

I ran Kafka and Zookeeper on Linux Ubuntu over a Windows 10 machine. After installation of Java, Kafka and Zookeeper I performed the following steps.

1. Start Zookeeper server in a first shell:

```
$ cd kafka_2.12-2.5.0
/kafka_2.12-2.5.0$ bin/zookeeper-server-start.sh config/zookeeper.properties
```

2. Open a second shell to start Kafka:

```
a$ cd kafka_2.12-2.5.0
a/kafka_2.12-2.5.0$ bin/kafka-server-start.sh config/server.properties
```

3. Open a third shell to create a topic, that consumers will use to receive messages from producers:

```
bnico@DESKTOP-KIGFNMK:/mnt/c/Users/nicob/Desktop/Kafka/kafka_2.12-2.5.0$ bin/kafka-topics.sh --create
--zookeeper localhost:2181 --replication-factor 1 --partitions 1 --topic test2
Created topic test2.
```

Start a consumer service (within the same 3rd shell):

```
bnico@DESKTOP-KIGFNMK:/mnt/c/Users/nicob/Desktop/Kafka/kafka_2.12-2.5.0$ bin/kafka-console-consumer.sh
--bootstrap-server localhost:9092 --topic test2 --from-beginning
```

4. Open a fourth shell to start a producer process:

```
$ bin/kafka-console-producer.sh --broker-list localhost:9092 --topic test2
```

5. I then successfully tested the producer to consumer messages both typing strings in the shell and inputting a simple .txt file. Next step included sending stream.jsonl to the producer. In the producer shell I executed the following command:

```
0$ cat stream.jsonl | bin/kafka-console-producer.sh --broker-list localhost:9092 --topic test
```

The result was a very long streaming of incomprehensible messages that after several minutes produced an error at the Kafka server.

6. The next thing to would be to find a way to parse the JSON file to understand the content, but I wasn't successful in the due time. As for the data structure that I would use to count, probably a dictionary, considering that JSON format is based on keys.