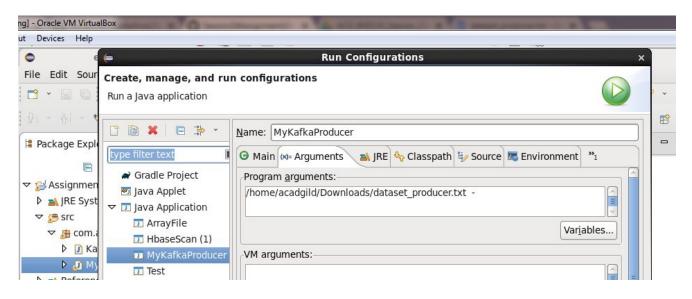
#### Start zookeeper and kafka server by using below commands

```
[acadgild@localhost kafka 2.12-0.10.1.1]$ ./bin/zookeeper-server-start.sh ./config/zookeeper.properties
[2018-08-12 13:02:30,888] INFO Reading configuration from: ./config/zookeeper.properties (org.apache.zookeeper.server.quorum.
QuorumPeerConfig)
[2018-08-12 13:02:30,939] INFO autopurge.snapRetainCount set to 3 (org.apache.zookeeper.server.DatadirCleanupManager)
[2018-08-12 13:02:30,940] INFO autopurge.purgeInterval set to 0 (org.apache.zookeeper.server.DatadirCleanupManager)
[2018-08-12 13:02:30,940] INFO Purge task is not scheduled. (org.apache.zookeeper.server.DatadirCleanupManager)
[2018-08-12 13:02:30,940] WARN Either no config or no quorum defined in config, running in standalone mode (org.apache.zooke
eper.server.quorum.QuorumPeerMain)
[2018-08-12 13:02:31,075] INFO Reading configuration from: ./config/zookeeper.properties (org.apache.zookeeper.server.quorum.
OuorumPeerConfia)
[2018-08-12 13:02:31,082] INFO Starting server (org.apache.zookeeper.server.ZooKeeperServerMain)
[2018-08-12 13:02:31,146] INFO Server environment:zookeeper.version=3.4.8--1, built on 02/06/2016 03:18 GMT (org.apache.zooke
eper.server.ZooKeeperServer)
[2018-08-12 13:02:31,146] INFO Server environment:host.name=localhost (org.apache.zookeeper.server.ZookeeperServer)
[2018-08-12 13:02:31,146] INFO Server environment: java.version=1.8.0 151 (org.apache.zookeeper.server.ZookeeperServer)
[2018-08-12 13:02:31,146] INFO Server environment:java.vendor=Oracle Corporation (org.apache.zookeeper.server.ZooKeeperServer
[2018-08-12 13:02:31,146] INFO Server environment:java.home=/usr/java/jdk1.8.0 151/jre (org.apache.zookeeper.server.Zookeeper
[2018-08-12 13:02:31,146] INFO Server environment:java.class.path=:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/aopalliance-repackaged-2.4.0-b34.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar./home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar./home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar./home/acadgild/install/kafka/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j-0.5.0.jar./home/acadgild/install/kafka/kafka_2.12-0.10.1.1/bin/../libs/argparse4j
me/acadgild/install/kafka/kafka 2.12-0.10.1.1/bin/../libs/connect-api-0.10.1.1.jar:/home/acadgild/install/kafka/kafka 2.12-0.
```

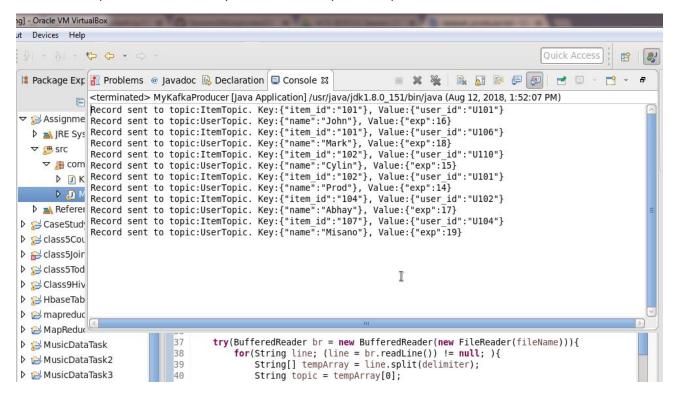
```
acadgild@localhost:~/install/kafka/kafka 2.12-0.10.1.1
File Edit View Search Terminal Help
[acadgild@localhost ~]$ cd install/kafka/kafka 2.12-0.10.1.1/bin
[acadgild@localhost bin]$ cd ../
[acadgild@localhost kafka 2.12-0.10.1.1]$ ./bin/kafka-server-start.sh ./config/s
erver.properties
[2018-08-12 13:30:58,004] INFO KafkaConfig values:
        advertised.host.name = null
        advertised.listeners = null
        advertised.port = null
        authorizer.class.name =
        auto.create.topics.enable = true
        auto.leader.rebalance.enable = true
        background.threads = 10
        broker.id = 0
        broker.id.generation.enable = true
        broker.rack = null
        compression.type = producer
        connections.max.idle.ms = 600000
```

# Task 1



### **Console Output:**

For each line, producer inserted Key and Value to respective topics.



#### Below are the topics created by kafka producer program

```
-rw-rw-r--. 1 acadgild acadgild 518 Aug 12 13:43 dataset_producer.txt
[acadgild@localhost Downloads]$ cd ../install/kafka/kafka_2.12-0.10.1.1/
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost kafka_2.12-0.10.1.1]$ ls
bin config libs LICENSE logs NOTICE site-docs
[acadgild@localhost kafka_2.12-0.10.1.1]$ ./bin/kafka-topics.sh --list --zookeeper localhost:2181
ItemTopic
UserTopic
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost kafka_2.12-0.10.1.1]$ ||
```

Run kafka consumer for ItemTopic to view the contents received from producer

Run Consumer for topic UserTopic to view contents sent from producer

```
You have new mail in /var/spool/mail/acadgild [acadgild@localhost kafka_2.12-0.10.1.1]$ ./bin/kafka-console-consumer.sh --topic UserTopic --from-beginning --zookeeper loca lhost:2181 --property print.key=true

Using the ConsoleConsumer with old consumer is deprecated and will be removed in a future major release. Consider using the n ew consumer by passing [bootstrap-server] instead of [zookeeper].

{"name":"John"} {"exp":16}
{"name":"Mark"} {"exp":18}
{"name":"Cylin"} {"exp":15}
{"name":"Prod"} {"exp":14}
{"name":"Abhay"} {"exp":19}
```

# Task 2

Producer got acknowledgement from broker for each key and value published

```
♦ ♦ • □
                                                                                                        Quick Access ¦ 😭 🐉 🐉
                                                                           🖺 Package Exp 📳 Problems @ Javadoc 🚇 Declaration 💂 Console 🛭
                                                                                                                                  8
              <terminated> KafkaProducerWithAck [Java Application] /usr/java/jdk1.8.0_151/bin/java (Aug 12, 2018, 2:02:34 PM)
                                                                                                                                 E C
              Record sent to topic:ItemTopic and acknowledged as well. Key:{"item_id":"101"}, Value:{"user_id":"U101"}
▽ 🤛 Assignme Record sent to topic:UserTopic and acknowledged as well. Key:{"name":"John"}, Value:{"exp":16}
                                                                                                                                  @
  > A JRE Sys Record sent to topic:ItemTopic and acknowledged as well. Key:{"item_id":"101"}, Value:{"user_id":"U106"}
                                                                                                                                 Record sent to topic:UserTopic and acknowledged as well. Key:{"name":"Mark"}, Value:{"exp":18}
Record sent to topic:ItemTopic and acknowledged as well. Key:{"item_id":"102"}, Value:{"user_id":"U110"}
  ▼ # src

        ➡ Com
        Record sent to topic:UserTopic and acknowledged as well. Key:{"name":"Cylin"}, Value:{"exp":15}

       Record sent to topic:ItemTopic and acknowledged as well. Key:{"item_id":"102"}, Value:{"user_id":"U101"}
             Record sent to topic:UserTopic and acknowledged as well. Key:{"name":"Prod"}, Value:{"exp":14}
Record sent to topic:ItemTopic and acknowledged as well. Key:{"item_id":"104"}, Value:{"user_id":"U102"}
Record sent to topic:UserTopic and acknowledged as well. Key:{"name":"Misano"}, Value:{"exp":19}
D ≅ class5Coι
▶ a class5Join
Class5Tod
Class9Hiv
▶ ₩ HbaseTab
▶ papreduc
▶ B MapReduce
                              36
▶ № MusicDataTask
                                               producerRecord = new ProducerRecord<String, String>(topic, key, value);
                               37
▶ A MusicDataTask2
                              38
                                               producer.send(producerRecord).get():
                                               System.out.printf("Record sent to topic:%s and acknowledged as well. Key:
                              39
▶ ★ MusicDataTask3
                              40
> BTVSalesTask1
                               41
▶ ➡ TvSalesTask2
                                      producer.close():
                               42
                              43
D A TySalesTask3
```

## Run consumer for ItemTopic to view contents

```
[מבמטעבוטפוטכמווטאנ אמואם ב.וב-ש.וס.ו.ון.]
[acadgild@localhost kafka_2.12-0.10.1.1]$ ./bin/kafka-console-consumer.sh --topic ItemTopic --from-beginning --zookeeper loca
lhost:2181 --property print.key=true
Using the ConsoleConsumer with old consumer is deprecated and will be removed in a future major release. Consider using the n
ew consumer by passing [bootstrap-server] instead of [zookeeper].
{"item_id":"101"}
{"item_id":"101"}
                                 {"user_id":"U101"}
{"user_id":"U106"}
{"item_id":"102"}
{"item_id":"102"}
                                 {"user_id":"U110"}
{"user_id":"U101"}
{"item_id":"104"}
{"item_id":"104"}
{"item_id":"107"}
                                 {"user_id":"U102"}
{"user_id":"U104"}
{"item_id":"101"}
{"item_id":"101"}
                                 {"user_id":"U101"}
{"user_id":"U106"}
{"item_id":"102"}
{"item_id":"102"}
                                 {"user_id":"U110"}
{"user_id":"U101"}
{"item_id":"104"}
{"item_id":"107"}
                                 {"user_id":"U102"}
{"user_id":"U104"}
                                  {"user_id":"U101"}
{"item id":"101"}
{"item id":"101"}
                                  {"user id":"U106"]
{"item id":"102"}
                                  {"user id":"U110"}
{"item id":"102"}
                                  {"user id":"U101"}
{"item id":"104"}
                                  {"user id":"U102"}
{"item_id":"107"}
                                 {"user id":"U104"}
```

### Run Consumer for UserTopic to view contents

```
^CYou have new mail in /var/spool/mail/acadgild
[acadgild@localhost kafka_2.12-0.10.1.1]$ ./bin/kafka-console-consumer.sh --topic UserTopic --from-beginning --zookeeper loca
lhost:2181 --property print.key=true
Using the ConsoleConsumer with old consumer is deprecated and will be removed in a future major release. Consider using the n
ew consumer by passing [bootstrap-server] instead of [zookeeper].
{"name":"John"} {"exp":16}
{"name":"Mark"} {"exp":18}
{"name":"Cylin"} {"
{"name":"Prod"} {"exp":14}
                              {"exp":15}
                              {"exp":17}
{"exp":19}
{"name":"Abhay"}
{"name":"Misano"}
{"name":"John"} {"exp":16}
{"name":"Mark"} {"exp":18}
{"name":"Cylin"}
                               {"exp":15}
{"name":"Prod"} {"exp":14}
{"name":"Abhay"}
{"name":"Misano"}
                              {"exp":17}
{"exp":19}
{"name":"John"} {"exp":16} {"name":"Mark"} {"exp":18}
{"name":"Cylin"} {"exp":14}
{"name":"Prod"} {"exp":14}
                              {"exp":15}
                              {"exp":17}
{"exp":19}
{"name":"Abhay"}
{"name":"Misano"}
```