    Userx
```

SWA / lab12-Auth2 / **call ServiceA-employeeinfo**

💾 Save ⌄   ⚬⚬⚬   ✏️ 💬

GET ⌄   http://localhost:8090/employeeinfo   **Send** ⌄

Params   Authorization 🟢   **Headers (7)**   Body   Pre-request Script   Tests   Settings   **Cookies**

Headers   👁 6 hidden

	KEY	VALUE	DESCRIPTION	⚬⚬⚬	Bulk Edit	Presets ⌄
☑	Authorization	Bearer 57bfb169-ea8b-4824-81d4-f85648e16e0a				
	Key	Value	Description			

Body   Cookies   Headers (9)   Test Results   🌐 Status: 200 OK Time: 22 ms Size: 327 B   **Save Response** ⌄

Pretty   Raw   Preview   Visualize   Text ⌄   ⇥   📋 🔍

```
1    This info is for the employee
```

SWA / lab12-Auth2 / **call ServiceA-managerinfo(error)**

Save ⌄   ○○○   🖉 💬

| GET ⌄ | http://localhost:8090/managerinfo | **Send** ⌄ |

Params ●   Authorization   Headers (7)   Body   Pre-request Script   Tests   Settings   Cookies

Headers   👁 6 hidden

	KEY	VALUE	DESCRIPTION	○○○	Bulk Edit	Presets ⌄
☑	Authorization	Bearer 57bfb169-ea8b-4824-81d4-f85648e16e0a				
	Key	Value	Description			

Body   Cookies   Headers (8)   Test Results   🌐 Status: 403 Forbidden   Time: 24 ms   Size: 333 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   JSON ⌄   ⇄   📋 🔍

```
1  {
2      "error": "access_denied",
3      "error_description": "Access is denied"
4  }
```

SWA / lab12-Auth2 / **call ServiceA-managerinfo Copy**

Save ⌄   ○○○   🖉 💬

| GET ⌄ | http://localhost:8090/managerinfo | **Send** ⌄ |

Params ●   Authorization   Headers (7)   Body   Pre-request Script   Tests   Settings   Cookies

Query Params

	KEY	VALUE	DESCRIPTION	○○○	Bulk Edit
☐	authen				
	Key	Value	Description		

Body   Cookies   Headers (9)   Test Results   🌐 Status: 200 OK   Time: 18 ms   Size: 326 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   Text ⌄   ⇄   📋 🔍

```
1  This info is for the manager
```

- Call Service B

SWA / lab12-Auth2 / call ServiceB-publicinfo

| GET | ⌄ | http://localhost:8091/publicinfo | | | | Send ⌄ |

Params ● | Authorization | Headers (7) | Body | Pre-request Script | Tests | Settings | Cookies

Headers 👁 6 hidden

	KEY	VALUE	DESCRIPTION	000	Bulk Edit	Presets ⌄
☐	Authorization	Bearer c205b3f1-baae-4c77-8b9b-f5eff00d9320				
	Key	Value	Description			

Body Cookies Headers (9) Test Results   🌐 Status: 200 OK Time: 5 ms Size: 317 B   Save Response ⌄

Pretty Raw Preview Visualize | Text ⌄ | ⇥

```
1   This is public info
```

- Call Service C

SWA / lab12-Auth2 / call ServiceC - Salary

| GET | ⌄ | http://localhost:8090/salary | | | | Send ⌄ |

Params ● | Authorization ● | Headers (7) | Body | Pre-request Script | Tests | Settings | Cookies

Headers 👁 6 hidden

	KEY	VALUE	DESCRIPTION	000	Bulk Edit	Presets ⌄
☑	Authorization	Bearer c205b3f1-baae-4c77-8b9b-f5eff00d9320				
	Key	Value	Description			

Body Cookies Headers (9) Test Results   🌐 Status: 200 OK Time: 15 ms Size: 303 B   Save Response ⌄

Pretty Raw Preview Visualize | Text ⌄ | ⇥

```
1   50.000
```

Refer attached file for codes and Postman calls

Exercise 2: Spring Kafka

Run and check for Kafka setting

```
C:\Windows\system32\cmd.exe - zookeeper-server-start.bat  C:\kafka\config\zookeeper.properties

[2021-09-19 08:40:44,321] INFO Server environment:user.home=C:\Users\nguye (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:40:44,322] INFO Server environment:user.dir=C:\Users\nguye (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:40:44,334] INFO tickTime set to 3000 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:40:44,334] INFO minSessionTimeout set to -1 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:40:44,335] INFO maxSessionTimeout set to -1 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:40:44,364] INFO Using org.apache.zookeeper.server.NIOServerCnxnFactory as server connection factory (org.apache.zookeeper.server.ServerCnxnFactory)
[2021-09-19 08:40:44,367] INFO binding to port 0.0.0.0/0.0.0.0:2181 (org.apache.zookeeper.server.NIOServerCnxnFactory)
[2021-09-19 08:42:18,223] INFO Accepted socket connection from /127.0.0.1:65328 (org.apache.zookeeper.server.NIOServerCnxnFactory)
[2021-09-19 08:42:18,231] INFO Client attempting to establish new session at /127.0.0.1:65328 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:42:18,236] INFO Creating new log file: log.1 (org.apache.zookeeper.server.persistence.FileTxnLog)
[2021-09-19 08:42:18,250] INFO Established session 0x100037590650000 with negotiated timeout 6000 for client /127.0.0.1:65328 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:42:18,299] INFO Got user-level KeeperException when processing sessionid:0x100037590650000 type:create cxid:0x2 zxid:0x3 txntype:-1 reqpath:n/a Error Path:/brokers Error:KeeperErrorCode = NoNode f
or /brokers (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:42:18,310] INFO Got user-level KeeperException when processing sessionid:0x100037590650000 type:create cxid:0x6 zxid:0x7 txntype:-1 reqpath:n/a Error Path:/config Error:KeeperErrorCode = NoNode fo
r /config (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:42:18,318] INFO Got user-level KeeperException when processing sessionid:0x100037590650000 type:create cxid:0x9 zxid:0xa txntype:-1 reqpath:n/a Error Path:/admin Error:KeeperErrorCode = NoNode for
 /admin (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:42:18,467] INFO Got user-level KeeperException when processing sessionid:0x100037590650000 type:create cxid:0x15 zxid:0x15 txntype:-1 reqpath:n/a Error Path:/cluster Error:KeeperErrorCode = NoNode
 for /cluster (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:42:19,012] INFO Got user-level KeeperException when processing sessionid:0x100037590650000 type:setData cxid:0x21 zxid:0x1a txntype:-1 reqpath:n/a Error Path:/controller_epoch Error:KeeperErrorCod
e = NoNode for /controller_epoch (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:42:19,115] INFO Got user-level KeeperException when processing sessionid:0x100037590650000 type:delete cxid:0x35 zxid:0x1d txntype:-1 reqpath:n/a Error Path:/admin/reassign_partitions Error:Keeper
ErrorCode = NoNode for /admin/reassign_partitions (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:42:19,126] INFO Got user-level KeeperException when processing sessionid:0x100037590650000 type:delete cxid:0x39 zxid:0x1e txntype:-1 reqpath:n/a Error Path:/admin/preferred_replica_election Error
:KeeperErrorCode = NoNode for /admin/preferred_replica_election (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:42:41,055] INFO Accepted socket connection from /0:0:0:0:0:0:0:1:51659 (org.apache.zookeeper.server.NIOServerCnxnFactory)
[2021-09-19 08:42:41,058] INFO Client attempting to establish new session at /0:0:0:0:0:0:0:1:51659 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:42:41,062] INFO Established session 0x100037590650001 with negotiated timeout 30000 for client /0:0:0:0:0:0:0:1:51659 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:42:41,590] WARN Exception causing close of session 0x100037590650001: An existing connection was forcibly closed by the remote host (org.apache.zookeeper.server.NIOServerCnxn)
[2021-09-19 08:42:41,591] INFO Closed socket connection for client /0:0:0:0:0:0:0:1:51659 which had sessionid 0x100037590650001 (org.apache.zookeeper.server.NIOServerCnxn)
[2021-09-19 08:43:05,976] INFO Accepted socket connection from /0:0:0:0:0:0:0:1:64234 (org.apache.zookeeper.server.NIOServerCnxnFactory)
[2021-09-19 08:43:05,978] INFO Client attempting to establish new session at /0:0:0:0:0:0:0:1:64234 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:43:05,982] INFO Established session 0x100037590650002 with negotiated timeout 30000 for client /0:0:0:0:0:0:0:1:64234 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:43:06,168] INFO Got user-level KeeperException when processing sessionid:0x100037590650002 type:setData cxid:0x4 zxid:0x21 txntype:-1 reqpath:n/a Error Path:/config/topics/greetingtopic Error:Keep
erErrorCode = NoNode for /config/topics/greetingtopic (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:43:06,212] INFO Processed session termination for sessionid: 0x100037590650002 (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:43:06,216] INFO Closed socket connection for client /0:0:0:0:0:0:0:1:64234 which had sessionid 0x100037590650002 (org.apache.zookeeper.server.NIOServerCnxn)
[2021-09-19 08:43:13,063] INFO Expiring session 0x100037590650001, timeout of 30000ms exceeded (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:43:13,063] INFO Processed session termination for sessionid: 0x100037590650001 (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:43:14,788] INFO Accepted socket connection from /0:0:0:0:0:0:0:1:51932 (org.apache.zookeeper.server.NIOServerCnxnFactory)
[2021-09-19 08:43:14,791] INFO Client attempting to establish new session at /0:0:0:0:0:0:0:1:51932 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:43:14,794] INFO Established session 0x100037590650003 with negotiated timeout 30000 for client /0:0:0:0:0:0:0:1:51932 (org.apache.zookeeper.server.ZooKeeperServer)
[2021-09-19 08:43:14,824] INFO Processed session termination for sessionid: 0x100037590650003 (org.apache.zookeeper.server.PrepRequestProcessor)
[2021-09-19 08:43:14,827] INFO Closed socket connection for client /0:0:0:0:0:0:0:1:51932 which had sessionid 0x100037590650003 (org.apache.zookeeper.server.NIOServerCnxn)
[2021-09-19 08:47:39,757] INFO Got user-level KeeperException when processing sessionid:0x100037590650000 type:setData cxid:0x48 zxid:0x2b txntype:-1 reqpath:n/a Error Path:/config/topics/__consumer_offsets Erro
r:KeeperErrorCode = NoNode for /config/topics/__consumer_offsets (org.apache.zookeeper.server.PrepRequestProcessor)
```

```
C:\Windows\system32\cmd.exe - kafka-server-start.bat  c:\kafka\config\server.properties

[2021-09-19 08:42:19,026] INFO [GroupMetadataManager brokerId=0] Removed 0 expired offsets in 4 milliseconds. (kafka.coordinator.group.GroupMetadataManager)
[2021-09-19 08:42:19,037] INFO [ProducerId Manager 0]: Acquired new producerId block (brokerId:0,blockStartProducerId:0,blockEndProducerId:999) by writing to Zk with path version 1 (kafka.coordinator.transaction
.ProducerIdManager)
[2021-09-19 08:42:19,058] INFO [TransactionCoordinator id=0] Starting up. (kafka.coordinator.transaction.TransactionCoordinator)
[2021-09-19 08:42:19,060] INFO [Transaction Marker Channel Manager 0]: Starting (kafka.coordinator.transaction.TransactionMarkerChannelManager)
[2021-09-19 08:42:19,060] INFO [TransactionCoordinator id=0] Startup complete. (kafka.coordinator.transaction.TransactionCoordinator)
[2021-09-19 08:42:19,107] INFO [/config/changes-event-process-thread]: Starting (kafka.common.ZkNodeChangeNotificationListener$ChangeEventProcessThread)
[2021-09-19 08:42:19,123] INFO [SocketServer brokerId=0] Started processors for 1 acceptors (kafka.network.SocketServer)
[2021-09-19 08:42:19,131] INFO Kafka version : 2.0.0 (org.apache.kafka.common.utils.AppInfoParser)
[2021-09-19 08:42:19,132] INFO Kafka commitId : 3402a8361b734732 (org.apache.kafka.common.utils.AppInfoParser)
[2021-09-19 08:42:19,134] INFO [KafkaServer id=0] started (kafka.server.KafkaServer)
[2021-09-19 08:43:06,268] INFO [ReplicaFetcherManager on broker 0] Removed fetcher for partitions greetingtopic-0 (kafka.server.ReplicaFetcherManager)
[2021-09-19 08:43:06,321] INFO [Log partition=greetingtopic-0, dir=C:\Users\nguye\kafkakafka_logs] Loading producer state till offset 0 with message format version 2 (kafka.log.Log)
[2021-09-19 08:43:06,330] INFO [Log partition=greetingtopic-0, dir=C:\Users\nguye\kafkakafka_logs] Completed load of log with 1 segments, log start offset 0 and log end offset 0 in 37 ms (kafka.log.Log)
[2021-09-19 08:43:06,332] INFO Created log for partition greetingtopic-0 in C:\Users\nguye\kafkakafka_logs with properties {compression.type -> producer, message.format.version -> 2.0-IV1, file.delete.delay.ms -
> 60000, max.message.bytes -> 1000012, min.compaction.lag.ms -> 0, message.timestamp.type -> CreateTime, min.insync.replicas -> 1, message.downconversion.enable -> true, segment.jitter.ms -> 0, preallocate -> fa
lse, index.interval.bytes -> 4096, min.cleanable.dirty.ratio -> 0.5, unclean.leader.election.enable -> false, retention.bytes -> -1, delete.retention.ms -> 86400000, cleanup.policy -> [delete], flush.ms -> 92233
72036854775807, segment.bytes -> 1073741824, segment.ms -> 604800000, retention.ms -> 604800000, message.timestamp.difference.max.ms -> 9223372036854775807, segment.index.bytes -> 10485760, flush.messages -> 922
3372036854775807}. (kafka.log.LogManager)
[2021-09-19 08:43:06,333] INFO [Partition greetingtopic-0 broker=0] No checkpointed highwatermark is found for partition greetingtopic-0 (kafka.cluster.Partition)
[2021-09-19 08:43:06,335] INFO Replica loaded for partition greetingtopic-0 with initial high watermark 0 (kafka.cluster.Replica)
[2021-09-19 08:43:06,338] INFO [Partition greetingtopic-0 broker=0] greetingtopic-0 starts at Leader Epoch 0 from offset 0. Previous Leader Epoch was: -1 (kafka.cluster.Partition)
[2021-09-19 08:43:06,353] INFO [ReplicaAlterLogDirsManager on broker 0] Added fetcher for partitions List() (kafka.server.ReplicaAlterLogDirsManager)
[2021-09-19 08:47:39,767] INFO Topic creation Map(__consumer_offsets-0 -> ArrayBuffer(0)) (kafka.zk.AdminZkClient)
[2021-09-19 08:47:39,774] INFO [KafkaApi-0] Auto creation of topic __consumer_offsets with 1 partitions and replication factor 1 is successful (kafka.server.KafkaApis)
[2021-09-19 08:47:39,790] INFO [ReplicaFetcherManager on broker 0] Removed fetcher for partitions __consumer_offsets-0 (kafka.server.ReplicaFetcherManager)
[2021-09-19 08:47:39,801] INFO [Log partition=__consumer_offsets-0, dir=C:\Users\nguye\kafkakafka_logs] Loading producer state till offset 0 with message format version 2 (kafka.log.Log)
[2021-09-19 08:47:39,803] INFO [Log partition=__consumer_offsets-0, dir=C:\Users\nguye\kafkakafka_logs] Completed load of log with 1 segments, log start offset 0 and log end offset 0 in 7 ms (kafka.log.Log)
[2021-09-19 08:47:39,805] INFO Created log for partition __consumer_offsets-0 in C:\Users\nguye\kafkakafka_logs with properties {compression.type -> producer, message.format.version -> 2.0-IV1, file.delete.delay
.ms -> 60000, max.message.bytes -> 1000012, min.compaction.lag.ms -> 0, message.timestamp.type -> CreateTime, min.insync.replicas -> 1, message.downconversion.enable -> true, segment.jitter.ms -> 0, preallocate
-> false, index.interval.bytes -> 4096, min.cleanable.dirty.ratio -> 0.5, unclean.leader.election.enable -> false, retention.bytes -> -1, delete.retention.ms -> 86400000, cleanup.policy -> compact, flush.ms -> 9
223372036854775807, segment.bytes -> 104857600, segment.ms -> 604800000, retention.ms -> 604800000, message.timestamp.difference.max.ms -> 9223372036854775807, segment.index.bytes -> 10485760, flush.messages ->
9223372036854775807}. (kafka.log.LogManager)
[2021-09-19 08:47:39,806] INFO [Partition __consumer_offsets-0 broker=0] No checkpointed highwatermark is found for partition __consumer_offsets-0 (kafka.cluster.Partition)
[2021-09-19 08:47:39,809] INFO Replica loaded for partition __consumer_offsets-0 with initial high watermark 0 (kafka.cluster.Replica)
[2021-09-19 08:47:39,810] INFO [Partition __consumer_offsets-0 broker=0] __consumer_offsets-0 starts at Leader Epoch 0 from offset 0. Previous Leader Epoch was: -1 (kafka.cluster.Partition)
[2021-09-19 08:47:39,811] INFO [ReplicaAlterLogDirsManager on broker 0] Added fetcher for partitions List() (kafka.server.ReplicaAlterLogDirsManager)
[2021-09-19 08:47:39,812] INFO Updated PartitionLeaderEpoch. New: {epoch:0, offset:0}, Current: {epoch:-1, offset:-1} for Partition: greetingtopic-0. Cache now contains 0 entries. (kafka.server.epoch.LeaderEpoch
FileCache)
[2021-09-19 08:47:39,812] INFO [GroupMetadataManager brokerId=0] Scheduling loading of offsets and group metadata from __consumer_offsets-0 (kafka.coordinator.group.GroupMetadataManager)
[2021-09-19 08:47:39,819] INFO [GroupMetadataManager brokerId=0] Finished loading offsets and group metadata from __consumer_offsets-0 in 6 milliseconds. (kafka.coordinator.group.GroupMetadataManager)
[2021-09-19 08:47:39,870] INFO [GroupCoordinator 0]: Preparing to rebalance group gid with old generation 0 (__consumer_offsets-0) (kafka.coordinator.group.GroupCoordinator)
[2021-09-19 08:47:39,883] INFO [GroupCoordinator 0]: Stabilized group gid generation 1 (__consumer_offsets-0) (kafka.coordinator.group.GroupCoordinator)
[2021-09-19 08:47:39,896] INFO [GroupCoordinator 0]: Assignment received from leader for group gid for generation 1 (kafka.coordinator.group.GroupCoordinator)
[2021-09-19 08:47:39,908] INFO Updated PartitionLeaderEpoch. New: {epoch:0, offset:0}, Current: {epoch:-1, offset:-1} for Partition: __consumer_offsets-0. Cache now contains 0 entries. (kafka.server.epoch.Leader
EpochFileCache)
[2021-09-19 08:52:19,030] INFO [GroupMetadataManager brokerId=0] Removed 0 expired offsets in 5 milliseconds. (kafka.coordinator.group.GroupMetadataManager)
```

To implement Order, Payment and Stock Server:

- Create topic for Kafka:

- Run 3 services:

Please refer attached codes.