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ASSIGNMENT 4.2

Start Kafka using docker-compose and:
1. Create a topic.
2. List Kafka topics.
3. Inspect one of them to see the number of partitions.

SOLUTION:

STEP 1:

First we created docker-compose.yml file . This docker-compose file sets up a Kafka cluster with one broker and one Zookeeper instance. It uses the images from Confluent for Kafka and Zookeeper. The broker is exposed on port 9092, and depends on Zookeeper.

docker-compose.yml

```yaml
version: '3'
services:
  zookeeper:
    image: confluentinc/cp-zookeeper:7.0.1
    container_name: zookeeper
    environment:
      ZOOKEEPER_CLIENT_PORT: 2181
      ZOOKEEPER_TICK_TIME: 2000

  broker:
    image: confluentinc/cp-kafka:7.0.1
    container_name: broker
    ports:
      - "9092:9092"
    depends_on:
      - zookeeper
    environment:
      KAFKA_BROKER_ID: 1
      KAFKA_ZOOKEEPER_CONNECT: 'zookeeper:2181'
      KAFKA_LISTENER_SECURITY_PROTOCOL_MAP: PLAINTEXT:PLAINTEXT,PLAINTEXT_INTERNAL:PLAINTEXT
      KAFKA_ADVERTISED_LISTENERS: PLAINTEXT://localhost:9092,PLAINTEXT_INTERNAL://broker:29092
      KAFKA_OFFSETS_TOPIC_REPLICATION_FACTOR: 1
      KAFKA_TRANSACTION_STATE_LOG_MIN_ISR: 1
      KAFKA_TRANSACTION_STATE_LOG_REPLICATION_FACTOR: 1
    restart: always

```

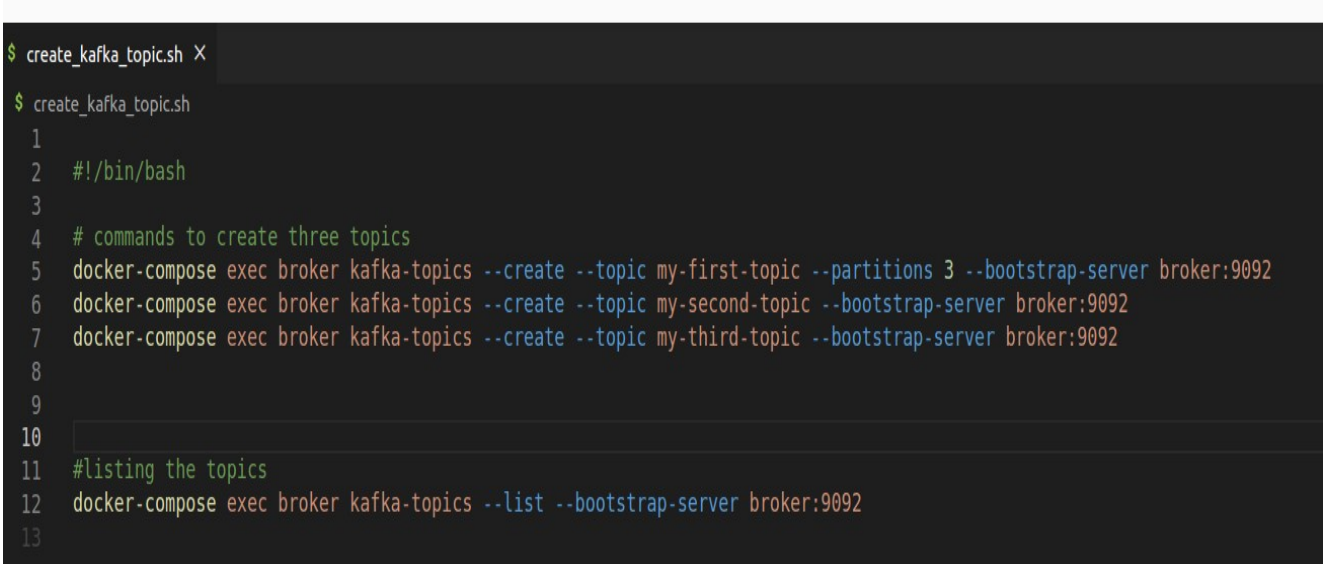
STEP 2:

Run the docker compose up – d command to Start the Kafka broker and ZooKeeper containers.

```
(base) muhammadhussam@all-MS-7D35:~/Desktop/ASSIGN4.3/playing_with_kafka$ docker compose up -d
[+] Running 3/3
 ✔ Network playing_with_kafka_default  Created
 ✔ Container zookeeper                 Started
 ✔ Container broker                    Started
(base) muhammadhussam@all-MS-7D35:~/Desktop/ASSIGN4.3/playing_with_kafka$
```

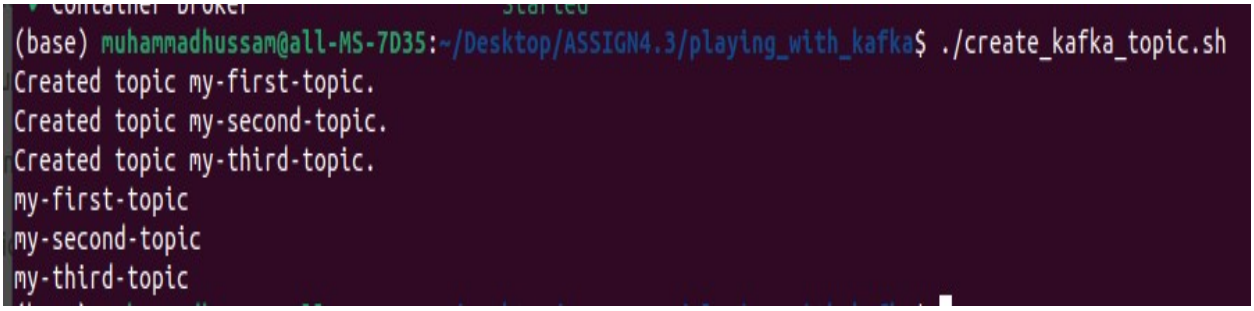
STEP 3 :

We Created the (create_kafka_topic.sh) file and we configured the create_kafka_topic.sh file so that it creates topics and presents a list of all topics after creating.



STEP 4:

Running create_kafka_topic.sh to run the script and display the list of all created topics.



STEP 5 :

Inspect the "my-first-topic" topic to see the number of partitions.