

# BIG DATA HADOOP AND SPARK DEVELOPMENT

## ASSIGNMENT 23

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# BIG DATA HADOOP AND SPARK DEVELOPMENT

## 1. Introduction

In this assignment, the given tasks are performed and Output of the tasks are recorded in the form of Screenshots.

## 2. Objective

This Assignment consolidates the deeper understanding of the Session – 23 Introduction to Apache Kafka

## 3. Problem Statement

- Task 1

- Create a kafka topic named KeyLessTopic. Inside KeyLessTopic insert following data:

```
{"name":"John", "exp":16}
{"name":"Finn", "exp":20}
{"name":"Cylin", "exp":18}
{"name":"Mark", "exp":2}
{"name":"Akshay", "exp":14}
```

- Task 2

- Create a console consumer that reads KeyLessTopic from beginning

- Task 3

- Create a kafka topic named KeyedTopic. Inside KeyedTopic insert following data:

The part before comma(,) should be treated as key and after comma(,) should be treated as value

```
{"name":"John"}, {"exp":16}
{"name":"Finn"}, {"exp":20}
{"name":"Cylin"}, {"exp":18}
{"name":"Mark"}, {"exp":2}
{"name":"Akshay"}, {"exp":14}
```

- Task 4

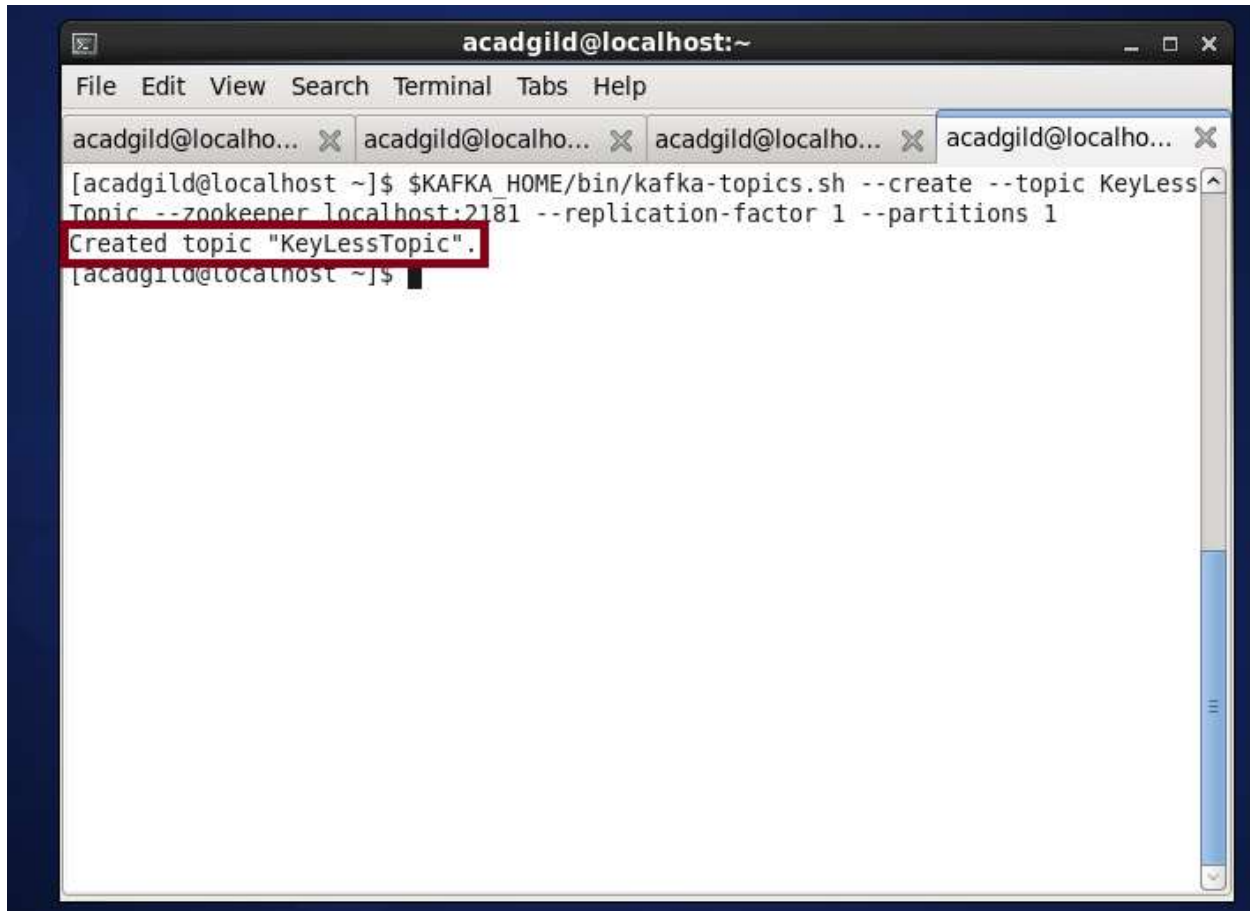
- Create a console consumer that reads KeyedTopic from beginning The key and value should be separated by '-'

## 4. Expected Output

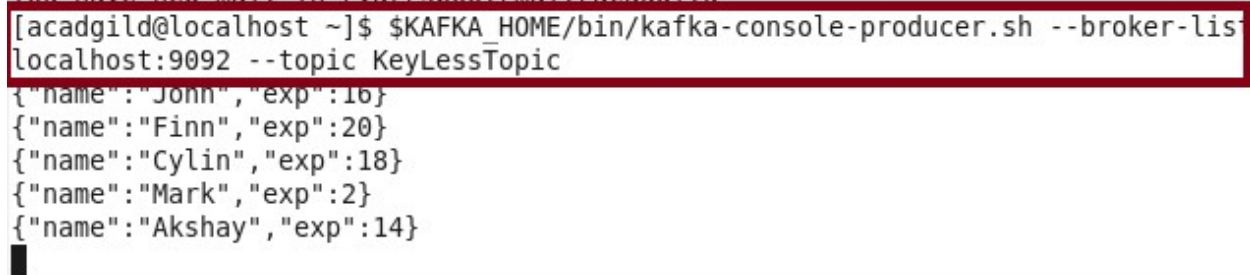
### • Task 1

- Create a kafka topic named KeyLessTopic. Inside KeyLessTopic insert following data:

```
{"name":"John", "exp":16}  
{"name":"Finn", "exp":20}  
{"name":"Cylin", "exp":18}  
{"name":"Mark", "exp":2}  
{"name":"Akshay", "exp":14}
```

A screenshot of a terminal window titled 'acadgild@localhost:~'. The terminal shows the command '\$KAFKA\_HOME/bin/kafka-topics.sh --create --topic KeyLessTopic --zookeeper localhost:2181 --replication-factor 1 --partitions 1' being executed. The output 'Created topic "KeyLessTopic".' is displayed and highlighted with a red box. The prompt '[acadgild@localhost ~]\$' is visible below the output.

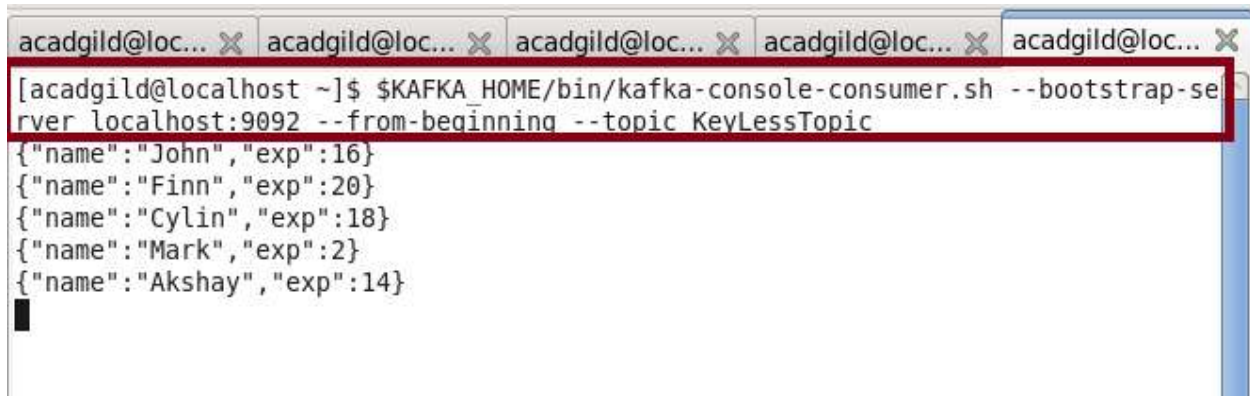
```
acadgild@localhost:~  
File Edit View Search Terminal Tabs Help  
acadgild@localho... X acadgild@localho... X acadgild@localho... X acadgild@localho... X  
[acadgild@localhost ~]$ $KAFKA_HOME/bin/kafka-topics.sh --create --topic KeyLessTopic --zookeeper localhost:2181 --replication-factor 1 --partitions 1  
Created topic "KeyLessTopic".  
[acadgild@localhost ~]$
```

A screenshot of a terminal window showing the command '\$KAFKA\_HOME/bin/kafka-console-producer.sh --broker-list localhost:9092 --topic KeyLessTopic' being executed. The output shows five JSON records being inserted into the topic, which are highlighted with a red box. The prompt '[acadgild@localhost ~]\$' is visible below the output.

```
[acadgild@localhost ~]$ $KAFKA_HOME/bin/kafka-console-producer.sh --broker-list localhost:9092 --topic KeyLessTopic  
{"name":"John","exp":16}  
{"name":"Finn","exp":20}  
{"name":"Cylin","exp":18}  
{"name":"Mark","exp":2}  
{"name":"Akshay","exp":14}  
[acadgild@localhost ~]$
```

- Task 2

- Create a console consumer that reads KeyLessTopic from beginning

A terminal window with five tabs, each labeled 'acadgild@loc...'. The active tab shows a command prompt where the user has entered the command to start a Kafka console consumer. The command is highlighted with a red box. Below the command, the terminal displays five JSON records from the 'KeyLessTopic' topic, each containing a 'name' and an 'exp' field. The records are: {"name": "John", "exp": 16}, {"name": "Finn", "exp": 20}, {"name": "Cylin", "exp": 18}, {"name": "Mark", "exp": 2}, {"name": "Akshay", "exp": 14}. A cursor is visible at the end of the last record.

```
acadgild@loc... X acadgild@loc... X acadgild@loc... X acadgild@loc... X acadgild@loc... X
[acadgild@localhost ~]$ $KAFKA_HOME/bin/kafka-console-consumer.sh --bootstrap-se
rver localhost:9092 --from-beginning --topic KeyLessTopic
{"name": "John", "exp": 16}
{"name": "Finn", "exp": 20}
{"name": "Cylin", "exp": 18}
{"name": "Mark", "exp": 2}
{"name": "Akshay", "exp": 14}
█
```

- Task 3

- Create a kafka topic named KeyedTopic. Inside KeyedTopic insert following data:

The part before comma(,) should be treated as key and after comma(,) should be treated as value

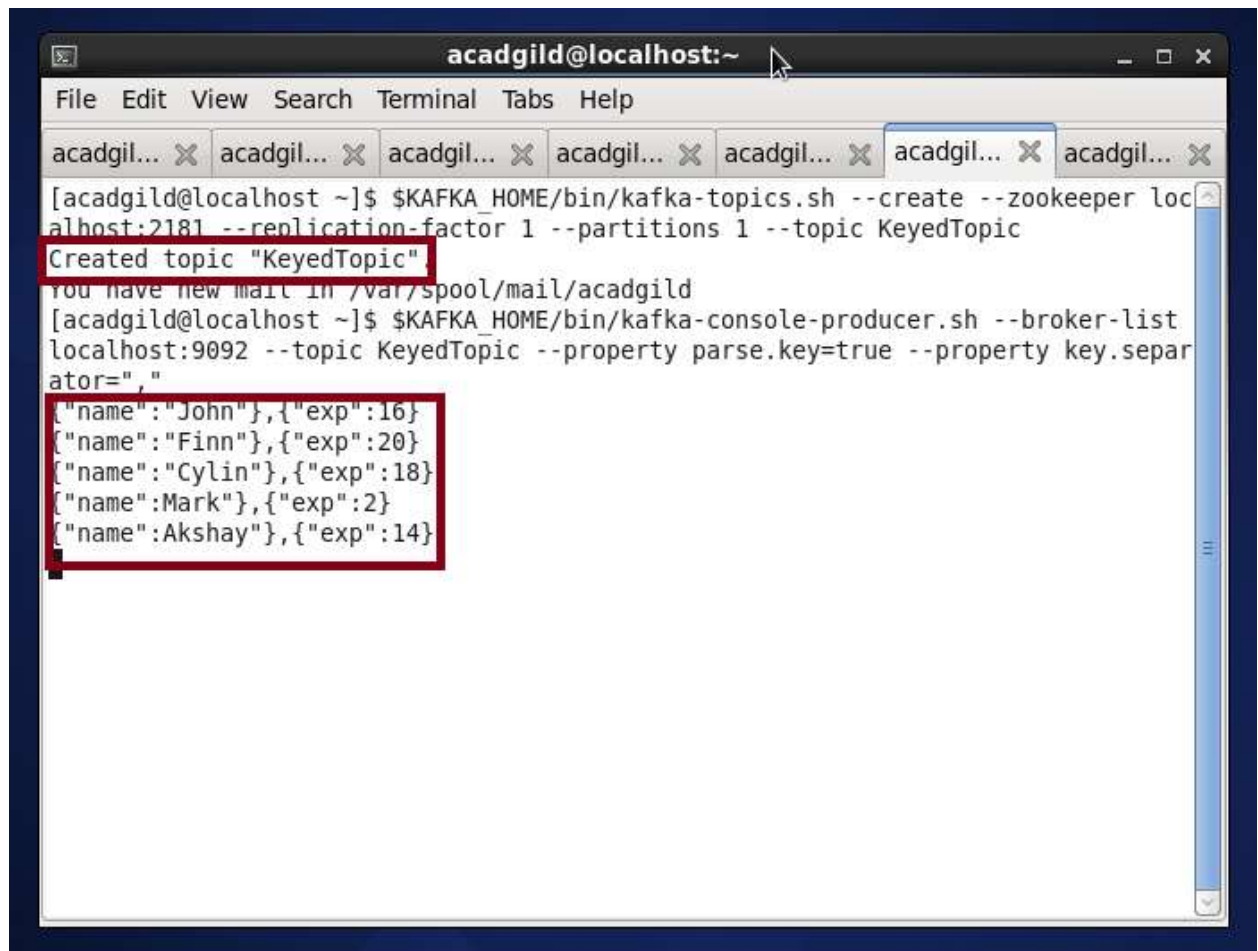
`{"name":"John"}, {"exp":16}`

`{"name":"Finn"}, {"exp":20}`

`{"name":"Cylin"}, {"exp":18}`

`{"name":"Mark"}, {"exp":2}`

`{"name":"Akshay"}, {"exp":14}`



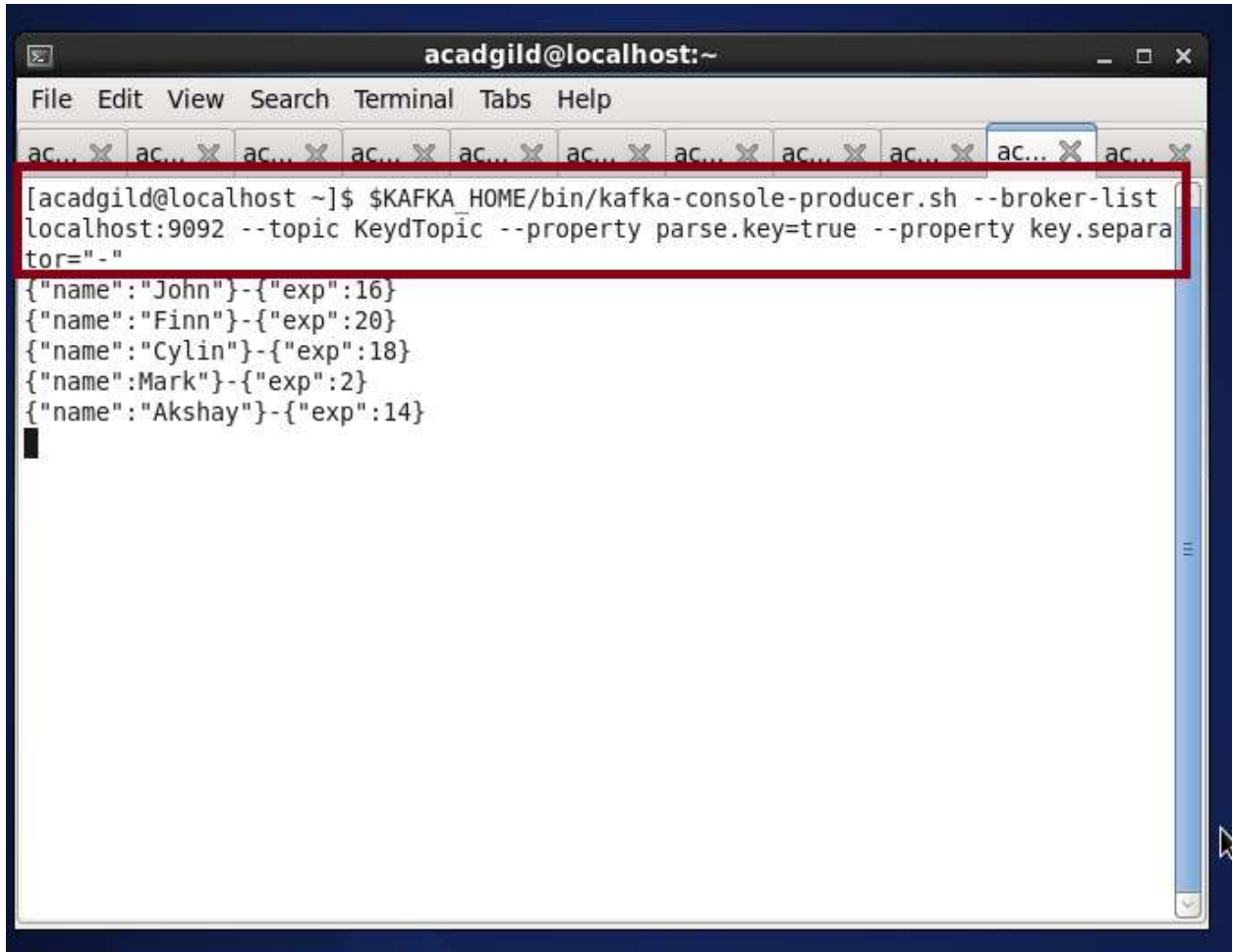
The screenshot shows a terminal window titled 'acadgild@localhost:~'. The terminal contains the following commands and output:

```
[acadgild@localhost ~]$ $KAFKA_HOME/bin/kafka-topics.sh --create --zookeeper localhost:2181 --replication-factor 1 --partitions 1 --topic KeyedTopic
Created topic "KeyedTopic"
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$ $KAFKA_HOME/bin/kafka-console-producer.sh --broker-list localhost:9092 --topic KeyedTopic --property parse.key=true --property key.separator=","
{"name":"John"}, {"exp":16}
{"name":"Finn"}, {"exp":20}
{"name":"Cylin"}, {"exp":18}
{"name":"Mark"}, {"exp":2}
{"name":"Akshay"}, {"exp":14}
```

The output 'Created topic "KeyedTopic"' and the list of JSON data entries are highlighted with red boxes in the original image.

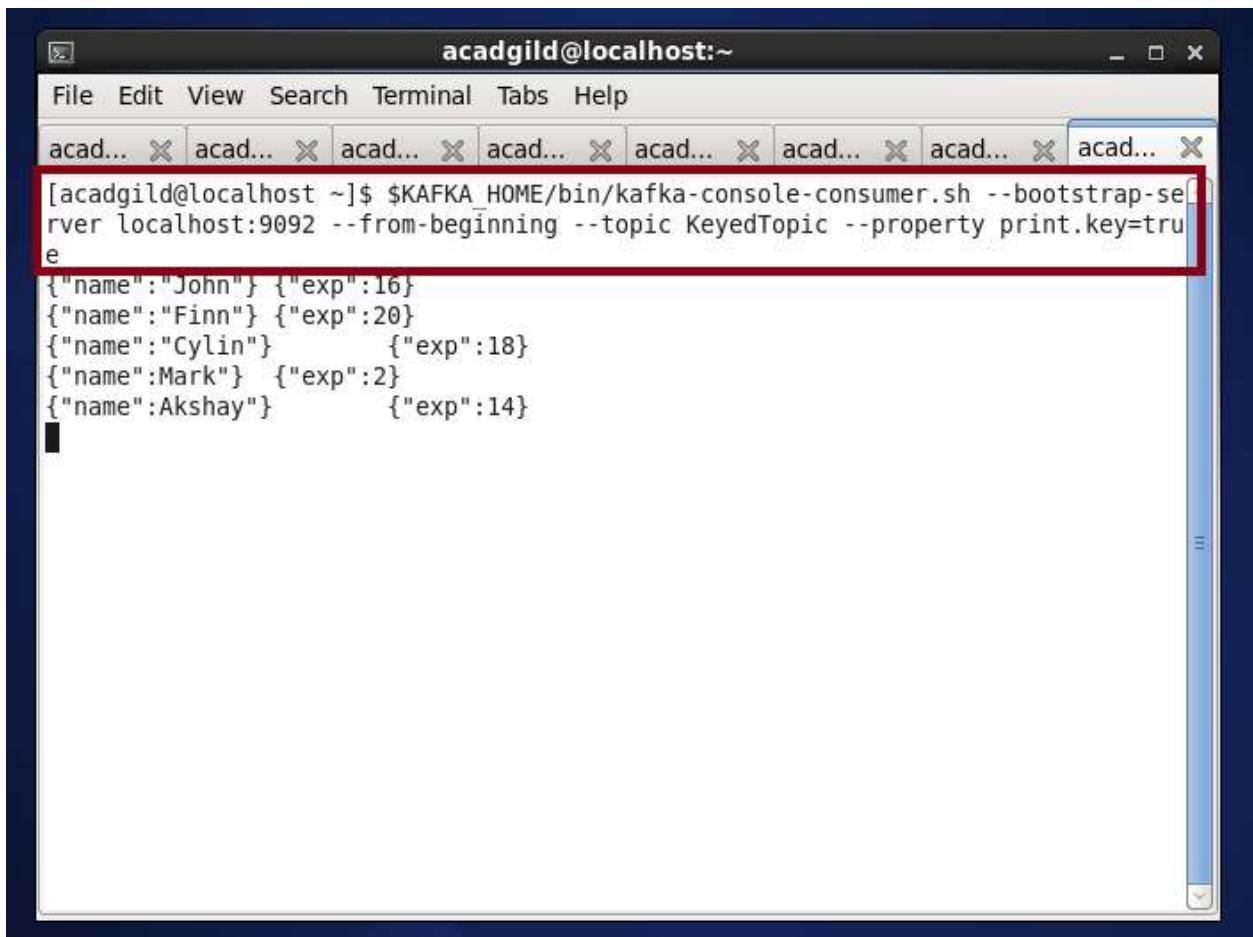
- Task 4

- Create a console consumer that reads KeydTopic from beginning The key and value should be separated by '-'



A terminal window titled 'acadgild@localhost:~' with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help) and multiple tabs. The command '\$KAFKA\_HOME/bin/kafka-console-producer.sh --broker-list localhost:9092 --topic KeydTopic --property parse.key=true --property key.separator="-"' is entered and highlighted with a red box. Below it, five JSON records are printed, each with a 'name' key and an 'exp' value, separated by a hyphen.

```
[acadgild@localhost ~]$ $KAFKA_HOME/bin/kafka-console-producer.sh --broker-list  
localhost:9092 --topic KeydTopic --property parse.key=true --property key.separa  
tor="- "  
{ "name": "John" } - { "exp": 16 }  
{ "name": "Finn" } - { "exp": 20 }  
{ "name": "Cylin" } - { "exp": 18 }  
{ "name": "Mark" } - { "exp": 2 }  
{ "name": "Akshay" } - { "exp": 14 }
```

A terminal window titled 'acadgild@localhost:~' with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help) and a tab bar with eight tabs labeled 'acad...'. The terminal shows the command '\$KAFKA\_HOME/bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --from-beginning --topic KeyedTopic --property print.key=true' and its output: five JSON objects representing records with 'name' and 'exp' fields. A red rectangle highlights the command and the first two lines of output. A black cursor is on the line following the last output record.

```
acadgild@localhost:~$ $KAFKA_HOME/bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --from-beginning --topic KeyedTopic --property print.key=true
{"name":"John"} {"exp":16}
{"name":"Finn"} {"exp":20}
{"name":"Cylin"} {"exp":18}
{"name":"Mark"} {"exp":2}
{"name":"Akshay"} {"exp":14}
█
```