Kafka Assignment

- 1. Spin up dockerized containers for Kafka and Zookeeper using Kafka on Docker
 - Run the provided Docker Compose based Kafka cluster (kafka/docker-compose.yml):



2. Install kafkacat

1. Install Kafkacat via "apt install kafkacat" and check version:

```
(base) psalire@DESKTOP-33AVD7M:/mnt/c/users/Philip/Desktop$ kafkacat -V kafkacat - Apache Kafka producer and consumer tool https://github.com/edenhill/kafkacat
Copyright (c) 2014-2019, Magnus Edenhill
Version 1.5.0 (JSON, librdkafka 1.2.1 builtin.features=gzip,snappy,ssl,sasl,rege:plugins,sasl_oauthbearer)
```

2. Verify that it can connect to our Kafka cluster:

```
(base) psalire@DESKTOP-33AVD7M:/mnt/c/users/Philip/Desktop$ kafkacat -b 127.0.0.1:9092 -L
Metadata for all topics (from broker -1: 127.0.0.1:9092/bootstrap):
3 brokers:
broker 2 at localhost:9093 (controller)
broker 3 at localhost:9094
broker 1 at localhost:9092
1 topics:
topic "syslog" with 1 partitions:
partition 0, leader 2, replicas: 2, isrs: 2
```

- **3.** Create a topic in the Kafka cluster using kafkacat
 - 1. Create a new topic:

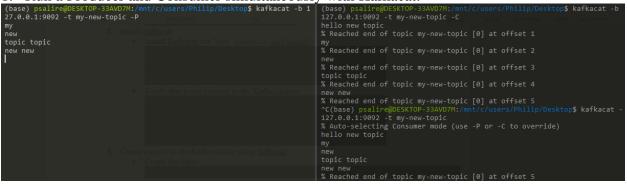
```
(base) psalire@DESKTOP-33AVD7M:/mnt/c/users/Philip/Desktop$ kafkacat -b 127.0.0.1:9092 -t my-new-topic -P hello new topic
```

2. Verify that the topic was created by consuming the topic:

```
(base) psalire@DESKTOP-33AVD7M:/mnt/c/users/Philip/Desktop$ kafkacat -b 127.0.0.1:9092 -t my-new-topic -C hello new topic % Reached end of topic my-new-topic [0] at offset 1
```

4. Produce to and consume from the topic using kafkacat

1. Run a Producer and Consumer simultaneously with Kafkacat:



5. Write a Java application to produce and consume from the Kafka topic using the kafkaclients directory in the repo

Often, Kafka Consumers are used to push to a database. As such, we've developed some code by modifying the kafka-clients code, which produces by reading from a CSV file and consumes to push to a SQLite database:

- 1. Build the source with mvn package
- 2. Run the Consumer with java -cp target\kafka-client-java.jar assignment2.Consumer
- 3. Run the Producer with java -cp target\kafka-client-java.jar assignment2.Producer example.csv

(Producer on the left, Consumer on the right)

4. Query assignment2.sqlite that was created and see that the CSV values were inserted

