

KAFKA INTEGRATION WITH C#:

1. Create a Chat Application which uses Kafka as a streaming platform and consume the chat messages in the command prompt.

```
Command Prompt - .\bin\win x Command Prompt - .\bin\win x Command Prompt x + v
C:\kafka_2.12-3.9.1>.bin\windows\zookeeper-server-start.bat .\config\zookeeper.properties
[2025-07-19 10:46:47,001] INFO Reading configuration from: .\config\zookeeper.properties (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
log4j:ERROR Failed to rename [C:\kafka_2.12-3.9.1\logs\server.log] to [C:\kafka_2.12-3.9.1\logs\server.log.2025-07-17-16].
[2025-07-19 10:46:47,046] WARN \tmp\zookeeper is relative. Prepend .\ to indicate that you're sure! (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,050] INFO clientPortAddress is 0.0.0.0:2181 (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,050] INFO secureClientPort is not set (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,050] INFO observerMasterPort is not set (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,050] INFO metricsProvider.className is org.apache.zookeeper.metrics.impl.DefaultMetricsProvider (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,057] INFO autopurge.snapRetainCount set to 3 (org.apache.zookeeper.server.DatadirCleanupManager)
[2025-07-19 10:46:47,057] INFO autopurge.purgeInterval set to 0 (org.apache.zookeeper.server.DatadirCleanupManager)
[2025-07-19 10:46:47,057] INFO Purge task is not scheduled. (org.apache.zookeeper.server.DatadirCleanupManager)
[2025-07-19 10:46:47,058] WARN Either no config or no quorum defined in config, running in standalone mode (org.apache.zookeeper.server.quorum.QuorumPeerMain)
[2025-07-19 10:46:47,065] INFO Log4j 1.2 jmx support not found; jmx disabled. (org.apache.zookeeper.jmx.ManagedUtil)
[2025-07-19 10:46:47,066] INFO Reading configuration from: .\config\zookeeper.properties (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,068] WARN \tmp\zookeeper is relative. Prepend .\ to indicate that you're sure! (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,068] INFO clientPortAddress is 0.0.0.0:2181 (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,069] INFO secureClientPort is not set (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,069] INFO observerMasterPort is not set (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,069] INFO metricsProvider.className is org.apache.zookeeper.metrics.impl.DefaultMetricsProvider (org.apache.zookeeper.server.quorum.QuorumPeerConfig)
[2025-07-19 10:46:47,069] INFO Starting server (org.apache.zookeeper.server.ZooKeeperServerMain)
[2025-07-19 10:46:47,111] INFO ServerMetrics initialized with provider org.apache.zookeeper.metrics.impl.DefaultMetricsProvider@56de5251 (org.apache.zookeeper.server.ServerMetrics)
[2025-07-19 10:46:47,119] INFO ACL digest algorithm is: SHA1 (org.apache.zookeeper.server.auth.DigestAuthenticationProvider)
[2025-07-19 10:46:47,119] INFO zookeeper.DigestAuthenticationProvider.enabled = true (org.apache.zookeeper.server.auth.DigestAuthenticationProvider)
```

```
Command Prompt - .\bin\win x Command Prompt - .\bin\win x Command Prompt x + v
C:\kafka_2.12-3.9.1>.bin\windows\kafka-server-start.bat .\config\server.properties
[2025-07-19 10:46:47,019] INFO Registered kafka:type=kafka.Log4jController MBean (kafka.utils.Log4jControllerRegistration$)
log4j:ERROR Failed to rename [C:\kafka_2.12-3.9.1\logs\server.log] to [C:\kafka_2.12-3.9.1\logs\server.log.2025-07-17-16].
[2025-07-19 10:46:47,906] INFO Setting -D jdk.tls.rejectClientInitiatedRenegotiation=true to disable client-initiated TLS renegotiation (org.apache.zookeeper.common.X509Util)
[2025-07-19 10:46:48,136] INFO starting (kafka.server.KafkaServer)
[2025-07-19 10:46:48,137] INFO Connecting to zookeeper on localhost:2181 (kafka.server.KafkaServer)
[2025-07-19 10:46:48,193] INFO [ZooKeeperClient Kafka server] Initializing a new session to localhost:2181. (kafka.zookeeper.ZooKeeperClient)
[2025-07-19 10:46:48,206] INFO Client environment:zookeeper.version=3.8.4-9316c2a7a97e1666d8f4593f34dd6fc36ecc436c, built on 2024-02-12 22:16 UTC (org.apache.zookeeper.ZooKeeper)
[2025-07-19 10:46:48,206] INFO Client environment:host.name=10.6.177.85 (org.apache.zookeeper.ZooKeeper)
[2025-07-19 10:46:48,207] INFO Client environment:java.version=18.0.2 (org.apache.zookeeper.ZooKeeper)
[2025-07-19 10:46:48,207] INFO Client environment:java.vendor=Oracle Corporation (org.apache.zookeeper.ZooKeeper)
[2025-07-19 10:46:48,207] INFO Client environment:java.home=C:\Program Files\Java\jdk-18.0.2 (org.apache.zookeeper.ZooKeeper)
[2025-07-19 10:46:48,207] INFO Client environment:java.class.path=C:\kafka_2.12-3.9.1\libs\activation-1.1.1.jar;C:\kafka_2.12-3.9.1\libs\aoapalliance-repackaged-2.6.1.jar;C:\kafka_2.12-3.9.1\libs\argparse4j-0.7.0.jar;C:\kafka_2.12-3.9.1\libs\audience-annotations-0.12.0.jar;C:\kafka_2.12-3.9.1\libs\caffeine-2.9.3.jar;C:\kafka_2.12-3.9.1\libs\commons-beanutils-1.9.4.jar;C:\kafka_2.12-3.9.1\libs\commons-cli-1.4.jar;C:\kafka_2.12-3.9.1\libs\commons-collections-3.2.2.jar;C:\kafka_2.12-3.9.1\libs\commons-digester-2.1.jar;C:\kafka_2.12-3.9.1\libs\commons-io-2.14.0.jar;C:\kafka_2.12-3.9.1\libs\commons-lang3-3.12.0.jar;C:\kafka_2.12-3.9.1\libs\commons-logging-1.2.jar;C:\kafka_2.12-3.9.1\libs\commons-validator-1.7.jar;C:\kafka_2.12-3.9.1\libs\connect-api-3.9.1.jar;C:\kafka_2.12-3.9.1\libs\connect-basic-auth-extension-3.9.1.jar;C:\kafka_2.12-3.9.1\libs\connect-file-3.9.1.jar;C:\kafka_2.12-3.9.1\libs\connect-json-3.9.1.jar;C:\kafka_2.12-3.9.1\libs\connect-mirror-3.9.1.jar;C:\kafka_2.12-3.9.1\libs\connect-mirror-client-3.9.1.jar;C:\kafka_2.12-3.9.1\libs\connect-runtime-3.9.1.jar;C:\kafka_2.12-3.9.1\libs\connect-transforms-3.9.1.jar;C:\kafka_2.12-3.9.1\libs\error_prone_annotations-2.10.0.jar;C:\kafka_2.12-3.9.1\libs\hk2-api-2.6.1.jar;C:\kafka_2.12-3.9.1\libs\hk2-locator-2.6.1.jar;C:\kafka_2.12-3.9.1\libs\hk2-utils-2.6.1.jar;C:\kafka_2.12-3.9.1\libs\jackson-annotations-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-core-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-databind-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-dataformat-csv-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-datatype-jdk8-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-jaxrs-base-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-jaxrs-json-provider-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-module-afterburner-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-module-jaxb-annotations-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jackson-module-scala_2.12-2.16.2.jar;C:\kafka_2.12-3.9.1\libs\jakarta.activation-api-1.2.2.jar;C:\kafka_2.12-3.9.1\libs\jakarta.annotation-api-1.3.5.jar;C:\kafka_2.12-3.9.1\libs\jakarta.inject-2.6.1.jar;C:\kafka_2.12-3.9.1\libs\jakarta.validation-api-2.0.2.jar;C:\kafka_2.12-3.9.1\libs\jakarta.ws.rs-api-2.1.6.jar;C:\kafka_2.12-3.9.1\libs\jakarta.xml.bind-api-2.3.3.jar;C:\kafka_2.12-3.9.1\libs\javassist-3.29.2-GA.jar;C:\kafka_2.12-3.9.1\libs\javax.activation-api-1.2.0.jar;C:\kafka_2.12-3.9.1\libs\javax.annotat
```

```
Command Prompt - .\bin\win x Command Prompt - .\bin\win x Command Prompt x + v
Microsoft Windows [Version 10.0.22631.5624]
(c) Microsoft Corporation. All rights reserved.

C:\Users\KII>cd C:\kafka_2.12-3.9.1

C:\kafka_2.12-3.9.1>.bin\windows\kafka-topics.bat --create --topic chat-topic --bootstrap-server localhost:9092 --partitions 1 --replication-factor 1
Created topic chat-topic.

C:\kafka_2.12-3.9.1>.bin\windows\kafka-topics.bat --list --bootstrap-server localhost:9092
chat-topic
```

```
Microsoft Visual Studio Debug Console
Choose Mode: 1 - Send | 2 - Receive
1
Enter message: hii this is sender on 19thjuly
Sent: hii this is sender on 19thjuly to chat-topic [[0]] @8
Enter message: hii this is sender2 on 19thjuly
Sent: hii this is sender2 on 19thjuly to chat-topic [[0]] @9
Enter message:
C:\Users\KIIT\Documents\Digital-Nurture-4.0-DotNetFSE-solution\Deepskill\week5\WebAPIKafka\KafkaChatApp\bin\Debug\net8.0\KafkaChatApp.exe (process 41096) exited with code -1073741510 (0xc000013a).
Press any key to close this window . . .
```

```
Microsoft Visual Studio Debug Console
Choose Mode: 1 - Send | 2 - Receive
2
Listening for messages...
Received: hii this is Sender
Received: hii sender1
Received: hiii sender1
Received: hello
Received: hii this is sender on 19thjuly
Received: hii this is sender2 on 19thjuly
C:\Users\KIIT\Documents\Digital-Nurture-4.0-DotNetFSE-solution\Deepskill\week5\WebAPIKafka\KafkaChatApp\bin\Debug\net8.0\KafkaChatApp.exe (process 45472) exited with code -1073741510 (0xc000013a).
Press any key to close this window . . .
```

2. Create a Chat Application using C# Windows Application using Kafka and consume the message in different client applications.

Form1

CHAT APPLICATION UI

You: hello this is sender3 on 19july

Type Here...

Send Recieve

Click here if you are simulating sender Click here if you are simulating reciever

Form1

CHAT APPLICATION UI

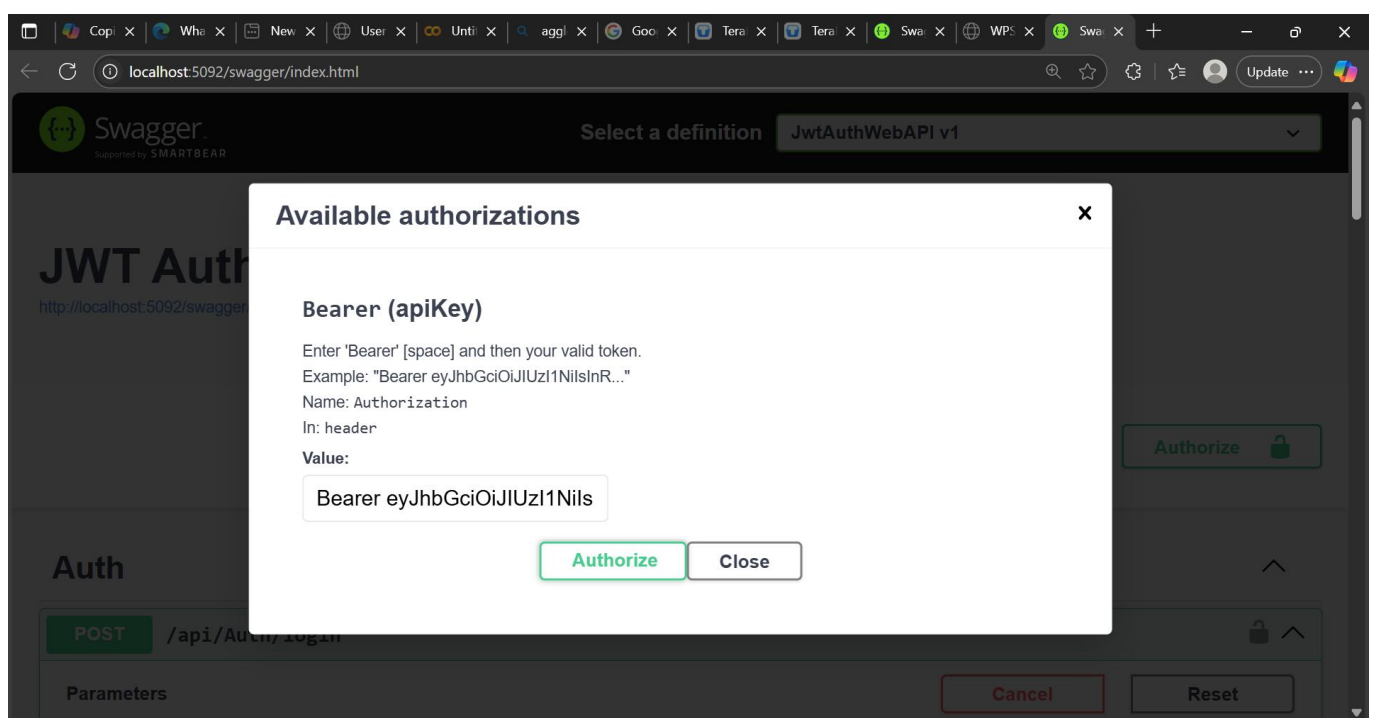
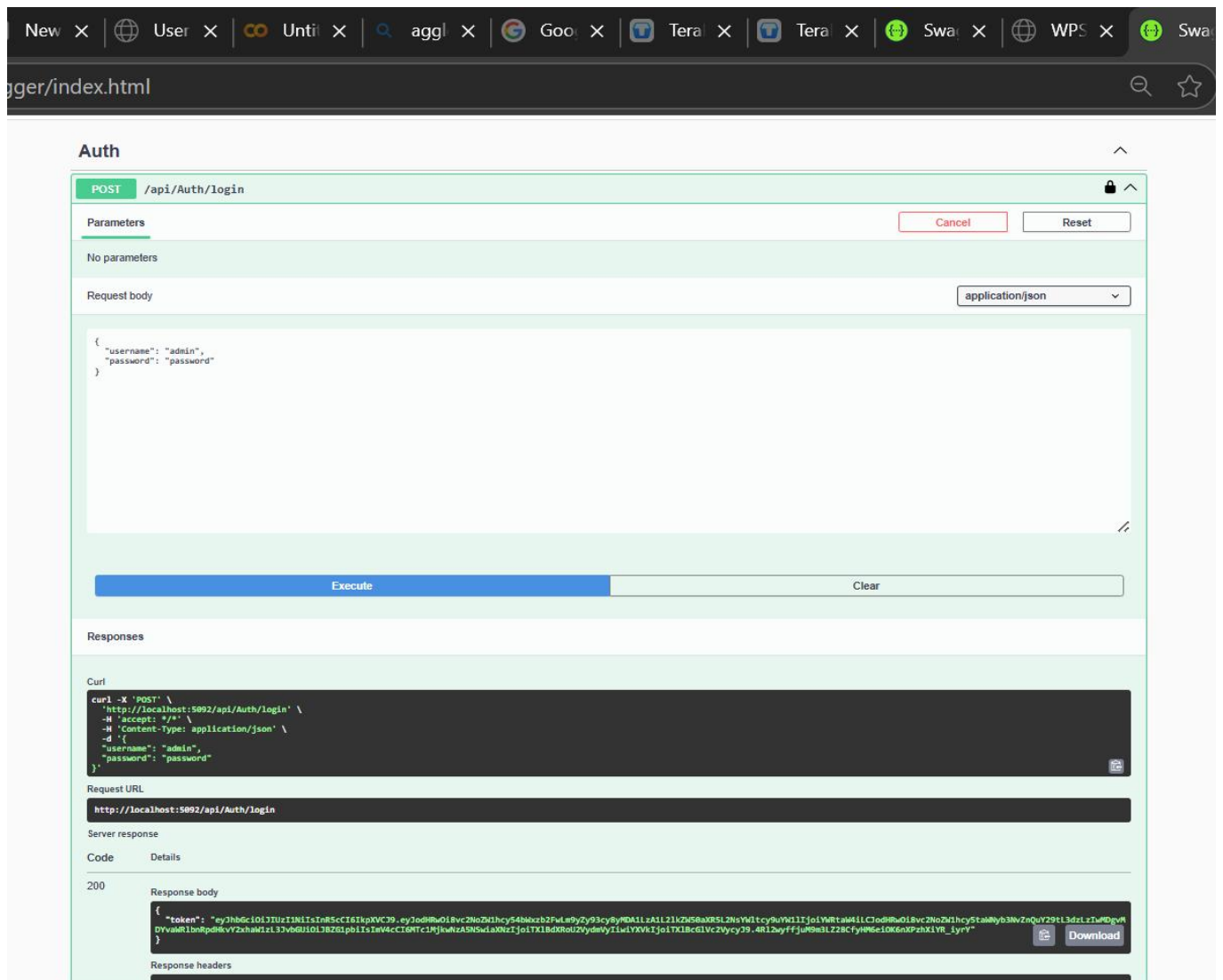
Received: hiii sender1
Received: hello
Received: hii this is sender on 19thjuly
Received: hii this is sender2 on 19thjuly
Received: hello this is sender3 on 19july

Type Here...

Send Recieve

Click here if you are simulating sender Click here if you are simulating reciever

Question 1: Implement JWT Authentication in ASP.NET Core Web API



\wedge 

Cancel

Execute

Clear

Curl



```
http://localhost:5092/WeatherForecast
```

Code	Details
------	---------

Response body

Download

```
content-type: application/json; charset=utf-8
date: Sat, 19 Jul 2025 05:40:37 GMT
server: Kestrel
transfer-encoding: chunked
```

Responses