

Q&A

Describe the following:

- **Sink and Source connectors.**

Kafka connector is the JAR files that define how to integrate with the data store itself. A sink connector allows delivering of data from Kafka topics (indexes such as Elasticsearch, batch systems such as Hadoop) into relational databases and other systems. A source connector allows the import of data from relational databases and collects data from a source system such as stream tables, message brokers, etc.

- **The applications/advantages of using Kafka Connectors with data storage.**

Some advantages of Kafka connectors are, first, it uses meaningful abstractions to push and pull data. It is a data centric pipeline. Another benefit is that it runs on a single node with stream and batch oriented systems which gives flexibility and scalability to the system.

- **How do Kafka connectors maintain availability?**

Kafka connectors maintain availability through the worker process that executes the tasks. There are multiple worker processes, and if one fails, another worker process ensures to replace and take up the task.

- **List the popular Kafka converters for values and the properties/advantages of each.**

A few popular Kafka converters are Avro. `io.confluent.connect.avro.AvroConverter`, String. `org.apache.kafka.connect.storage.StringConverter`, JSON. `org.apache.kafka.connect.json.JsonConverter`.

Search the internet to answer the following question:

- **What's a Key-Value (KV) database?**

A key-value database is a nonrelational database. It uses a simple key-value method to store data as a collection of key-value pairs. It is used for storing, retrieving and managing the arrays in the database that is associated with the key value.

What are KV databases' advantages and disadvantages?

The key serves as a unique identifier. It is used for applications that require values to be retrieved fast via keys. The simple data format makes write and read operations fast. Advantages include horizontal scaling. Disadvantages include difficulty filtering values.

- **List some popular KV databases.**

Some popular key value databases include Amazon DynamoDB, Oracle NoSQL Database, InfinityDB, etc.

List some possible applications that can be implemented by using the uploaded dataset.

Application that may be implemented by using the uploaded dataset is some type of a training set or module set.

Now, you will store a dataset into cloud storage. The dataset has to be sent into Kafka topics and connectors have to be configured to automatically store the dataset into the data storage. The producer that will send the dataset to Kafka topics should run on your local machine as it will simulate real sensors while Kafka, connectors, and data storage should be on the cloud. Use MySQL for the CSV files and Redis for images. Feel free to update the Yaml files from the given repository to fit your dataset.

Use the sensors, images, ground truth Pose in the lastest session in <http://robots.engin.umich.edu/nclt/> ([Links to an external site.](#)) as your dataset.

Record a video showing the configuration of Kafka connectors, producers' python script, a proof of successfully stored data into data storage.

<https://drive.google.com/file/d/1ik3HTo3G1Yix0YDiNR9KkrImS0-o814Y/view?usp=sharing>

Screenshots:

```
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ git clone https://github.com/goergedaoud/SOFE4630U-tut3
Cloning into 'SOFE4630U-tut3'...
remote: Enumerating objects: 47, done.
remote: Counting objects: 100% (47/47), done.
remote: Compressing objects: 100% (33/33), done.
remote: Total 47 (delta 12), reused 41 (delta 10), pack-reused 0
Receiving objects: 100% (47/47), 498.84 KiB | 9.98 MiB/s, done.
Resolving deltas: 100% (12/12), done.
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ ls
mysql-app.yaml  redis-app.yaml  sc1.sql
mysql-pvc.yaml  redis-pvc.yaml  SOFE4630U-tut3
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get pvc
NAME                                STATUS    VOLUME                                     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
mysql-volumeclaim                   Bound    pvc-b71b6004-9011-4237-a975-616601954eee  10Gi        RWO              standard        7m52s

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (project123-344107)$ kubectl get pvc
NAME                                STATUS    VOLUME                                     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
mysql-volumeclaim                   Bound    pvc-b71b6004-9011-4237-a975-616601954eee  10Gi        RWO              standard        119s
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (project123-344107)$ kubectl get pods
NAME                                READY     STATUS    RESTARTS   AGE
web-server-c9fd75945-qwpfx          0/1      ImagePullBackOff    0           36h
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (project123-344107)$ kubectl get deployment
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
web-server  0/1     1             0           40d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (project123-344107)$ kubectl get services
NAME            TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)        AGE
kubernetes     ClusterIP   10.14.176.1    <none>         443/TCP        40d
web-server     LoadBalancer 10.14.180.209  104.154.156.244 80:30902/TCP   40d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (project123-344107)$

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get pods
NAME                                READY     STATUS    RESTARTS   AGE
web-server-c9fd75945-qwpfx          0/1      ImagePullBackOff    0           36h
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl exec web-server-c9fd75945-qwpfx
error: you must specify at least one command for the container
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get services
NAME            TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)        AGE
kubernetes     ClusterIP   10.14.176.1    <none>         443/TCP        40d
web-server     LoadBalancer 10.14.180.209  104.154.156.244 80:30902/TCP   40d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl apply -f mysql-pvc.yaml
persistentvolumeclaim/mysql-volumeclaim unchanged
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get pvc
NAME                                STATUS    VOLUME                                     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
mysql-volumeclaim                   Bound    pvc-b71b6004-9011-4237-a975-616601954eee  10Gi        RWO              standard        34m
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl apply -f mysql-app.yaml
service/mysql created
deployment.apps/mysql created
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get pods
NAME                                READY     STATUS    RESTARTS   AGE
mysql-7dcb5fd764-jvfge              1/1      Running    0           5m52s
web-server-c9fd75945-qwpfx          0/1      ErrImagePull    0           36h
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get deployment
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
mysql   1/1     1             1           6m15s
web-server  0/1     1             0           40d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get services
NAME            TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)        AGE
kubernetes     ClusterIP   10.14.176.1    <none>         443/TCP        40d
mysql          LoadBalancer 10.14.179.156  104.154.215.8  3306:31543/TCP  6m31s
web-server     LoadBalancer 10.14.180.209  104.154.156.244 80:30902/TCP   40d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ clear
```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmil1)$ kubectl exec -it mysql-7dcb5fd764-jvfgc -- mysql -uuser -pSOFE4630U
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use myDB;
Database changed
mysql> select * from myDB.test;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '
select * from myDB.test' at line 1
mysql> exit
Bye
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmil1)$ kubectl exec -i mysql-7dcb5fd764-jvfgc -- mysql -uuser -pSOFE4630U<<<"select * from myDB.t
est;"
-bash: kubectl: command not found
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmil1)$ kubectl exec -i mysql
-7dcb5fd764-jvfgc -- mysql -uuser -pSOFE4630U<<<"select * from myDB.test;"
mysql: [Warning] Using a password on the command line interface can be insecure.
ERROR 1045 (28000): Access denied for user 'user'@'localhost' (using password: YES)
command terminated with exit code 1

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmil1)$ cat sc1.sql
CREATE DATABASE IF NOT EXISTS myDB;
USE myDB;

DROP TABLE IF EXISTS test;

CREATE TABLE IF NOT EXISTS test (
  id serial NOT NULL PRIMARY KEY,
  name varchar(100),
  email varchar(200),
  department varchar(200),
  modified timestamp default CURRENT_TIMESTAMP NOT NULL,
  INDEX `modified_index` (`modified`)
);
USE myDB;
INSERT INTO test (name, email, department) VALUES ('alice', 'alice@abc.com', 'eng.');
```

name	email	department
'bob1'	'bob1@abc.com'	'sales'
'bob2'	'bob2@abc.com'	'sales'
'bob3'	'bob3@abc.com'	'sales'
'bob4'	'bob4@abc.com'	'sales'
'bob5'	'bob5@abc.com'	'sales'
'bob6'	'bob6@abc.com'	'sales'
'bob7'	'bob7@abc.com'	'sales'
'bob8'	'bob8@abc.com'	'sales'
'bob9'	'bob9@abc.com'	'sales'

```

INSERT INTO test (name, email, department) VALUES ('bob1', 'bob1@abc.com', 'sales');
INSERT INTO test (name, email, department) VALUES ('bob2', 'bob2@abc.com', 'sales');
INSERT INTO test (name, email, department) VALUES ('bob3', 'bob3@abc.com', 'sales');
INSERT INTO test (name, email, department) VALUES ('bob4', 'bob4@abc.com', 'sales');
INSERT INTO test (name, email, department) VALUES ('bob5', 'bob5@abc.com', 'sales');
INSERT INTO test (name, email, department) VALUES ('bob6', 'bob6@abc.com', 'sales');
INSERT INTO test (name, email, department) VALUES ('bob7', 'bob7@abc.com', 'sales');
INSERT INTO test (name, email, department) VALUES ('bob8', 'bob8@abc.com', 'sales');
INSERT INTO test (name, email, department) VALUES ('bob9', 'bob9@abc.com', 'sales');
```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ cat scl.sql | kubectl exec -i mysql-7dcb5fd764-jvfvc -- mysql -uuser -pSOFE4630U
mysql: [Warning] Using a password on the command line interface can be insecure.
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ echo "select * from myDB.test;" | kubectl exec -i mysql-7dcb5fd764-jvfvc -- mysql -uuser -pSOFE4630U
mysql: [Warning] Using a password on the command line interface can be insecure.
id      name      email      department      modified
1       alice    alice@abc.com  eng.            2022-03-16 03:04:38
2       bob1     bob1@abc.com  sales           2022-03-16 03:04:38
3       bob2     bob2@abc.com  sales           2022-03-16 03:04:38
4       bob3     bob3@abc.com  sales           2022-03-16 03:04:38
5       bob4     bob4@abc.com  sales           2022-03-16 03:04:38
6       bob5     bob5@abc.com  sales           2022-03-16 03:04:38
7       bob6     bob6@abc.com  sales           2022-03-16 03:04:38
8       bob7     bob7@abc.com  sales           2022-03-16 03:04:38
9       bob8     bob8@abc.com  sales           2022-03-16 03:04:38
10      bob9     bob9@abc.com  sales           2022-03-16 03:04:38
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl exec -i mysql-7dcb5fd764-jvfvc -- mysql -uuser -pSOFE4630U <<< "select * from myDB.test;"
mysql: [Warning] Using a password on the command line interface can be insecure.
id      name      email      department      modified
1       alice    alice@abc.com  eng.            2022-03-16 03:04:38
2       bob1     bob1@abc.com  sales           2022-03-16 03:04:38
3       bob2     bob2@abc.com  sales           2022-03-16 03:04:38
4       bob3     bob3@abc.com  sales           2022-03-16 03:04:38
5       bob4     bob4@abc.com  sales           2022-03-16 03:04:38
6       bob5     bob5@abc.com  sales           2022-03-16 03:04:38
7       bob6     bob6@abc.com  sales           2022-03-16 03:04:38
8       bob7     bob7@abc.com  sales           2022-03-16 03:04:38
9       bob8     bob8@abc.com  sales           2022-03-16 03:04:38
10      bob9     bob9@abc.com  sales           2022-03-16 03:04:38

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl exec -it mysql-7dcb5fd764-jvfvc -- mysql -uuser -pSOFE4630U
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 15
Server version: 8.0.28 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> select * from test;
ERROR 1046 (3D000): No database selected
mysql> select * from myDB.test;
+----+-----+-----+-----+-----+
| id | name | email | department | modified |
+----+-----+-----+-----+-----+
| 1 | alice | alice@abc.com | eng. | 2022-03-16 03:04:38 |
| 2 | bob1 | bob1@abc.com | sales | 2022-03-16 03:04:38 |
| 3 | bob2 | bob2@abc.com | sales | 2022-03-16 03:04:38 |
| 4 | bob3 | bob3@abc.com | sales | 2022-03-16 03:04:38 |
| 5 | bob4 | bob4@abc.com | sales | 2022-03-16 03:04:38 |
| 6 | bob5 | bob5@abc.com | sales | 2022-03-16 03:04:38 |
| 7 | bob6 | bob6@abc.com | sales | 2022-03-16 03:04:38 |
| 8 | bob7 | bob7@abc.com | sales | 2022-03-16 03:04:38 |
| 9 | bob8 | bob8@abc.com | sales | 2022-03-16 03:04:38 |
| 10 | bob9 | bob9@abc.com | sales | 2022-03-16 03:04:38 |
+----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

```

mysql> exit
Bye
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl exec -i mysql-7dcb5fd764-jvfvc -- mysql -uuser -pSOFE4630U <<< "drop table myDB.test;"
mysql: [Warning] Using a password on the command line interface can be insecure.
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl exec -i mysql-7dcb5fd764-jvfvc -- mysql -uuser -pSOFE4630U <<< "select * from myDB.test;"
mysql: [Warning] Using a password on the command line interface can be insecure.
ERROR 1146 (42S02) at line 1: Table 'myDB.test' doesn't exist
command terminated with exit code 1

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get services
NAME          TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernetes    ClusterIP      10.14.176.1      <none>            443/TCP           40d
mysql          LoadBalancer  10.14.179.156    104.154.215.8     3306:31543/TCP    112m
web-server     LoadBalancer  10.14.180.209    104.154.156.244   80:30902/TCP      40d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ mysql -uuser -pSOFE4630U -h34.67.142.244
mysql: [Warning] Using a password on the command line interface can be insecure.
ERROR 2003 (HY000): Can't connect to MySQL server on '34.67.142.244:3306' (110)
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ mysql -uuser -pSOFE4630U -h104.154.156.244
mysql: [Warning] Using a password on the command line interface can be insecure.
ERROR 2003 (HY000): Can't connect to MySQL server on '104.154.156.244:3306' (110)
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ mysql -uuser -pSOFE4630U -h104.154.215.8
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 18
Server version: 8.0.28 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> select * from myDB.test;
ERROR 1146 (42S02): Table 'myDB.test' doesn't exist
mysql> exit
Bye

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ mysql -uuser -pSOFE4630U -h104.154.215.8 <scl.sql
mysql: [Warning] Using a password on the command line interface can be insecure.
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ mysql -uuser -pSOFE4630U -h104.154.215.8
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 21
Server version: 8.0.28 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> select * from myDB.test;
+----+-----+-----+-----+-----+
| id | name | email      | department | modified |
+----+-----+-----+-----+-----+
| 1  | alice | alice@abc.com | eng.       | 2022-03-16 04:00:37 |
| 2  | bob1  | bob1@abc.com | sales      | 2022-03-16 04:00:37 |
| 3  | bob2  | bob2@abc.com | sales      | 2022-03-16 04:00:37 |
| 4  | bob3  | bob3@abc.com | sales      | 2022-03-16 04:00:37 |
| 5  | bob4  | bob4@abc.com | sales      | 2022-03-16 04:00:37 |
| 6  | bob5  | bob5@abc.com | sales      | 2022-03-16 04:00:37 |
| 7  | bob6  | bob6@abc.com | sales      | 2022-03-16 04:00:37 |
| 8  | bob7  | bob7@abc.com | sales      | 2022-03-16 04:00:37 |
| 9  | bob8  | bob8@abc.com | sales      | 2022-03-16 04:00:37 |
| 10 | bob9  | bob9@abc.com | sales      | 2022-03-16 04:00:37 |
+----+-----+-----+-----+-----+
10 rows in set (0.03 sec)

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get deployment
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
mysql     1/1     1             1            146m
web-server 0/1     1             0            41d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl delete -f mysql-app.yaml
service "mysql" deleted
deployment.apps "mysql" deleted
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl apply -f mysql-app.yaml
service/mysql created
deployment.apps/mysql created
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ mysql -uuser -pSOFE4630U -h104.154.215.8 <<< "select * from myDB.test"
mysql: [Warning] Using a password on the command line interface can be insecure.
id      name    email      department  modified
1       alice  alice@abc.com  eng.       2022-03-16 04:00:37
2       bob1   bob1@abc.com  sales      2022-03-16 04:00:37
3       bob2   bob2@abc.com  sales      2022-03-16 04:00:37
4       bob3   bob3@abc.com  sales      2022-03-16 04:00:37
5       bob4   bob4@abc.com  sales      2022-03-16 04:00:37
6       bob5   bob5@abc.com  sales      2022-03-16 04:00:37
7       bob6   bob6@abc.com  sales      2022-03-16 04:00:37
8       bob7   bob7@abc.com  sales      2022-03-16 04:00:37
9       bob8   bob8@abc.com  sales      2022-03-16 04:00:37
10      bob9   bob9@abc.com  sales      2022-03-16 04:00:37
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get services
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernetes ClusterIP   10.14.176.1      <none>           443/TCP          41d
mysql     LoadBalancer 10.14.180.191    104.154.215.8    3306:32209/TCP   2m
web-server LoadBalancer 10.14.180.209    104.154.156.244  80:30902/TCP     41d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl delete -f mysql-app.yaml
service "mysql" deleted
deployment.apps "mysql" deleted
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ pwd
/home/pranjal_saloni612/SOFE4630U-tut3/GKE
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ ls
mysql-app.yaml  redis-app.yaml  sc1.sql
mysql-pvc.yaml  redis-pvc.yaml  SOFE4630U-tut3
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl apply -f redis-pvc.yaml
persistentvolumeclaim/redis-volumeclaim created
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl apply -f redis-app.yaml
service/redis created
deployment.apps/redis created
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get pods
NAME      READY   STATUS      RESTARTS   AGE
redis-56644c686c-jgldc  1/1     Running      0           16s
web-server-c9fd75945-qwpfx 0/1     ImagePullBackOff 0           40h

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get service
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernetes ClusterIP   10.14.176.1      <none>           443/TCP          41d
redis     LoadBalancer 10.14.183.132    104.154.215.8    6379:32711/TCP   30s
web-server LoadBalancer 10.14.180.209    104.154.156.244  80:30902/TCP     41d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get service
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernetes ClusterIP   10.14.176.1      <none>           443/TCP          41d
redis     LoadBalancer 10.14.183.132    104.154.215.8    6379:32711/TCP   43s
web-server LoadBalancer 10.14.180.209    104.154.156.244  80:30902/TCP     41d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get service
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernetes ClusterIP   10.14.176.1      <none>           443/TCP          41d
redis     LoadBalancer 10.14.183.132    104.154.215.8    6379:32711/TCP   81s
web-server LoadBalancer 10.14.180.209    104.154.156.244  80:30902/TCP     41d

```



```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl get pods
NAME                                READY   STATUS              RESTARTS   AGE
redis-56644c686c-jgldc             1/1     Running             0           100s
web-server-c9fd75945-qwpfx         0/1     ImagePullBackOff    0           40h
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ kubectl exec -it redis-56644c686c-jgldc -- redis-cli
127.0.0.1:6379> auth SOFE4630U
OK
127.0.0.1:6379> set k1 test
OK
127.0.0.1:6379> get k1
"test"
127.0.0.1:6379> set key1 93.2%
OK
127.0.0.1:6379> keys *
1) "key1"
2) "k1"
127.0.0.1:6379> keys k*
1) "key1"
2) "k1"
127.0.0.1:6379> keys k?
1) "k1"
127.0.0.1:6379> keys k?y*
1) "key1"
127.0.0.1:6379> set Course
(error) ERR wrong number of arguments for 'set' command
127.0.0.1:6379> set Course "Cloud Computing"
OK
127.0.0.1:6379> get Course
"Cloud Computing"
127.0.0.1:6379> exit

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmill)$ sudo apt install redis-tools
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libjemalloc2 liblua5.1-0 liblzfl lua-bitop lua-cjson
Suggested packages:
  ruby-redis
The following NEW packages will be installed:
  libjemalloc2 liblua5.1-0 liblzfl lua-bitop lua-cjson redis-tools
0 upgraded, 6 newly installed, 0 to remove and 8 not upgraded.
Need to get 1,133 kB of archives.
After this operation, 5,136 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 https://deb.debian.org/debian bullseye/main amd64 libjemalloc2 amd64 5.2.1-3 [248 kB]
Get:2 https://deb.debian.org/debian bullseye/main amd64 liblua5.1-0 amd64 5.1.5-8.1+b3 [109 kB]
Get:3 https://deb.debian.org/debian bullseye/main amd64 liblzfl amd64 3.6-3 [10.2 kB]
Get:4 https://deb.debian.org/debian bullseye/main amd64 lua-bitop amd64 1.0.2-5 [6,936 B]
Get:5 https://deb.debian.org/debian bullseye/main amd64 lua-cjson amd64 2.1.0+dfsg-2.1 [17.5 kB]
Get:6 https://deb.debian.org/debian-security bullseye-security/main amd64 redis-tools amd64 5:6.0.16-1+deb11u2 [741 kB]
Fetched 1,133 kB in 0s (5,687 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package libjemalloc2:amd64.
(Reading database ... 135366 files and directories currently installed.)
Preparing to unpack .../0-libjemalloc2_5.2.1-3_amd64.deb ...
Unpacking libjemalloc2:amd64 (5.2.1-3) ...
Selecting previously unselected package liblua5.1-0:amd64.
Preparing to unpack .../1-liblua5.1-0_5.1.5-8.1+b3_amd64.deb ...
Unpacking liblua5.1-0:amd64 (5.1.5-8.1+b3) ...
Selecting previously unselected package liblzfl:amd64.
Preparing to unpack .../2-liblzfl_3.6-3_amd64.deb ...
Unpacking liblzfl:amd64 (3.6-3) ...

```



```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmil1)$ kubectl get servicesNAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)
AGE
kubernetes  ClusterIP  10.14.176.1      <none>           443/TCP          41d
redis       LoadBalancer 10.14.183.132    104.154.215.8    6379:32711/TCP   22m
web-server  LoadBalancer 10.14.180.209    104.154.156.244  80:30902/TCP     41d
pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmil1)$ redis-cli -h104.154.215.8
Unrecognized option or bad number of args for: '-h104.154.215.8'
.215.8
104.154.215.8:6379> keys *
(error) NOAUTH Authentication required.
104.154.215.8:6379> auth SOFE4630U
OK
104.154.215.8:6379> keys *
1) "Course"
2) "key1"
3) "k1"
104.154.215.8:6379> select 0
OK
104.154.215.8:6379> keys *
1) "Course"
2) "key1"
3) "k1"
104.154.215.8:6379> select 1
OK
104.154.215.8:6379[1]> keys *
(empty array)
104.154.215.8:6379[1]> select 0
OK
104.154.215.8:6379> keys *
1) "Course"
2) "key1"
3) "k1"

```

```

pranjal_saloni612@cloudshell:~/SOFE4630U-tut3/GKE (projectmil1)$ redis-cli -h 104.154.215.8
104.154.215.8:6379> auth SOFE4630U
OK
104.154.215.8:6379> get key1
"93.2%"
104.154.215.8:6379> 

```

```

redis_access.py x
1  import redis          # pip install redis
2  ip="104.154.215.8"
3  r = redis.Redis(host=ip, port=6379, db=0,password='SOFE4630U')
4  v=r.get('key1');
5  print(v);
6  r.set('key1','30'.encode('utf-8'));

```

```
{
  "name": "MySQLSourceConnector_0",
  "config": {
    "connector.class": "MySQLSource",
    "name": "MySQLSourceConnector_0",
    "kafka.auth.mode": "KAFKA_API_KEY",
    "kafka.api.key": "*****",
    "kafka.api.secret": "*****",
    "topic.prefix": "myDB",
    "connection.host": "104.154.215.8",
    "connection.port": "3306",
    "connection.user": "user",
    "connection.password": "*****",
    "db.name": "myDB",
    "ssl.mode": "prefer",
    "table.whitelist": "test",
    "timestamp.column.name": "modified",
    "incrementing.column.name": "id",
    "poll.interval.ms": "100",
    "output.data.format": "AVRO",
    "tasks.max": "1"
  }
}
```

Connector name	Status	Category	ID	Plugin name	Tasks	Messages/sec	Bytes/sec	Messages behi
<u>MySqlSourceConnector_0</u>	● Provisionin	Source	lcc-gqq283	MySqlSource	0 → 1	0	--	0

Errors:

MySQLSourceConnector_0

Overview Settings

Failed

There were some errors with your configuration:

kafka.api.secret: Provided Kafka ApiKey is invalid

connection.password: Could not connect to database

table.whitelist: Unable to check whether table(s) exist due to connection error

timestamp.column.name: Unable to check whether specified column is a timestamp column due to connection error

timestamp.column.name: Unable to check whether specified column is nullable due to connection error

incrementing.column.name:

Messages processed

0

Total in last 7 days

```
mysql: [Warning] Using a password on the command line interface can be insecure.  
ERROR 2003 (HY000): Can't connect to MySQL server on '104.154.215.8:3306' (110)  
pranjal_saloni612@cloudshell:~ (projectmil1)$
```

At this point, I kept getting these errors shown above which I was not too sure as to why I got them. I made sure to use the IP address for mysql and redis, yet it failed to work. Due to this reason, I was unable to move onto the next steps.