sudo apt update
sudo apt install default-jdk

Download/extract kafka:
wget https://archive.apache.org/dist/kafka/3.6.1/kafka_2.13-3.6.1.tgz
tar -xzf kafka_2.13-3.6.1.tgz
cd kafka_2.13-3.6.1

Start Zookeeper:
bin/zookeeper-server-start.sh config/zookeeper.properties

Start Server (new terminal) :
bin/kafka-server-start.sh config/server.properties

Create a Kafka Topic (new terminal) :
bin/kafka-topics.sh --create --topic test-topic --bootstrap-server localhost:9092 --partitions 1 --replication-factor 1

Send Messages using Producer (new terminal):
bin/kafka-console-producer.sh --topic test-topic --bootstrap-server localhost:9092
#type any message you want send (example):
hello
this is my first kafka message

Receive messages using consumer (new terminal):
bin/kafka-console-consumer.sh --topic test-topic --from-beginning --bootstrap-server localhost:9092

Now Download python to receive and save messages to database

Python download (new terminal):
sudo apt update
sudo apt install python3 python3-pip
pip3 install kafka-python

Create python script to connect to database:
nano consumer_to_db.py

Script (paste the script):

```
from kafka import KafkaConsumer
import sqlite3

# Step 1: Connect to (or create) SQLite database
conn = sqlite3.connect('kafka_messages.db')
cursor = conn.cursor()

# Step 2: Create a table to store messages (if it doesn't exist)
cursor.execute('''
   CREATE TABLE IF NOT EXISTS messages (
      id INTEGER PRIMARY KEY AUTOINCREMENT,
      message TEXT NOT NULL
   )
''')
conn.commit()

# Step 3: Connect to Kafka topic
consumer = KafkaConsumer(
   'test-topic',                # Kafka topic you created earlier
   bootstrap_servers='localhost:9092',  # Kafka server
   auto_offset_reset='earliest',    # Read messages from the beginning
   group_id='my-group',           # Consumer group ID
   enable_auto_commit=True
)
print("Listening for messages...")

# Step 4: Read messages from Kafka and save to DB
try:
   for msg in consumer:
      message = msg.value.decode('utf-8')
      print(f"Received: {message}")
      cursor.execute('INSERT INTO messages (message) VALUES (?)', (message,))
      conn.commit()
except KeyboardInterrupt:
   print("Stopped by user.")
finally:
   consumer.close()
   conn.close()
```

Run the script:

```
python3 consumer_to_db.py
```

Now you can see the messages sended through producer

Now finally, Check the database to check if the messages have been stored:

Open python shell:
python3

Paste the script:
```
import sqlite3
conn = sqlite3.connect('kafka_messages.db')
cursor = conn.cursor()
cursor.execute("SELECT * FROM messages")
rows = cursor.fetchall()
for row in rows:
    print(row)
```

DONE

One error you might encounter while downloading python :
“Could not get lock /var/lib/dpkg/lock-frontend. It is held by process 9652”

Solution (run following commands):
```
sudo kill -9 9652
sudo rm /var/lib/dpkg/lock-frontend
sudo rm /var/cache/apt/archives/lock
sudo dpkg --configure –a
```

after this try python download command again