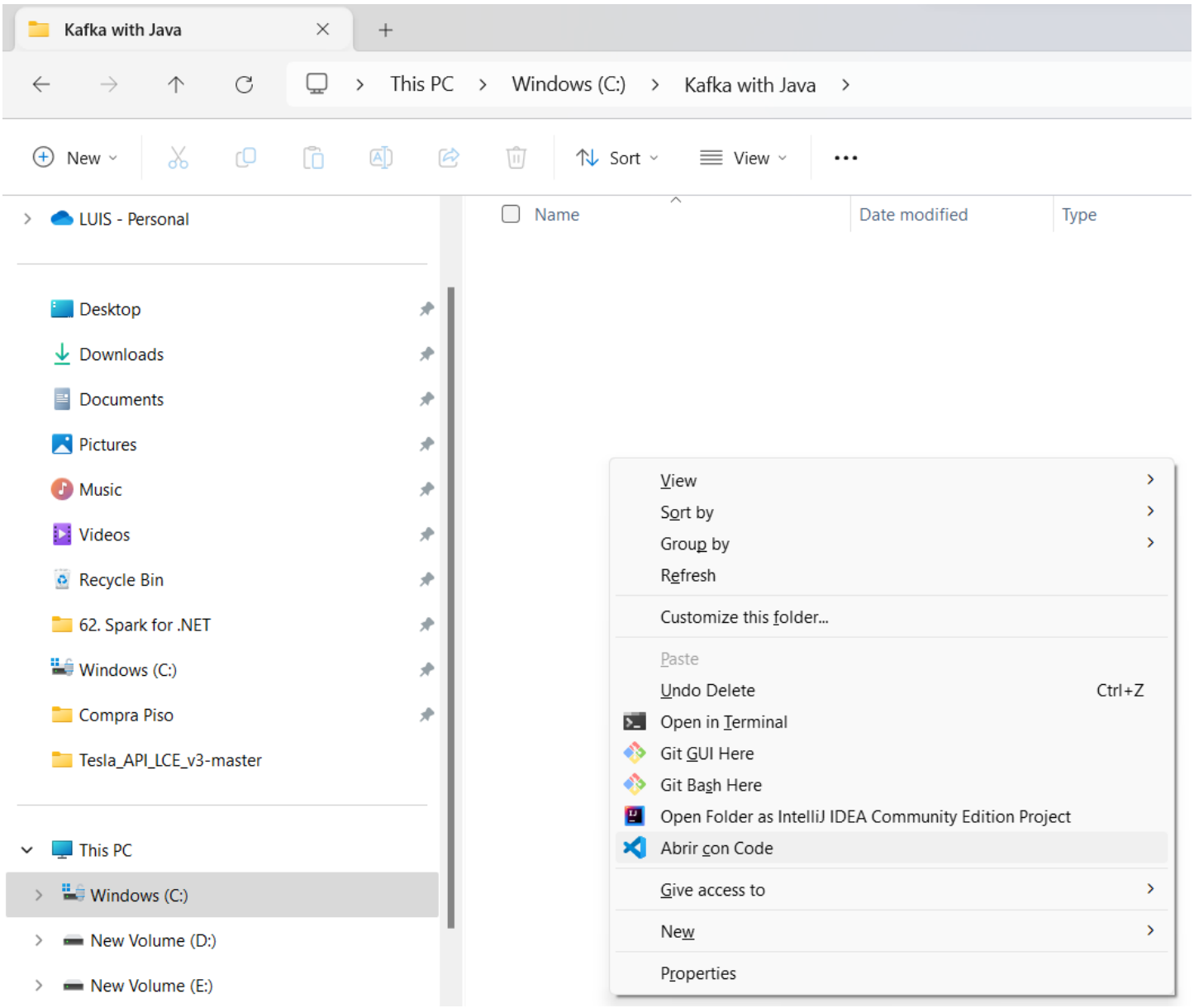
Kafka Java Consumer application

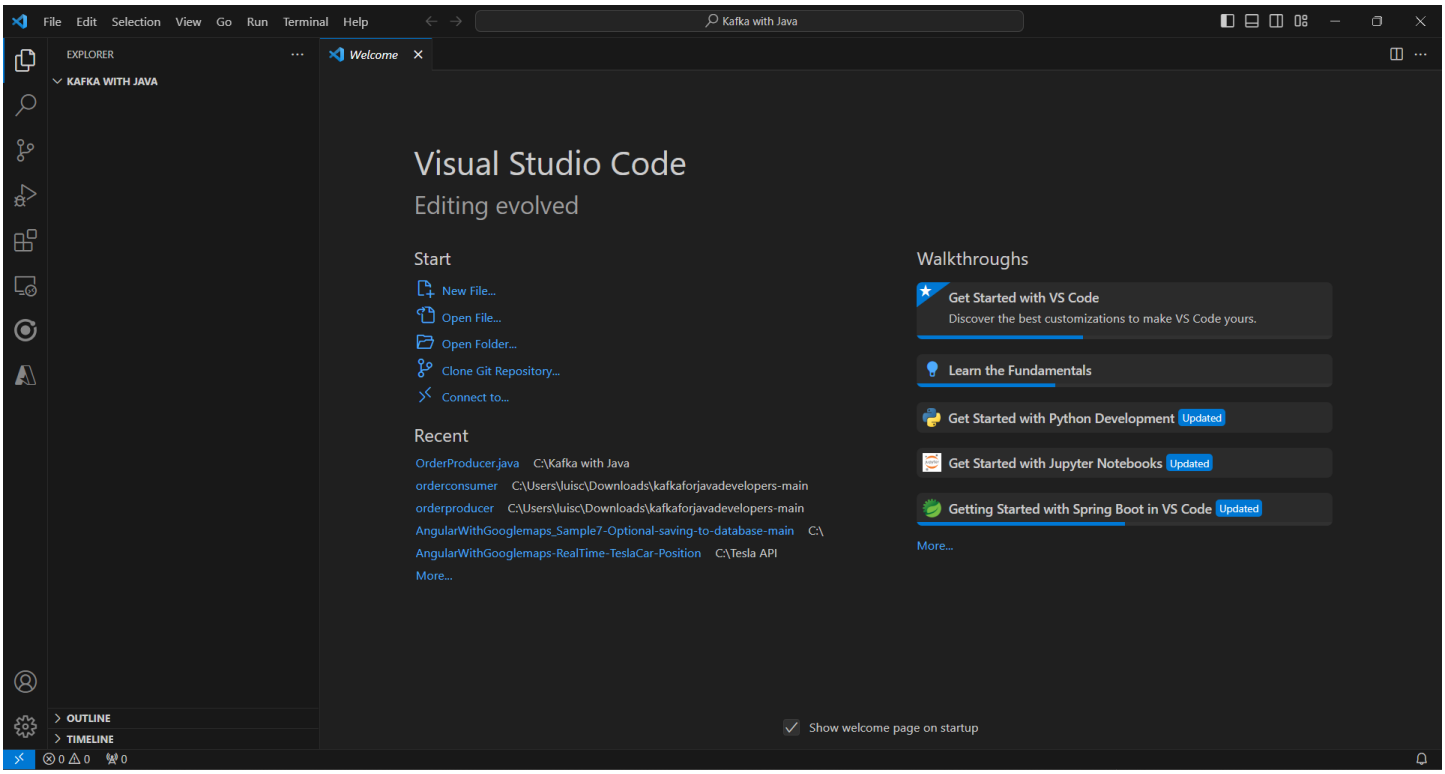
https://github.com/luiscoco/Kafka_Java_Consumer

Create a Kafka Consumer Java application with VSCode

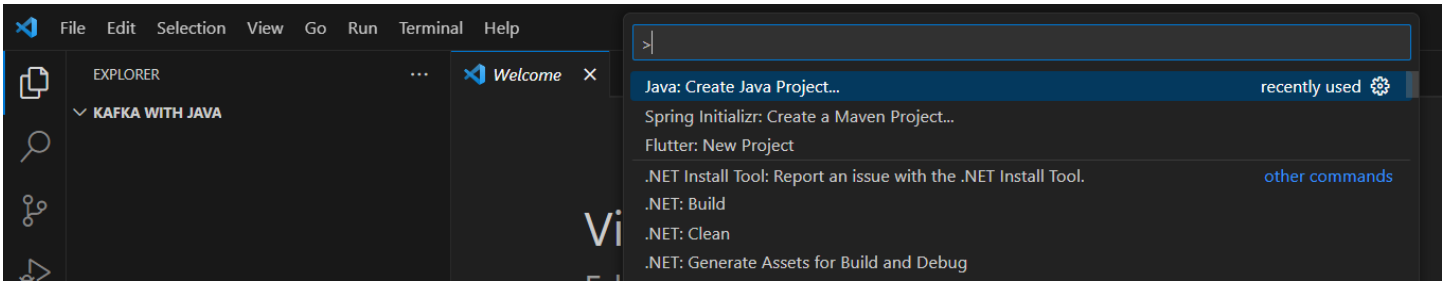
We create a new folder to place the Java application.

We right click inside the folder and we select the option **Open with VSCode**.

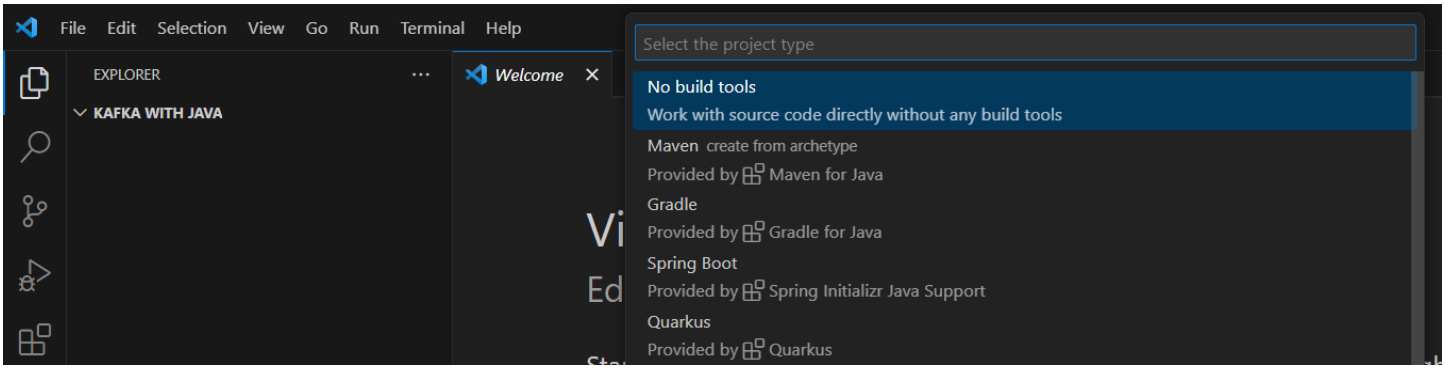




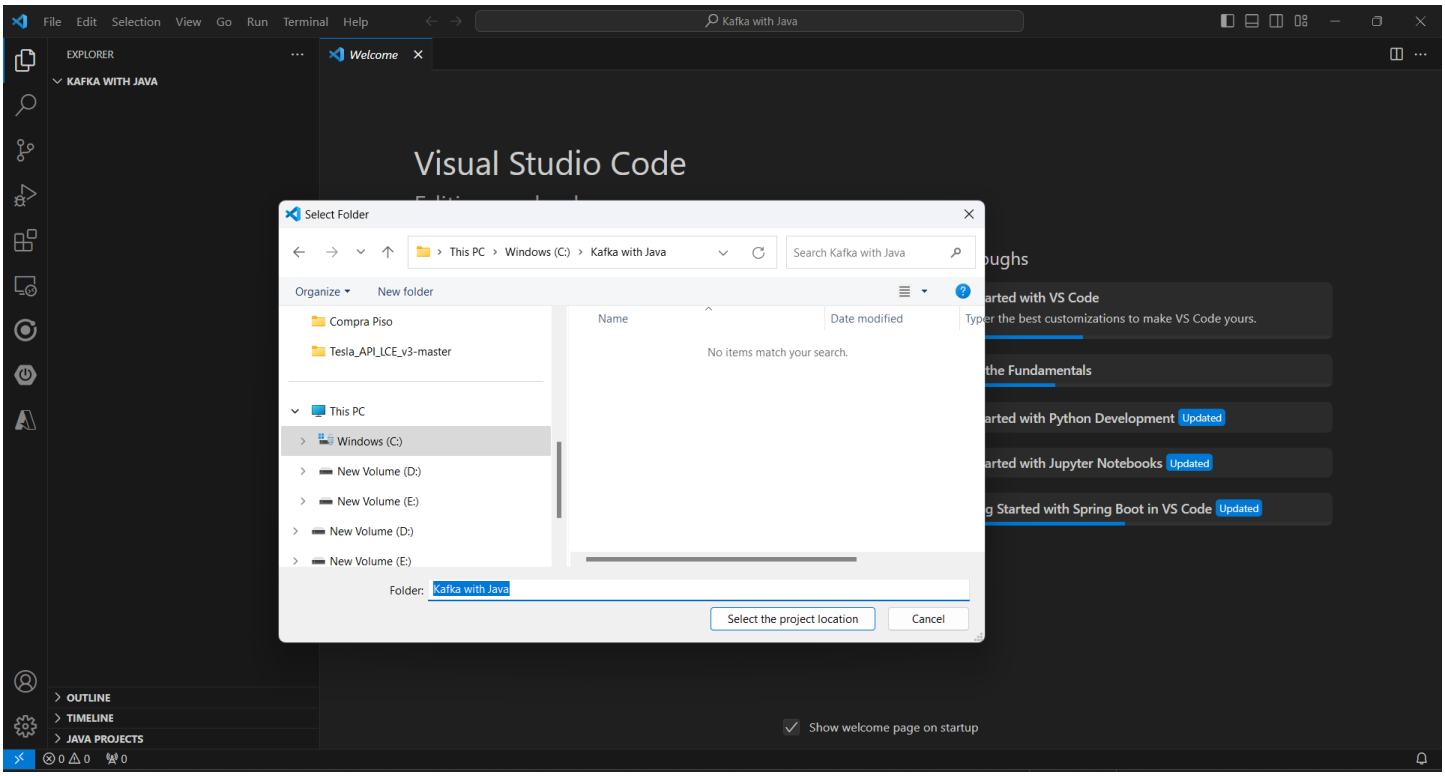
We press the keys **Ctl+Shift+P** to create a **new Java application in VSCode**



We select the first option **No build tools**



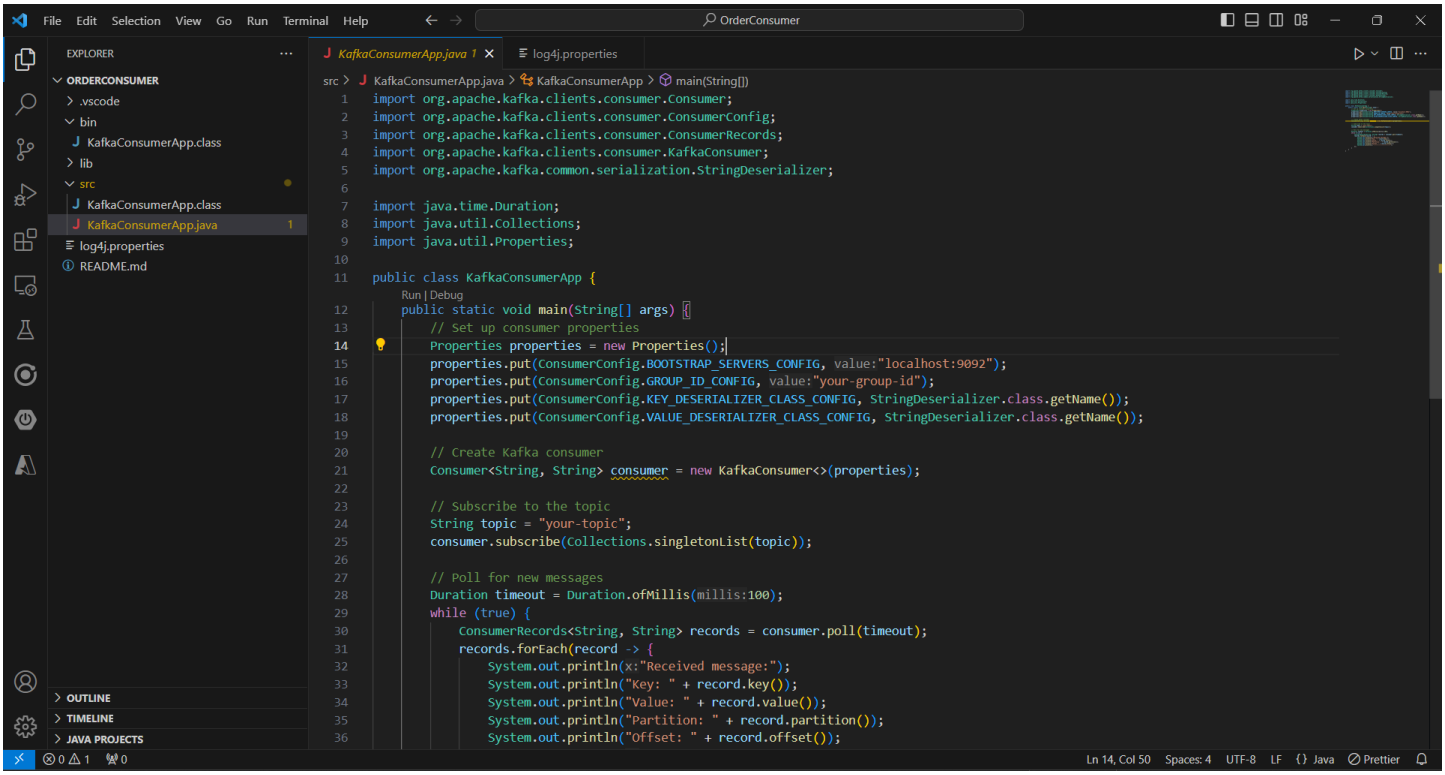
Now we select the folder where to place the new Java application



Rename the App.java to **KafkaConsumerApp.java**, and then input the following **source code**:

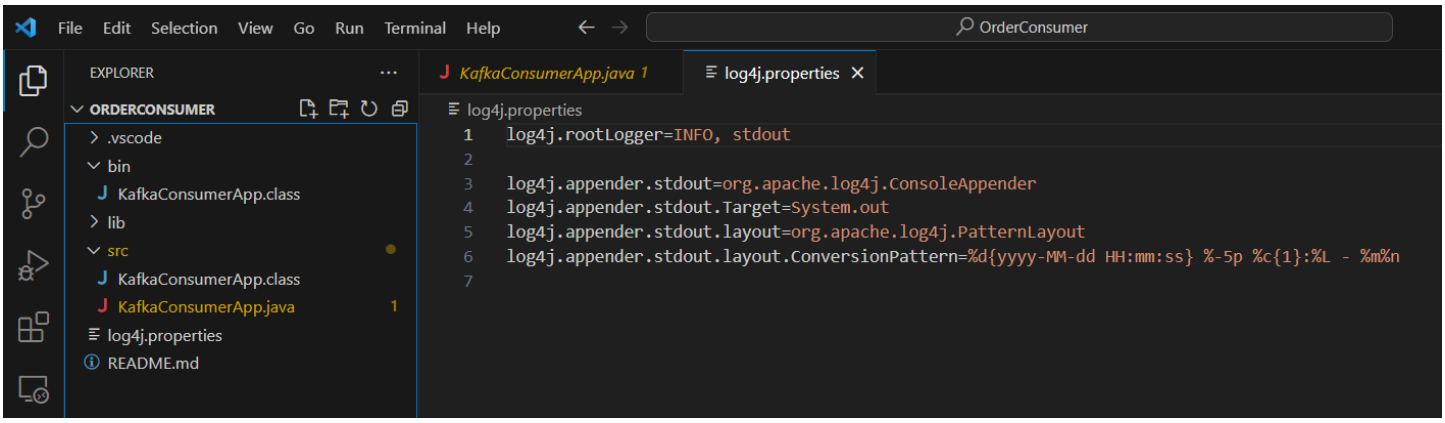
```
import org.apache.kafka.clients.consumer.Consumer;
import org.apache.kafka.clients.consumer.ConsumerConfig;
import org.apache.kafka.clients.consumer.ConsumerRecords;
import org.apache.kafka.clients.consumer.KafkaConsumer;
import org.apache.kafka.common.serialization.StringDeserializer;

import java.time.Duration;
import java.util.Collections;
import java.util.Properties;

public class KafkaConsumerApp {
    public static void main(String[] args) {
        // Set up consumer properties
        Properties properties = new Properties();
        properties.put(ConsumerConfig.BOOTSTRAP_SERVERS_CONFIG, "localhost:9092");
        properties.put(ConsumerConfig.GROUP_ID_CONFIG, "your-group-id");
        properties.put(ConsumerConfig.KEY_DESERIALIZER_CLASS_CONFIG, StringDeserializer.class.
        properties.put(ConsumerConfig.VALUE_DESERIALIZER_CLASS_CONFIG, StringDeserializer.clas

        // Create Kafka consumer
        Consumer<String, String> consumer = new KafkaConsumer<>(properties);

        // Subscribe to the topic
        String topic = "your-topic";
        consumer.subscribe(Collections.singletonList(topic));

        // Poll for new messages
        Duration timeout = Duration.ofMillis(100);
        while (true) {
```

```
            ConsumerRecords<String, String> records = consumer.poll(timeout);
            records.forEach(record -> {
                System.out.println("Received message:");
                System.out.println("Key: " + record.key());
                System.out.println("Value: " + record.value());
                System.out.println("Partition: " + record.partition());
                System.out.println("Offset: " + record.offset());
                System.out.println("----------------------");
            });
        }
    }
}
```

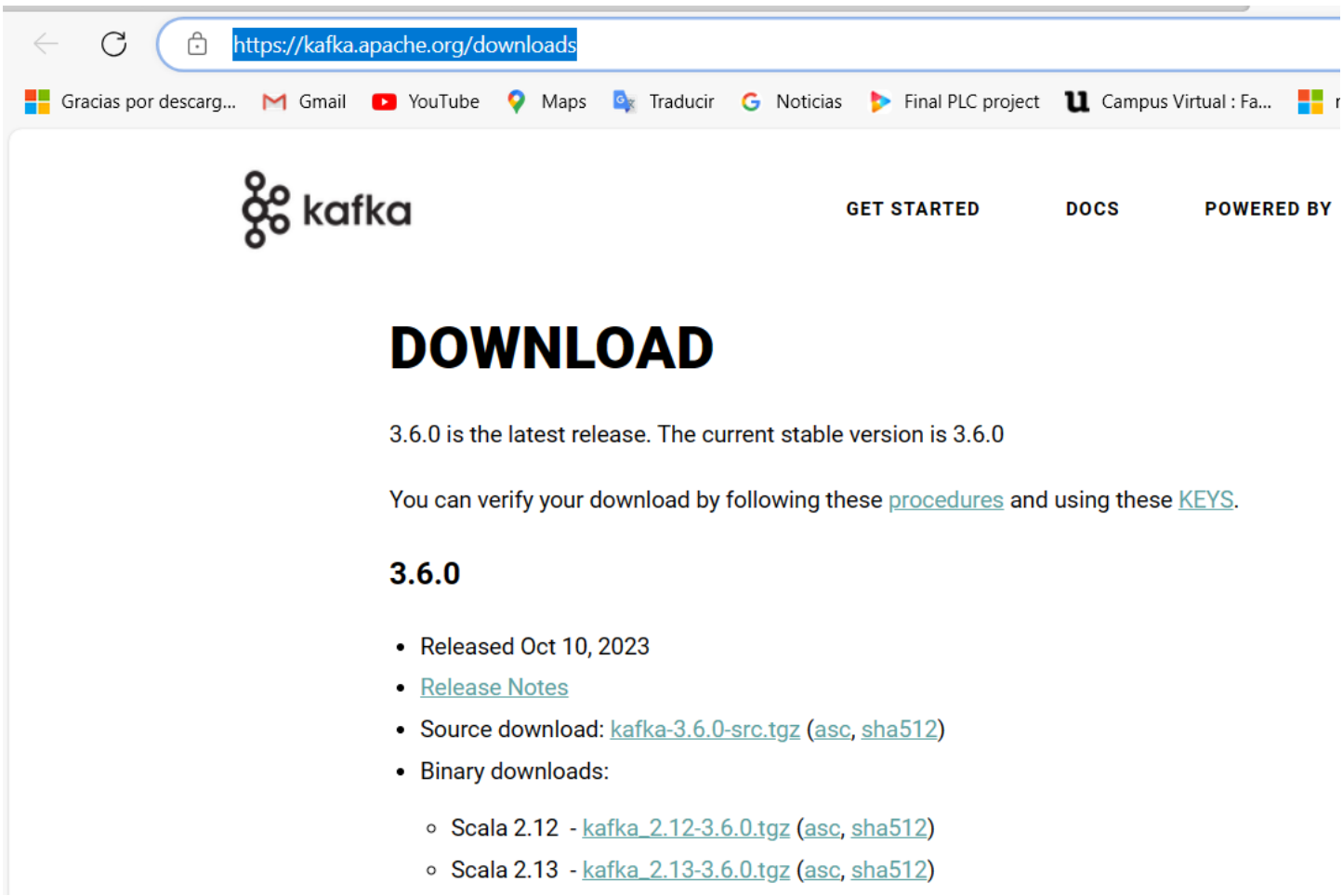


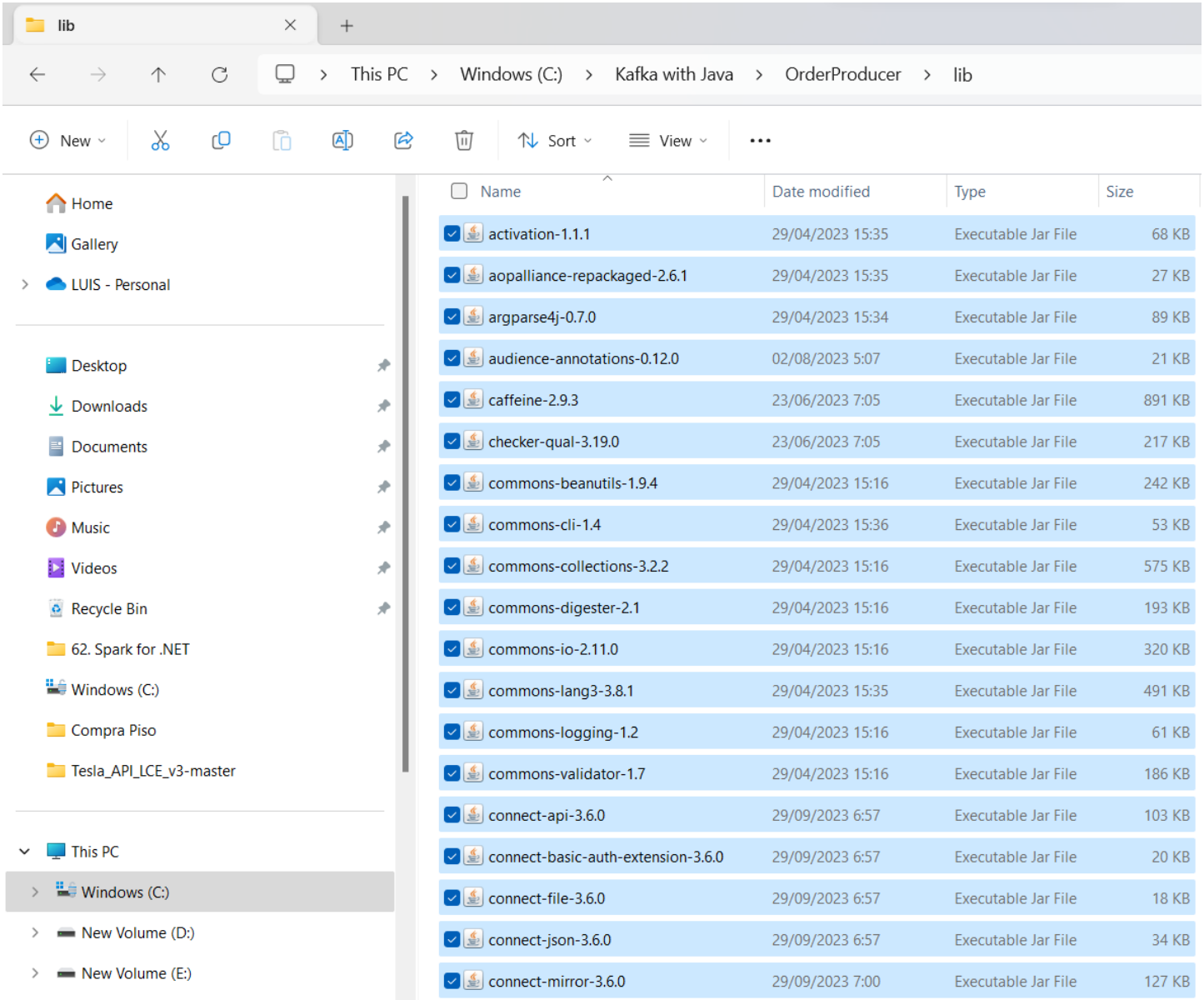
Then we create the **log4j.properties** file in the application root:

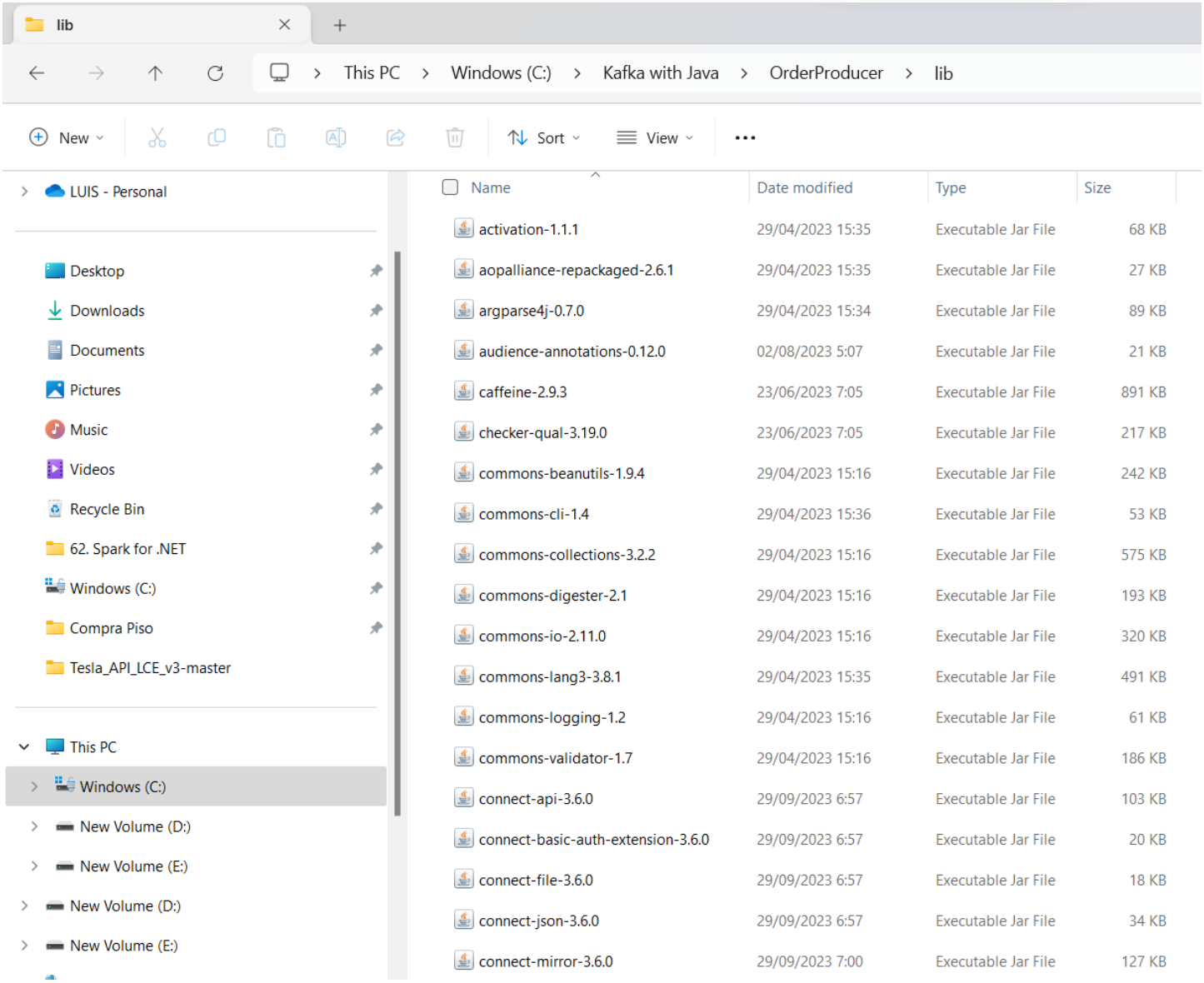
```
log4j.rootLogger=INFO, stdout

log4j.appender.stdout=org.apache.log4j.ConsoleAppender
log4j.appender.stdout.Target=System.out
log4j.appender.stdout.layout=org.apache.log4j.PatternLayout
log4j.appender.stdout.layout.ConversionPattern=%d{yyyy-MM-dd HH:mm:ss} %-5p %c{1}:%L - %m%n
```



Then we **donwload Kafka JAR files** from Apache Kafka web page (https://kafka.apache.org/downloads), and we place the JAR files in the Kafka producer Java application **lib** folder




lib
This PC
Windows (C:)
Kafka with Java
OrderProducer
lib
New
Sort
View
Home
Gallery
LUIS - Personal
Desktop
Downloads
Documents
Pictures
Music
Videos
Recycle Bin
62. Spark for .NET
Windows (C:)
Compra Piso
Tesla_API_LCE_v3-master
This PC
Windows (C:)
New Volume (D:)
New Volume (E:)
Name
Date modified
Type
Size
activation-1.1.1 29/04/2023 15:35 Executable Jar File 68 KB
aopalliance-repackaged-2.6.1 29/04/2023 15:35 Executable Jar File 27 KB
argparse4j-0.7.0 29/04/2023 15:34 Executable Jar File 89 KB
audience-annotations-0.12.0 02/08/2023 5:07 Executable Jar File 21 KB
caffeine-2.9.3 23/06/2023 7:05 Executable Jar File 891 KB
checker-qual-3.19.0 23/06/2023 7:05 Executable Jar File 217 KB
commons-beanutils-1.9.4 29/04/2023 15:16 Executable Jar File 242 KB
commons-cli-1.4 29/04/2023 15:36 Executable Jar File 53 KB
commons-collections-3.2.2 29/04/2023 15:16 Executable Jar File 575 KB
commons-digester-2.1 29/04/2023 15:16 Executable Jar File 193 KB
commons-io-2.11.0 29/04/2023 15:16 Executable Jar File 320 KB
commons-lang3-3.8.1 29/04/2023 15:35 Executable Jar File 491 KB
commons-logging-1.2 29/04/2023 15:16 Executable Jar File 61 KB
commons-validator-1.7 29/04/2023 15:16 Executable Jar File 186 KB
connect-api-3.6.0 29/09/2023 6:57 Executable Jar File 103 KB
connect-basic-auth-extension-3.6.0 29/09/2023 6:57 Executable Jar File 20 KB
connect-file-3.6.0 29/09/2023 6:57 Executable Jar File 18 KB
connect-json-3.6.0 29/09/2023 6:57 Executable Jar File 34 KB
connect-mirror-3.6.0 29/09/2023 7:00 Executable Jar File 127 KB


lib
This PC
Windows (C:)
Kafka with Java
OrderProducer
lib
New
Sort
View
LUIS - Personal
Desktop
Downloads
Documents
Pictures
Music
Videos
Recycle Bin
62. Spark for .NET
Windows (C:)
Compra Piso
Tesla_API_LCE_v3-master
This PC
Windows (C:)
New Volume (D:)
New Volume (E:)
New Volume (D:)
New Volume (E:)
Name
Date modified
Type
Size
activation-1.1.1 29/04/2023 15:35 Executable Jar File 68 KB
aopalliance-repackaged-2.6.1 29/04/2023 15:35 Executable Jar File 27 KB
argparse4j-0.7.0 29/04/2023 15:34 Executable Jar File 89 KB
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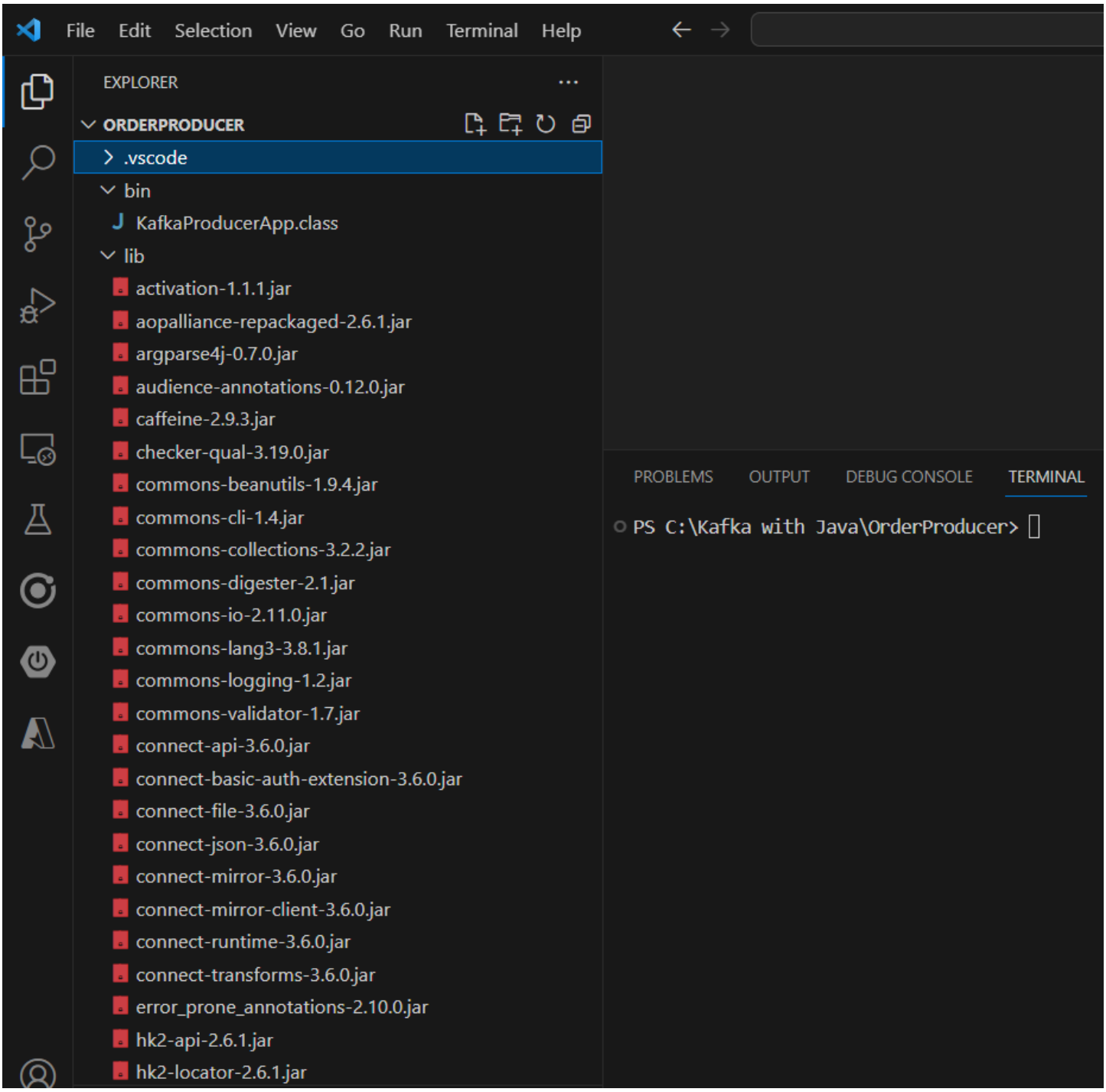
connect-mirror-3.6.0 29/09/2023 7:00 Executable Jar File 127 KB



To **compile** the Kafka Consumer Java application

```
C:\Kafka with Java\OrderConsumer> javac -cp "lib/*;src" src/KafkaConsumerApp.java
```

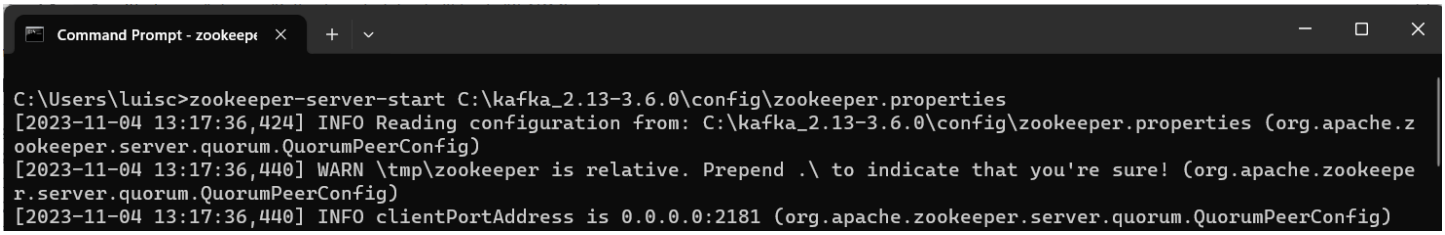
To **run** the Kafka Consumer Java application

```
C:\Kafka with Java\OrderConsumer> java -cp "lib/*;src;." KafkaConsumerApp
```

How to run the Consumer and the Producer Java applications

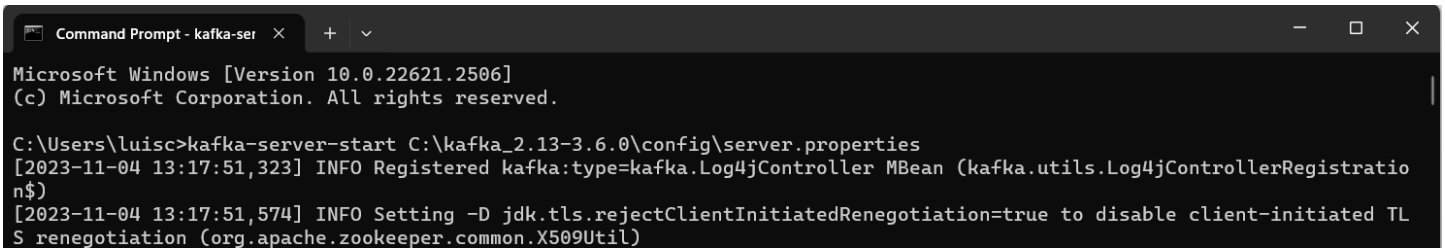
1. First we have to run the zookeeper-server-start command

```
zookeeper-server-start C:\kafka_2.13-3.6.0\config\zookeeper.properties
```



2. Open a command prompt window and run the command kafka-server-start

```
kafka-server-start C:\kafka_2.13-3.6.0\config\server.properties
```



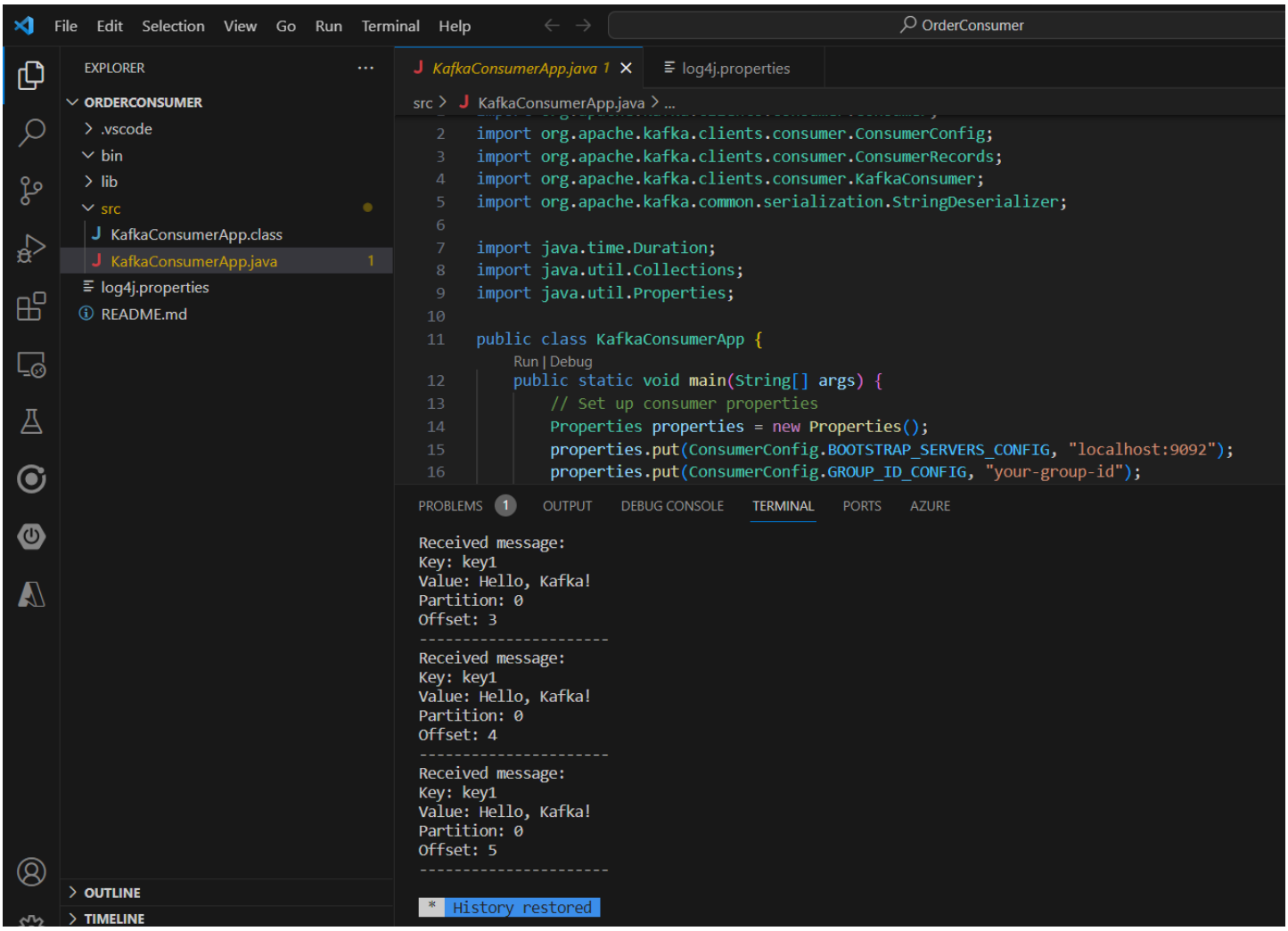
3. Then open with VSCode the Kafka Consumer application and run it

To **compile** the Kafka Consumer Java application

```
C:\Kafka with Java\OrderConsumer> javac -cp "lib/*;src" src/KafkaConsumerApp.java
```

To **run** the Kafka Consumer Java application

```
C:\Kafka with Java\OrderConsumer> java -cp "lib/*;src;." KafkaConsumerApp
```



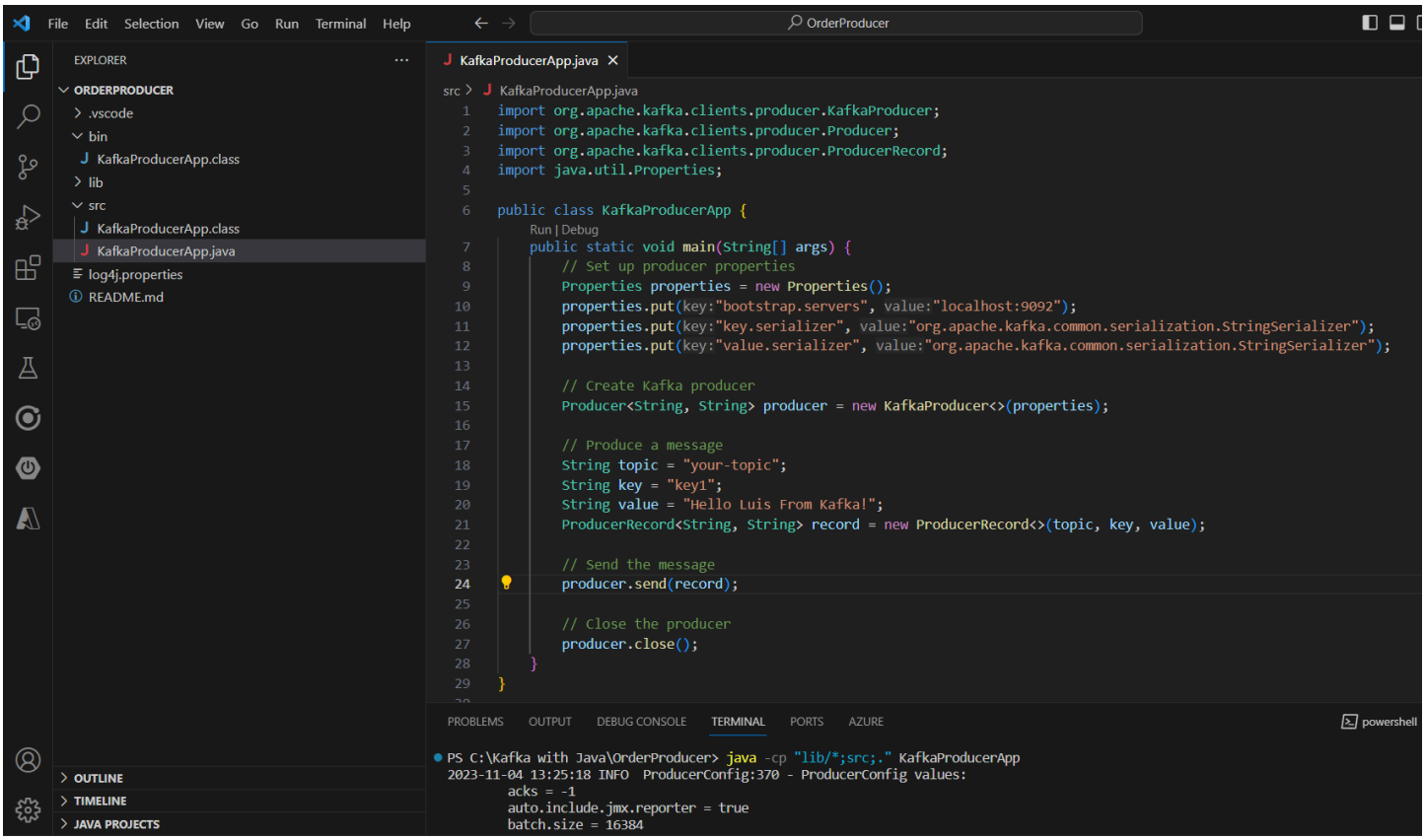
4. Then open with VSCode the Kafka Producer application and run it

To **compile** the Kafka Consumer Java application

```
C:\Kafka with Java\OrderProducer> javac -cp "lib/*;src" src/KafkaProducerApp.java
```

To **run** the Kafka Producer Java application

```
C:\Kafka with Java\OrderProducer> java -cp "lib/*;src;." KafkaProducerApp
```


File Edit Selection View Go Run Terminal Help
OrderProducer
EXPLORER
ORDERPRODUCER
.vscode
bin
KafkaProducerApp.class
lib
src
KafkaProducerApp.class
KafkaProducerApp.java
log4j.properties
README.md
OUTLINE
TIMELINE
JAVA PROJECTS
KafkaProducerApp.java
src > KafkaProducerApp.java
1 import org.apache.kafka.clients.producer.KafkaProducer;
2 import org.apache.kafka.clients.producer.Producer;
3 import org.apache.kafka.clients.producer.ProducerRecord;
4 import java.util.Properties;
5
6 public class KafkaProducerApp {
Run | Debug
7 public static void main(String[] args) {
8 // Set up producer properties
9 Properties properties = new Properties();
10 properties.put(key:"bootstrap.servers", value:"localhost:9092");
11 properties.put(key:"key.serializer", value:"org.apache.kafka.common.serialization.StringSerializer");
12 properties.put(key:"value.serializer", value:"org.apache.kafka.common.serialization.StringSerializer");
13
14 // Create Kafka producer
15 Producer<String, String> producer = new KafkaProducer<>(properties);
16
17 // Produce a message
18 String topic = "your-topic";
19 String key = "key1";
20 String value = "Hello Luis From Kafka!";
21 ProducerRecord<String, String> record = new ProducerRecord<>(topic, key, value);
22
23 // Send the message
24 producer.send(record);
25
26 // Close the producer
27 producer.close();
28 }
29 }
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS AZURE
powershell
PS C:\Kafka with Java\OrderProducer> java -cp "lib/*;src;." KafkaProducerApp
2023-11-04 13:25:18 INFO ProducerConfig:370 - ProducerConfig values:
acks = -1
auto.include.jmx.reporter = true
batch.size = 16384