KAFKA

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-
#
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# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
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governing permissions and # limitations under the License.


# A simple example demonstrating use of JSONSerializer.

import argparse from uuid import uuid4 from six.moves import input from
confluent_kafka import Producer from confluent_kafka.serialization import
StringSerializer, SerializationContext, MessageField from
confluent_kafka.schema_registry import SchemaRegistryClient from
confluent_kafka.schema_registry.json_schema import JSONSerializer
#from       confluent_kafka.schema_registry
import * import pandas as pd from typing
import List

FILE_PATH = "restaurant_orders.csv"
columns=['Order Number', 'Order Date', 'Item Name', 'Quantity', 'Product Price', 'Total
products']

API_KEY = 'WLOKHCU6PDMZNHVC'
ENDPOINT_SCHEMA_URL  = 'https://psrc-30dr2.us-central1.gcp.confluent.cloud'
API_SECRET_KEY =
'Fs8lJPMAQhYjxfDawy7jVUI/fO/rOPBexWQeZauwMLQyY44zW1MWg0X20K6FGnMe'
BOOTSTRAP_SERVER = 'pkc-lzvrd.us-west4.gcp.confluent.cloud:9092'
SECURITY_PROTOCOL = 'SASL_SSL'
SSL_MACHENISM = 'PLAIN'
SCHEMA_REGISTRY_API_KEY = 'HT3IX7DIHATKMTWC'
SCHEMA_REGISTRY_API_SECRET =
'IT9SiyCqaEZCFttPscGYbJ7C4LvJ1cvrKGFb0qX7oATGd2SQMtRsnnR1142qBMMh'
```

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```
def sasl_conf():

   sasl_conf = {'sasl.mechanism': SSL_MACHENISM,
            # Set to SASL_SSL to enable TLS support.
#  'security.protocol': 'SASL_PLAINTEXT'}
            'bootstrap.servers':BOOTSTRAP_SERVER,
            'security.protocol': SECURITY_PROTOCOL,
            'sasl.username': API_KEY,
            'sasl.password': API_SECRET_KEY
            }    return
sasl_conf


def schema_config():
   return {'url':ENDPOINT_SCHEMA_URL,

   'basic.auth.user.info':f"{SCHEMA_REGISTRY_API_KEY}:{SCHEMA_REGISTRY_API_SECRET}"

   }

class Car:
   def       __init__(self,record:dict):
for k,v in record.items():
         setattr(self,k,v)

      self.record=record

   @staticmethod    def
dict_to_car(data:dict,ctx):
```

```
        return Car(record=data)

    def __str__(self):      return
f"{self.record}"


def get_car_instance(file_path):
df=pd.read_csv(file_path)
df=df.iloc[:,0:]     cars:List[Car]=[]
for data in df.values:
car=Car(dict(zip(columns,data)))
cars.append(car)        yield car

def car_to_dict(car:Car, ctx):
    """
    Returns a dict representation of a User instance for serialization.
    Args:
        user (User): User instance.
        ctx (SerializationContext): Metadata pertaining to the serialization
operation.
    Returns:
        dict: Dict populated with user attributes to be serialized.
    """

    # User._address must not be serialized; omit from dict
return car.record


def delivery_report(err, msg):
    """
    Reports the success or failure of a message delivery.
    Args:
        err (KafkaError): The error that occurred on None on success.
        msg (Message): The message that was produced or failed.
    """

    if err is not None:
        print("Delivery failed for User record {}: {}".format(msg.key(), err))
return
    print('User record {} successfully produced to {} [{}] at offset {}'.format(
msg.key(), msg.topic(), msg.partition(), msg.offset()))


def main(topic):

    schema_str = """
    {
  "$id": "http://example.com/myURI.schema.json",
  "$schema": "http://json-schema.org/draft-07/schema#",
```

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```
  "additionalProperties": false,
  "description": "Sample schema to help you get started.",
"properties": {
    "Order Number": {
      "description": "The type(v) type is used.",
      "type": "number"
    },
    "Order Date": {
      "description": "The type(v) type is used.",
      "type": "string"
    },
    "Item Name": {
      "description": "The type(v) type is used.",
      "type": "string"
    },
    "Quantity": {
      "description": "The type(v) type is used.",
      "type": "number"
},
    "Product Price": {
      "description": "The type(v) type is used.",
      "type": "number"
    },
    "Total products": {
```

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```
    "description": "The type(v) type is used.",
    "type": "number"
   }
  },
  "title": "SampleRecord",
  "type": "object"
}    """
   schema_registry_conf = schema_config()
   schema_registry_client = SchemaRegistryClient(schema_registry_conf)
   #reading the latest version of schema and schema_str from schema registry and useing it for data serialization.     schema_name = schema_registry_client.get_schema(100004).schema_str

   string_serializer = StringSerializer('utf_8')
   json_serializer = JSONSerializer(schema_name, schema_registry_client, car_to_dict)

producer = Producer(sasl_conf())

   print("Producing user records to topic {}. ^C to exit.".format(topic))
#while True:
      # Serve on_delivery callbacks from previous calls to produce()
producer.poll(0.0)    try:       for idx,car in
enumerate(get_car_instance(file_path=FILE_PATH)):

         print(car)          producer.produce(topic=topic, # publishing data in Kafka Topic one by one
and use dynamic key                    key=string_serializer("dynamic_key", car_to_dict),
value=json_serializer(car, SerializationContext(topic, MessageField.VALUE)),
on_delivery=delivery_report)
         if idx==5:      # index value is used for testing 1 or 2 records
break    except KeyboardInterrupt:
      pass    except
ValueError:
      print("Invalid input, discarding record...")
pass

   print("\nFlushing records...")
producer.flush() main("restaurent-take-away-
data")
```

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```
import argparse

from confluent_kafka import Consumer from
confluent_kafka.serialization import SerializationContext,
MessageField from confluent_kafka.schema_registry.json_schema
import JSONDeserializer from confluent_kafka.schema_registry
import SchemaRegistryClient


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            'sasl.username': API_KEY,
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sasl_conf


def schema_config():
   return {'url':ENDPOINT_SCHEMA_URL,


'basic.auth.user.info':f"{SCHEMA_REGISTRY_API_KEY}:{SCHEMA_REGISTRY_API_SECRET}"

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class Car:
   def       __init__(self,record:dict):
for k,v in record.items():
         setattr(self,k,v)
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self.record=record

    @staticmethod                    def
dict_to_car(data:dict,ctx):
return Car(record=data)

    def __str__(self):      return
f"{self.record}"

def main(topic):

    schema_str = """
    {
  "$id": "http://example.com/myURI.schema.json",
  "$schema": "http://json-schema.org/draft-07/schema#",
  "additionalProperties": false,
  "description": "Sample schema to help you get started.",
"properties": {
    "Order Number": {
      "description": "The type(v) type is used.",
      "type": "number"
    },
    "Order Date": {
      "description": "The type(v) type is used.",
      "type": "string"
    },
    "Item Name": {
      "description": "The type(v) type is used.",
      "type": "string"     },
```

```
    "Quantity": {
      "description": "The type(v) type is used.",
      "type": "number"
},
    "Product Price": {
      "description": "The type(v) type is used.",
      "type": "number"
    },
    "Total products": {
      "description": "The type(v) type is used.",
      "type": "number"
    }
  },
  "title": "SampleRecord",
  "type": "object"
}
    """
   #reading the latest version of schema and schema_str from schema registry and useing it for data deserialization.
    schema_registry_conf = schema_config()
    schema_registry_client = SchemaRegistryClient(schema_registry_conf)
schema_name = schema_registry_client.get_schema(100004).schema_str
json_deserializer = JSONDeserializer(schema_name,
                                     from_dict=Car.dict_to_car)

    consumer_conf = sasl_conf()
consumer_conf.update({
                 'group.id': 'group1',
                 'auto.offset.reset': "earliest"})

    consumer = Consumer(consumer_conf)
consumer.subscribe([topic])


    while True:
try:
        # SIGINT can't be handled when polling, limit timeout to 1 second.
        msg = consumer.poll(1.0)              if msg is None:                    continue              car =
json_deserializer(msg.value(), SerializationContext(msg.topic(), MessageField.VALUE))

        if car is not None:
            print("User record {}: car: {}\n"
.format(msg.key(), car))       except
KeyboardInterrupt:          break
```

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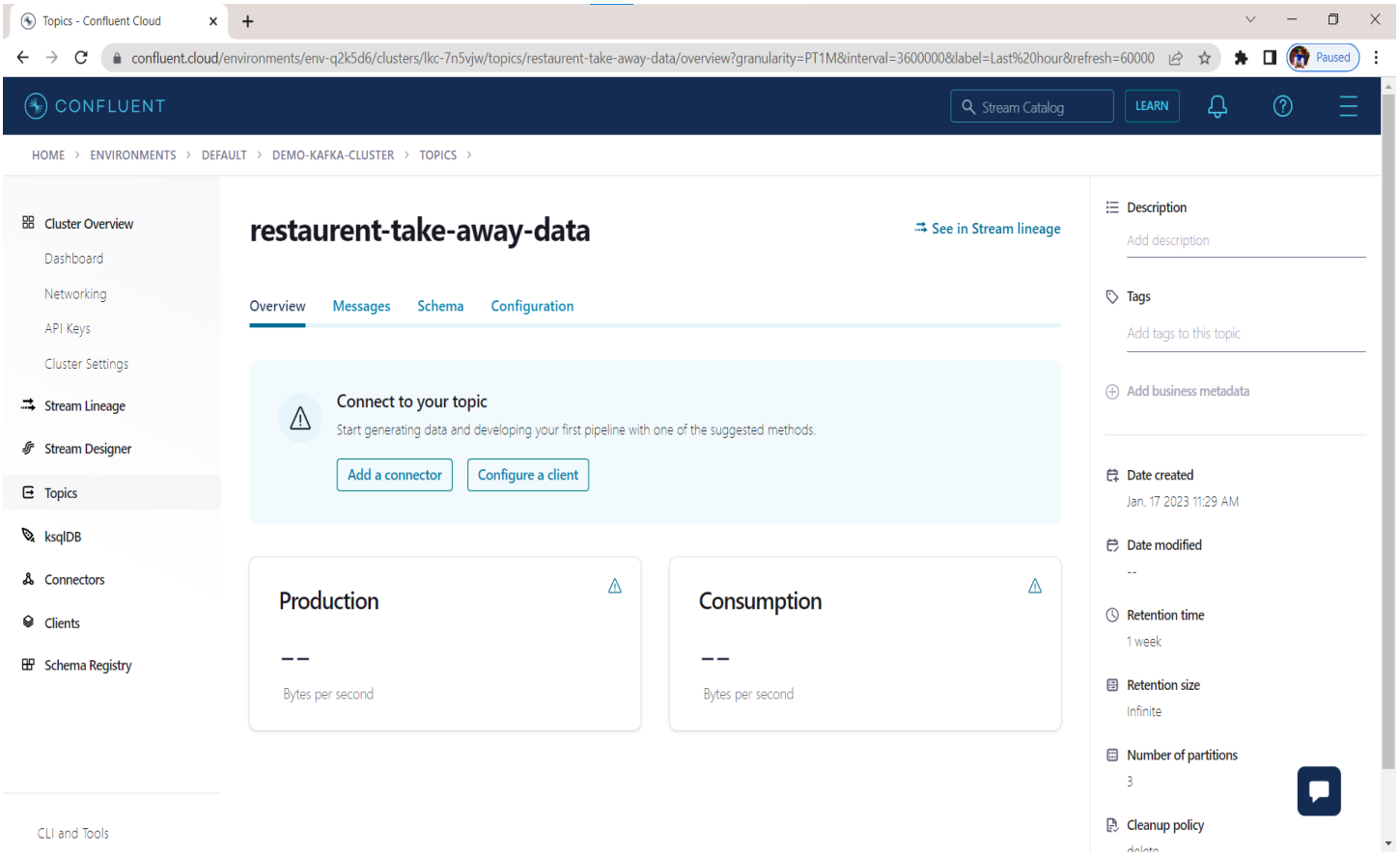
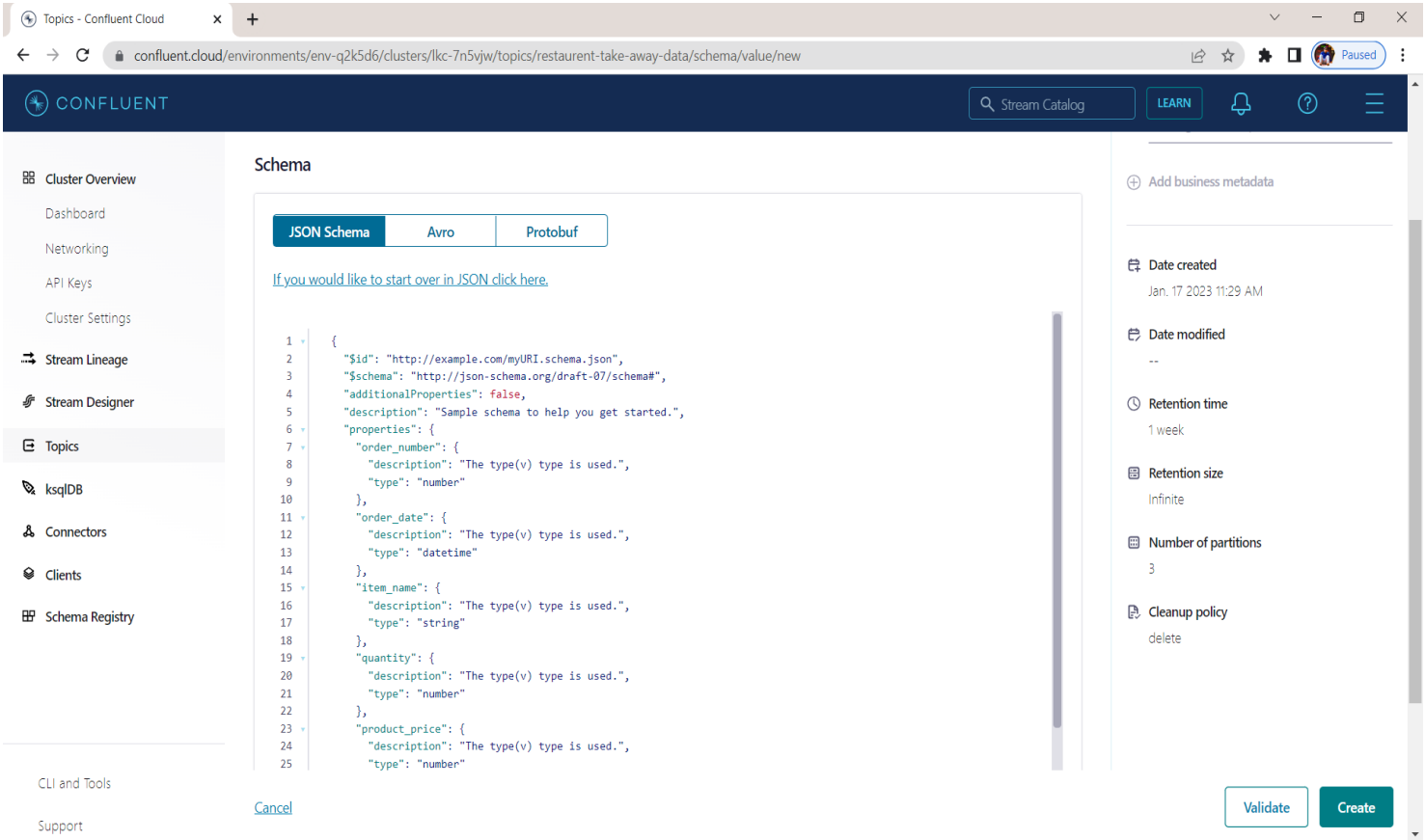
```
consumer.close() main("restaurent-take-
away-data")
```

KAFKA


Topics - Confluent Cloud
confluent.cloud/environments/env-q2k5d6/clusters/lkc-7n5vjw/topics/restaurent-take-away-data/overview?granularity=PT1M&interval=3600000&label=Last%20hour&refresh=60000
CONFLUENT
Stream Catalog
LEARN
HOME › ENVIRONMENTS › DEFAULT › DEMO-KAFKA-CLUSTER › TOPICS ›
Cluster Overview
Dashboard
Networking
API Keys
Cluster Settings
Stream Lineage
Stream Designer
Topics
ksqlDB
Connectors
Clients
Schema Registry
CLI and Tools
restaurent-take-away-data
See in Stream lineage
Overview
Messages
Schema
Configuration
Connect to your topic
Start generating data and developing your first pipeline with one of the suggested methods.
Add a connector
Configure a client
Production
--
Bytes per second
Consumption
--
Bytes per second
Description
Add description
Tags
Add tags to this topic
Add business metadata
Date created
Jan. 17 2023 11:29 AM
Date modified
--
Retention time
1 week
Retention size
Infinite
Number of partitions
3
Cleanup policy
delete


Topics - Confluent Cloud
confluent.cloud/environments/env-q2k5d6/clusters/lkc-7n5vjw/topics/restaurent-take-away-data/schema/value/new
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Schema
JSON Schema
Avro
Protobuf
If you would like to start over in JSON click here.
{
"$id": "http://example.com/myURI.schema.json",
"$schema": "http://json-schema.org/draft-07/schema#",
"additionalProperties": false,
"description": "Sample schema to help you get started.",
"properties": {
"order_number": {
"description": "The type(v) type is used.",
"type": "number"
},
"order_date": {
"description": "The type(v) type is used.",
"type": "datetime"
},
"item_name": {
"description": "The type(v) type is used.",
"type": "string"
},
"quantity": {
"description": "The type(v) type is used.",
"type": "number"
},
"product_price": {
"description": "The type(v) type is used.",
"type": "number"
Cancel
Validate
Create
Add business metadata
Date created
Jan. 17 2023 11:29 AM
Date modified
--
Retention time
1 week
Retention size
Infinite
Number of partitions
3
Cleanup policy
delete

KAFKA

```
Anaconda Prompt (Anaconda3)

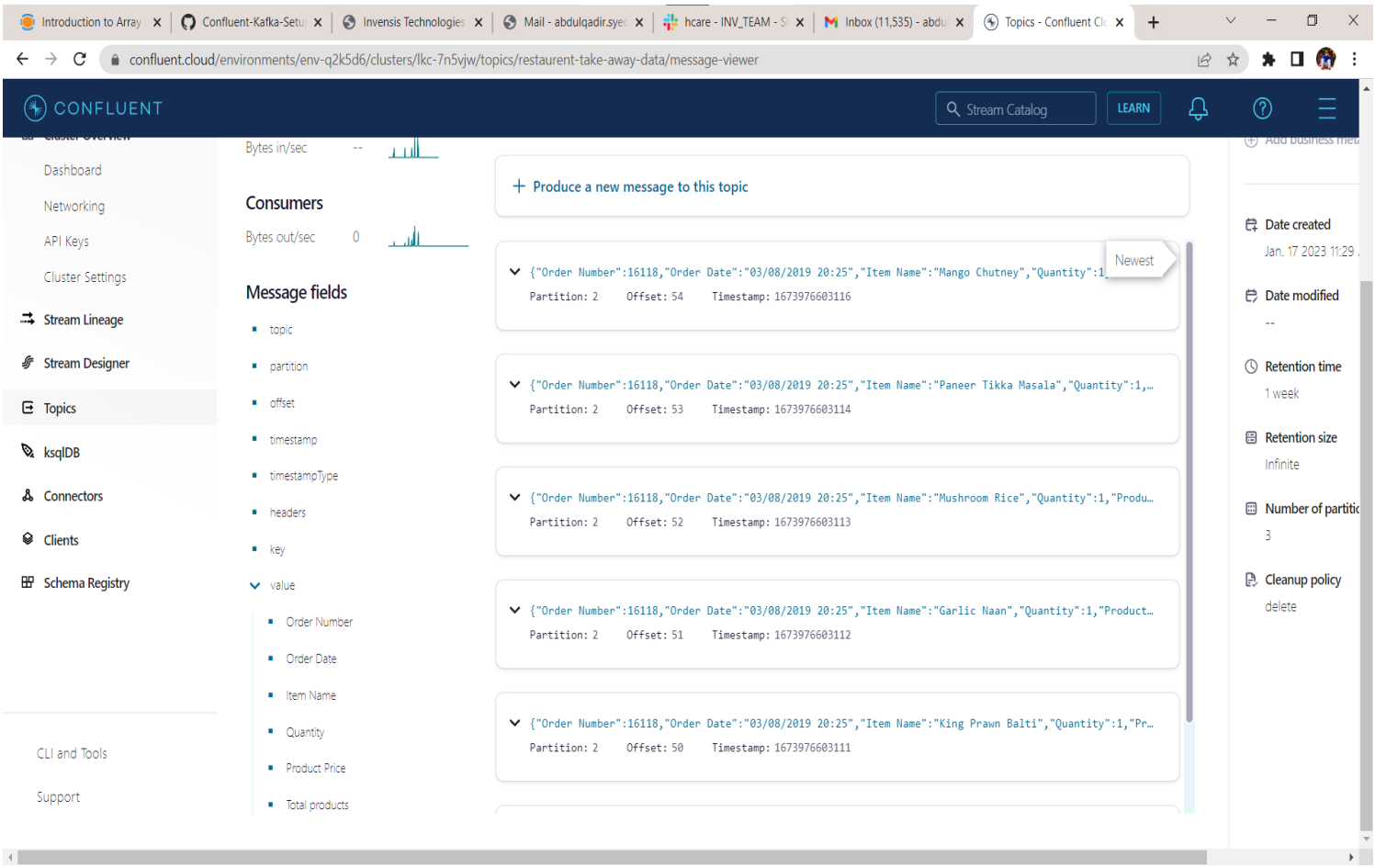
(base) C:\Users\Abdul Qadir>d:

(base) D:\>cd D:\SSD_DEVICE_STORAGE\Desktop\Kafkademo\ConfluentKafkaSetupmain

(base) D:\SSD_DEVICE_STORAGE\Desktop\Kafkademo\ConfluentKafkaSetupmain>python kafka_json_producer_check.py
Producing user records to topic restaurent-take-away-data. ^C to exit.
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Plain Papadum', 'Quantity': 2, 'Product Price': 0.8, 'Total products': 6}
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'King Prawn Balti', 'Quantity': 1, 'Product Price': 12.95, 'Total products': 6}
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Garlic Naan', 'Quantity': 1, 'Product Price': 2.95, 'Total products': 6}
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Mushroom Rice', 'Quantity': 1, 'Product Price': 3.95, 'Total products': 6}
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Paneer Tikka Masala', 'Quantity': 1, 'Product Price': 8.95, 'Total products': 6}
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Mango Chutney', 'Quantity': 1, 'Product Price': 0.5, 'Total products': 6}

Flushing records...
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 49
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 50
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 51
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 52
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 53
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 54

(base) D:\SSD_DEVICE_STORAGE\Desktop\Kafkademo\ConfluentKafkaSetupmain>
```



KAFKA

Anaconda Prompt (Anaconda3)

```
(base) C:\Users\Abdul Qadir>d:

(base) D:\>cd D:\SSD_DEVICE_STORAGE\Desktop\Kafkademo\ConfluentKafkaSetupmain

(base) D:\SSD_DEVICE_STORAGE\Desktop\Kafkademo\ConfluentKafkaSetupmain>python kafka_json_producer_check.py
Producing user records to topic restaurent-take-away-data. ^C to exit.
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Plain Papadum', 'Quantity': 2, 'Product Price': 0.8, 'Total products': 6}
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{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Mushroom Rice', 'Quantity': 1, 'Product Price': 3.95, 'Total products': 6}
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Paneer Tikka Masala', 'Quantity': 1, 'Product Price': 8.95, 'Total products': 6}
{'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Mango Chutney', 'Quantity': 1, 'Product Price': 0.5, 'Total products': 6}

Flushing records...
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 49
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 50
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User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 54

(base) D:\SSD_DEVICE_STORAGE\Desktop\Kafkademo\ConfluentKafkaSetupmain>python kafka_json_producer_check.py
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Flushing records...
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 55
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 56
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 57
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 58
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 59
User record b'dynamic_key' successfully produced to restaurent-take-away-data [2] at offset 60

(base) D:\SSD_DEVICE_STORAGE\Desktop\Kafkademo\ConfluentKafkaSetupmain>
```

Anaconda Prompt (Anaconda3) - python kafka_json_consumer_1.py

```
(base) C:\Users\Abdul Qadir>d:

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User record b'dynamic_key': car: {'Order Number': 16118, 'Order Date': '03/08/2019 20:25', 'Item Name': 'Plain Papadum', 'Quantity': 2, 'Product Price': 0.8, 'Total product
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