

Lab 8

Part 1

Created 2 topics

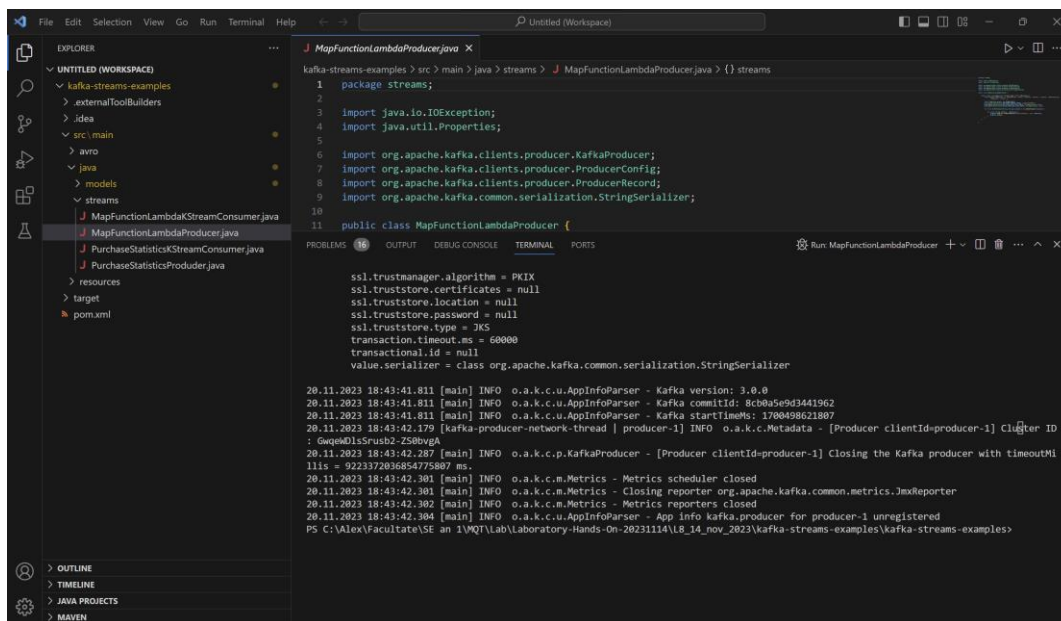
```
Windows PowerShell
PS C:\Alex\Facultate\SE an 1\MQT\Lab\Laboratory-Hands-On-20231114\L8_14_nov_2023> docker exec -ti kafka /usr/bin/kafka-topics --create --bootstrap-s
erver localhost:9092 --topic TextLinesTopic --partitions 10
Created topic TextLinesTopic.
PS C:\Alex\Facultate\SE an 1\MQT\Lab\Laboratory-Hands-On-20231114\L8_14_nov_2023> docker exec -ti kafka /usr/bin/kafka-topics --create --bootstrap-s
erver localhost:9092 --topic UppercasedTextLinesTopic --partitions 10
Created topic UppercasedTextLinesTopic.
PS C:\Alex\Facultate\SE an 1\MQT\Lab\Laboratory-Hands-On-20231114\L8_14_nov_2023> |
```

Generated classes from avro files

The screenshot shows an IDE with the following components:

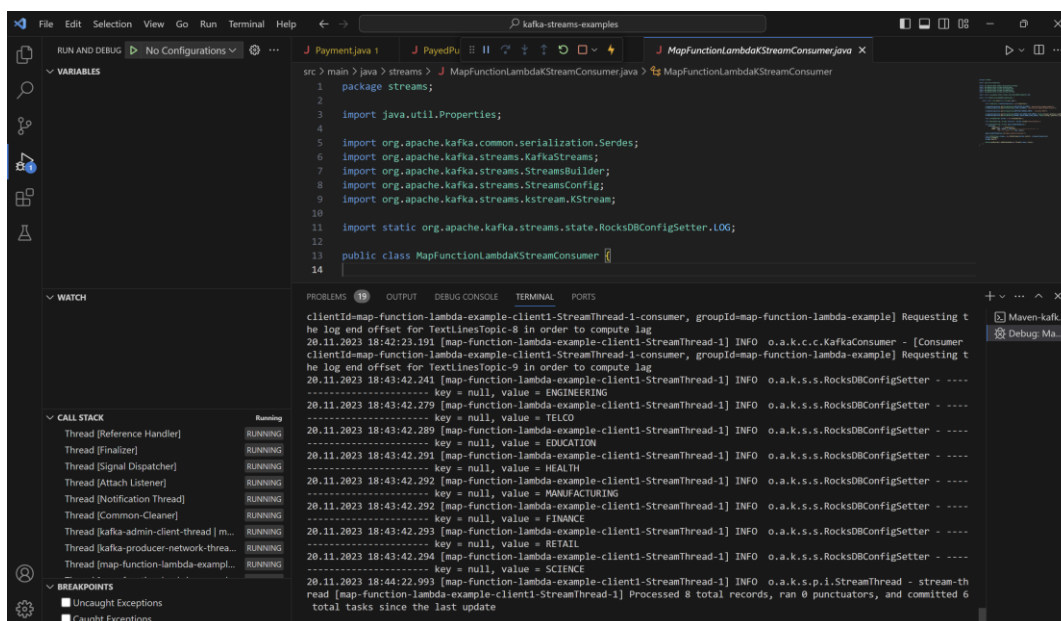
- EXPLORER:** Displays the project structure for 'KAFKA-STREAMS-EXAMPLES'. It includes folders for 'java' (containing 'models' and 'streams'), 'resources', 'target' (containing 'classes' and 'generated-sources'), and 'test-classes'. The 'models' folder is expanded, showing 'PayedPurchase.java', 'Payment.java', and 'Purchase.java'.
- EDITOR:** Shows the content of 'PayedPurchase.java'. The code is autogenerated by Avro and includes imports for Avro classes, package declarations, and class definitions for 'PayedPurchase' and 'PayedPurchaseEncoder'.
- PROBLEMS:** Displays 19 warnings related to deprecated configuration keys: 'resource.loader', 'class.resource.loader.class', and 'file.resource.loader.class'.

MapFunctionLambdaProducer run output



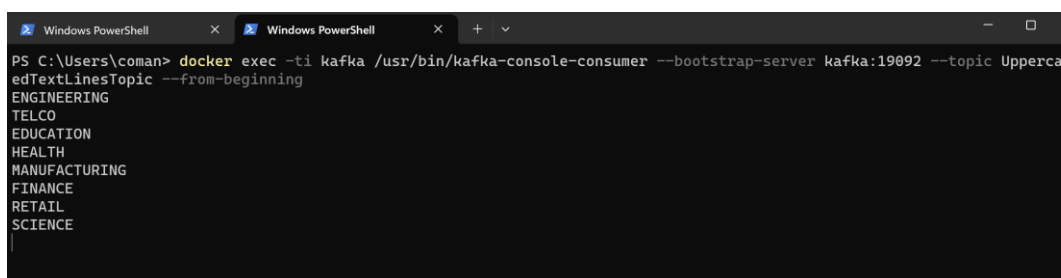
```
File Edit Selection View Go Run Terminal Help
kafka-streams-examples > src > main > java > streams > J MapFunctionLambdaProducer.java > {} streams
1 package streams;
2
3 import java.io.IOException;
4 import java.util.Properties;
5
6 import org.apache.kafka.clients.producer.KafkaProducer;
7 import org.apache.kafka.clients.producer.ProducerConfig;
8 import org.apache.kafka.clients.producer.ProducerRecord;
9 import org.apache.kafka.common.serialization.StringSerializer;
10
11 public class MapFunctionLambdaProducer {
12
13     ssl.trustmanager.algorithm = PKIX
14     ssl.truststore.certificates = null
15     ssl.truststore.location = null
16     ssl.truststore.password = null
17     ssl.truststore.type = JKS
18     transaction.timeout.ms = 60000
19     transactional.id = null
20     value.serializer = class org.apache.kafka.common.serialization.StringSerializer
21
22 20.11.2023 18:43:41.811 [main] INFO o.a.k.c.u.AppInfoParser - Kafka version: 3.0.0
23 20.11.2023 18:43:41.811 [main] INFO o.a.k.c.u.AppInfoParser - Kafka commitId: 8c80a5e9d3441962
24 20.11.2023 18:43:41.811 [main] INFO o.a.k.c.u.AppInfoParser - Kafka startTimeMs: 1700498621807
25 20.11.2023 18:43:42.179 [kafka-producer-network-thread | producer-1] INFO o.a.k.c.Metadata - [Producer clientId=producer-1] Cluster ID
26 : GwqoDlsSrnsb2-Z58bvgA
27 20.11.2023 18:43:42.287 [main] INFO o.a.k.c.p.KafkaProducer - [Producer clientId=producer-1] Closing the Kafka producer with timeoutMi
28 llis = 9223372036854775807 ms.
29 20.11.2023 18:43:42.301 [main] INFO o.a.k.c.m.Metrics - Metrics scheduler closed
30 20.11.2023 18:43:42.301 [main] INFO o.a.k.c.m.Metrics - Closing reporter org.apache.kafka.common.metrics.JmxReporter
31 20.11.2023 18:43:42.302 [main] INFO o.a.k.c.m.Metrics - Metrics reporters closed
32 20.11.2023 18:43:42.304 [main] INFO o.a.k.c.u.AppInfoParser - App info kafka-producer for producer-1 unregistered
33 PS C:\Alex\Facultate\SE an 1\QVT(Lab)\Laboratory-Hands-On-20231114\18_14_nov_2023\kafka-streams-examples\kafka-streams-examples>
```

MapFunctionLambdaKStreamConsumer run output



```
File Edit Selection View Go Run Terminal Help
kafka-streams-examples
RUN AND DEBUG No Configurations
VARIABLES
WATCH
CALL STACK
BREAKPOINTS
MapFunctionLambdaKStreamConsumer
1 package streams;
2
3 import java.util.Properties;
4
5 import org.apache.kafka.common.serialization.Serdes;
6 import org.apache.kafka.streams.KafkaStreams;
7 import org.apache.kafka.streams.StreamBuilder;
8 import org.apache.kafka.streams.StreamsConfig;
9 import org.apache.kafka.streams.KStream;
10
11 import static org.apache.kafka.streams.state.RocksDBConfigSetter.LOG;
12
13 public class MapFunctionLambdaKStreamConsumer {
14
15 clientId-map-function-lambda-example-client1-StreamThread-1-consumer, groupId-map-function-lambda-example] Requesting t
16 he log end offset for TextLinesTopic-8 in order to compute lag
17 20.11.2023 18:42:23.191 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.c.c.KafkaConsumer - [Consumer
18 clientId-map-function-lambda-example-client1-StreamThread-1-consumer, groupId-map-function-lambda-example] Requesting t
19 he log end offset for TextLinesTopic-9 in order to compute lag
20 20.11.2023 18:43:42.241 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter ----
21 ----- key = null, value = ENGINEERING
22 20.11.2023 18:43:42.279 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter ----
23 ----- key = null, value = TELCO
24 20.11.2023 18:43:42.289 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter ----
25 ----- key = null, value = EDUCATION
26 20.11.2023 18:43:42.291 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter ----
27 ----- key = null, value = HEALTH
28 20.11.2023 18:43:42.292 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter ----
29 ----- key = null, value = MANUFACTURING
30 20.11.2023 18:43:42.292 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter ----
31 ----- key = null, value = FINANCE
32 20.11.2023 18:43:42.293 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter ----
33 ----- key = null, value = RETAIL
34 20.11.2023 18:43:42.294 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter ----
35 ----- key = null, value = SCIENCE
36 20.11.2023 18:44:22.993 [map-function-lambda-example-client1-StreamThread-1] INFO o.a.k.s.p.i.StreamThread - stream-th
37 read [map-function-lambda-example-client1-StreamThread-1] Processed 8 total records, ran 0 punctuators, and committed 6
38 total tasks since the last update
```

UppercasedTextLinesTopic topic



```
Windows PowerShell
PS C:\Users\coman> docker exec -ti kafka /usr/bin/kafka-console-consumer --bootstrap-server kafka:19092 --topic UppercasedTextLinesTopic --from-beginning
ENGINEERING
TELCO
EDUCATION
HEALTH
MANUFACTURING
FINANCE
RETAIL
SCIENCE
```

Part 2

Topics created

```
Windows PowerShell
PS C:\Users\coman> docker exec -ti kafka /usr/bin/kafka-topics --create --bootstrap-server localhost:9092 --topic Purchases --partitions 10
Created topic Purchases.
PS C:\Users\coman> docker exec -ti kafka /usr/bin/kafka-topics --create --bootstrap-server localhost:9092 --topic PurchaseStatistics --partitions 10
Created topic PurchaseStatistics.
PS C:\Users\coman> |
```

PurchaseStatisticsProduder run output

```
File Edit Selection View Go Run Terminal Help
PurchaseStatisticsProduder.java X
kafka-streams-examples > src > main > java > streams > J PurchaseStatisticsProduder.java > ...
1 package streams;
2
3 import java.io.IOException;
4 import java.util.Properties;
5 import java.util.Random;
6
20.11.2023 18:49:33.894 [main] INFO o.a.k.s.s.RocksDBConfigSetter - 44444444444444444444 + id = 35, product name = hair dryer, amount = 1, sum = 10.0, customerId = 2, schema = ("type":"record","name":"Purchase","namespace":"models","fields":[{"name":"id","type":"long"}, {"name":"product","type":"string"}, {"name":"amount","type":"long"}, {"name":"sum","type":"float"}, {"name":"customerId","type":"long"}])
20.11.2023 18:49:33.897 [main] INFO o.a.k.s.s.RocksDBConfigSetter - 44444444444444444444 + id = 36, product name = toaster, amount = 3, sum = 10.0, customerId = 4, schema = ("type":"record","name":"Purchase","namespace":"models","fields":[{"name":"id","type":"long"}, {"name":"product","type":"string"}, {"name":"amount","type":"long"}, {"name":"sum","type":"float"}, {"name":"customerId","type":"long"}])
20.11.2023 18:49:33.900 [main] INFO o.a.k.s.s.RocksDBConfigSetter - 44444444444444444444 + id = 37, product name = toaster, amount = 4, sum = 10.0, customerId = 1, schema = ("type":"record","name":"Purchase","namespace":"models","fields":[{"name":"id","type":"long"}, {"name":"product","type":"string"}, {"name":"amount","type":"long"}, {"name":"sum","type":"float"}, {"name":"customerId","type":"long"}])
20.11.2023 18:49:33.903 [main] INFO o.a.k.s.s.RocksDBConfigSetter - 44444444444444444444 + id = 38, product name = grill, amount = 4, sum = 10.0, customerId = 4, schema = ("type":"record","name":"Purchase","namespace":"models","fields":[{"name":"id","type":"long"}, {"name":"product","type":"string"}, {"name":"amount","type":"long"}, {"name":"sum","type":"float"}, {"name":"customerId","type":"long"}])
20.11.2023 18:49:33.905 [main] INFO o.a.k.s.s.RocksDBConfigSetter - 44444444444444444444 + id = 39, product name = hair dryer, amount = 1, sum = 10.0, customerId = 4, schema = ("type":"record","name":"Purchase","namespace":"models","fields":[{"name":"id","type":"long"}, {"name":"product","type":"string"}, {"name":"amount","type":"long"}, {"name":"sum","type":"float"}, {"name":"customerId","type":"long"}])
20.11.2023 18:49:33.907 [main] INFO o.a.k.c.p.KafkaProducer - [Producer clientId=producer-1] Closing the Kafka producer with timeoutMillis = 9223372036854775807 ms.
20.11.2023 18:49:33.922 [main] INFO o.a.k.c.m.Metrics - Metrics scheduler closed
20.11.2023 18:49:33.922 [main] INFO o.a.k.c.m.Metrics - Closing reporter org.apache.kafka.common.metrics.JmxReporter
20.11.2023 18:49:33.922 [main] INFO o.a.k.c.m.Metrics - Metrics reporters closed
20.11.2023 18:49:33.922 [main] INFO o.a.k.c.u.AppInfoParser - App info kafka.producer for producer-1 unregistered
PS C:\Alex\Facultate\SE an 1\WQT\Lab\Laboratory-Hands-On-20231114\U8_14_nov_2023\kafka-streams-examples\kafka-streams-examples>
```

PurchaseStatisticsKStreamConsumer run output

```
File Edit Selection View Go Run Terminal Help
kafka-streams-examples
J Payment.java 1 J PayerPurchase.java 1 J PurchaseStatisticsKStreamConsumer.java X
src > main > java > streams > J PurchaseStatisticsKStreamConsumer.java > {} streams
1 package streams;
2
3 import java.util.Collections;
4 import java.util.Properties;
5
6 // =====> models <=====
7
8 // =====&;
9
10 epoch=0)).
20.11.2023 18:49:07.396 [count-purchases-example-client-StreamThread-1] INFO o.a.k.c.c.i.SubscriptionState - [Consumer clientId=count-purchases-example-client-StreamThread-1-consumer, groupId=count-purchases-example] Resetting offset for partition count-purchases-example-KSTREAM-AGGREGATE-STATE-STORE-0000000002 repartition-5 to position FetchPosition(offset=0, offsetEpoch=Optional.empty, currentLeader=LeaderAndEpoch[leader=Optional[localhost:9092 (id: 1001 rack: null)], epoch=0]).
20.11.2023 18:49:07.397 [count-purchases-example-client-StreamThread-1] INFO o.a.k.c.c.i.SubscriptionState - [Consumer clientId=count-purchases-example-client-StreamThread-1-consumer, groupId=count-purchases-example] Resetting offset for partition count-purchases-example-KSTREAM-AGGREGATE-STATE-STORE-0000000002 repartition-2 to position FetchPosition(offset=0, offsetEpoch=Optional.empty, currentLeader=LeaderAndEpoch[leader=Optional[localhost:9092 (id: 1001 rack: null)], epoch=0]).
20.11.2023 18:49:07.403 [count-purchases-example-client-StreamThread-1] INFO o.a.k.c.c.i.SubscriptionState - [Consumer clientId=count-purchases-example-client-StreamThread-1-consumer, groupId=count-purchases-example] Resetting offset for partition count-purchases-example-KSTREAM-AGGREGATE-STATE-STORE-0000000002 repartition-3 to position FetchPosition(offset=0, offsetEpoch=Optional.empty, currentLeader=LeaderAndEpoch[leader=Optional[localhost:9092 (id: 1001 rack: null)], epoch=0]).
20.11.2023 18:49:37.475 [count-purchases-example-client-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter - 5555555555555555 + groupId = kettle, value = 11
20.11.2023 18:49:37.482 [count-purchases-example-client-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter - 5555555555555555 + groupId = toaster, value = 14
20.11.2023 18:49:37.483 [count-purchases-example-client-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter - 5555555555555555 + groupId = grill, value = 4
20.11.2023 18:49:37.497 [count-purchases-example-client-StreamThread-1] INFO o.a.k.s.s.RocksDBConfigSetter - 5555555555555555 + groupId = hair dryer, value = 11
```

PurchaseStatistics topic

```
Windows PowerShell
PS C:\Users\coman> docker exec -ti kafka /usr/bin/kafka-console-consumer --bootstrap-server kafka:19092 --topic PurchaseStatistics --from-beginning
11
11
14
4
```