MariaDB Setup

we need to add Dependency
Since it is MySQL-based we need to add JDBC dependencies as well

```
<dependency>
  <groupId>org.springframework.boot</groupId>
  <artifactId>spring-boot-starter-jdbc</artifactId>
</dependency>

<dependency>
  <groupId>org.springframework.ai</groupId>
  <artifactId>spring-ai-starter-vector-store-mariadb</artifactId>
</dependency>

<dependency>
  <groupId>org.mariadb.jdbc</groupId>
  <artifactId>mariadb-java-client</artifactId>
  <scope>runtime</scope>
</dependency>
```

Download
https://mariadb.org/download/

MariaDB Server
Download the latest version

Download MariaDB Server

MariaDB Server is one of the world's most popular open source relational databases and is available in the standa
major Linux distributions. Look for the package mariadb-server using the package manager of your operating sys
you can use the following resources:

MariaDB Server | MariaDB Server Repositories | Connectors

MariaDB Server Version

MariaDB Server 12.1.2 Rolling

Display older releases: ☐

See the MariaDB 12.1.2 Release Notes and Changes and Improvements in MariaDB 12.1.

Operating System

Windows

Architecture

x86_64

Package Type

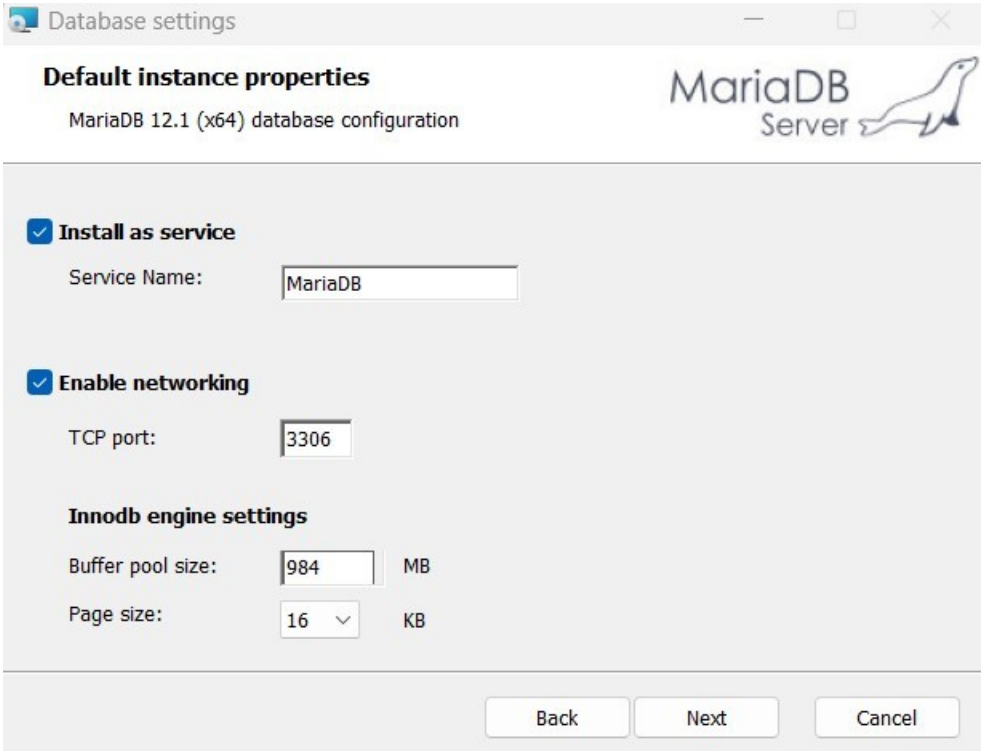
MSI Package

Download

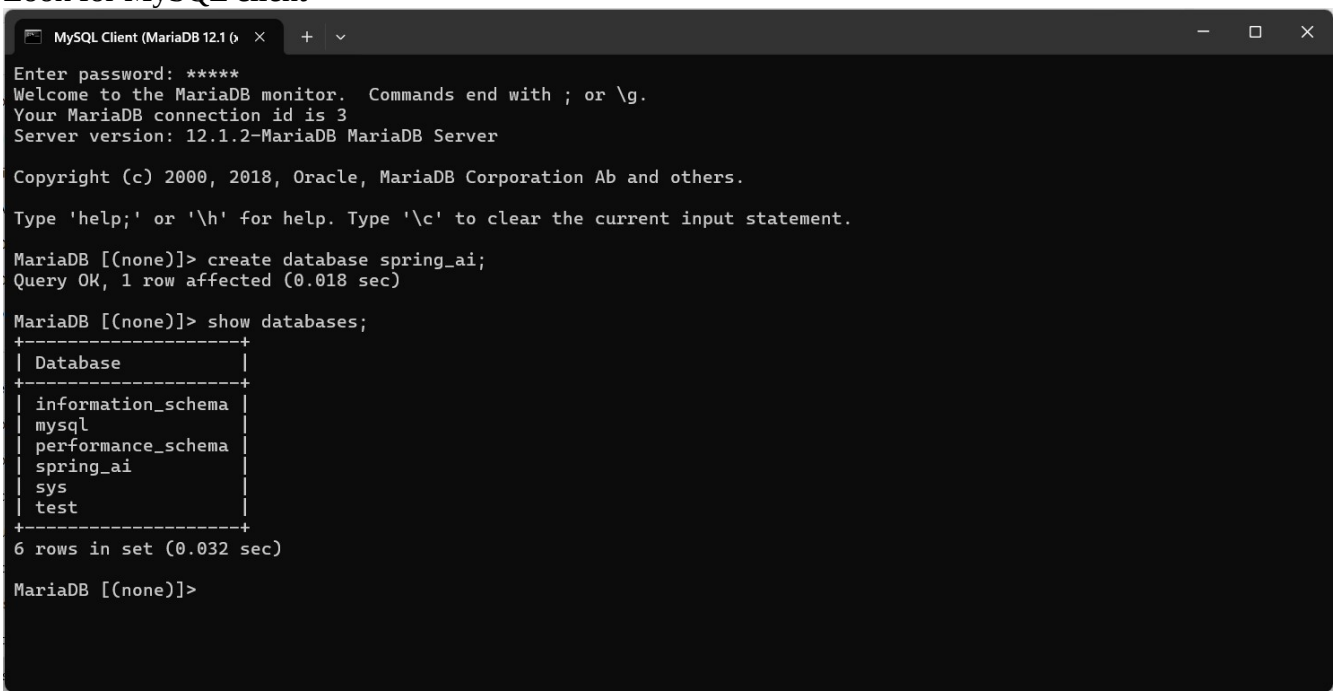
Mirror

ACORN-NS - Halifax, NS

Release date: 2025-11-19



Look for MySQL client



Open MySQL Client MariaDB

Add schema.sql into the init folder inside resources folder

```
CREATE TABLE IF NOT EXISTS vector_store (
id TEXT PRIMARY KEY,
content TEXT,
metadata JSONB,
embedding VECTOR(1536))
);

CREATE INDEX IF NOT EXISTS vector_store_embedding_idx ON vector_store USING HNSW
(embedding vector_cosine_ops);

select * from vector_store;
```

```
MariaDB [(none)]> create database spring_ai;
Query OK, 1 row affected (0.018 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| spring_ai          |
| sys                |
| test               |
+--------------------+
6 rows in set (0.032 sec)

MariaDB [(none)]> describe spring_ai;
ERROR 1046 (3D000): No database selected
MariaDB [(none)]> use spring_ai;
Database changed
MariaDB [spring_ai]> show tables;
+---------------------+
| Tables_in_spring_ai |
+---------------------+
| vector_name         |
| vector_store        |
+---------------------+
```

MariaDB [spring_ai]> select id, content, metadata, VEC_ToText(embedding) AS embedding_text from vector_store; ---> this will actually give the embedding

.0102955,-0.0178205,-0.00534384,0.00821928,-0.0178205,-0.0185474,-0.0128227,-0.021944,0.00298018,-0.00293351,0.00824028,0.0101011,0.00967338,-0.0145178,-0.00593311,-0.0125194,0.0211819,0.015451,-0.0171695,0.00834368,0.0330326,-0.00489112,-0.0100389,0.0152255,0.00505831,-0.0188802,0.0239035,-0.000378109,-0.0188802,0.00783046,0.0210886,0.00692455,0.0245256,0.00488723,0.00988333,0.00236197,0.0020451,0.0045723,-0.0160186,0.0242923,-0.00409797,-0.0109253,0.0310419,0.0226438,0.000297919,0.0157776,-2.70642e-5,0.0196267,-0.0108165,-0.0130326,0.00661351,0.0110186,0.000710535,0.01986,-0.00543933,0.00870138,-0.0202332,-0.0106532,-0.00459952] |
| fdf44da6-1373-443d-a59f-e4d9a7cabb48 | Category: Electronics
Features: Fast wireless charging, Anti-slip base, LED indicator, Multi-device support

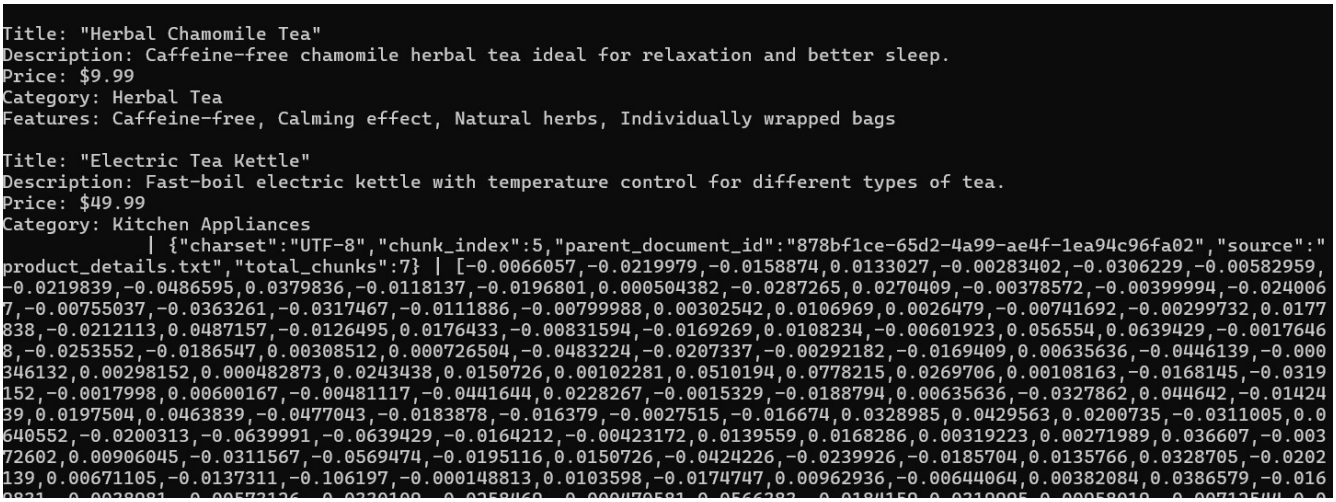
Title: "Smart Doorbell Camera"
Description: Wi-Fi enabled doorbell camera with motion detection and two-way audio.
Price: $99.99
Category: Smart Home
Features: HD video, Night vision, Motion alerts, Two-way audio

Title: "Glass Teapot with Infuser"
Description: Heat-resistant glass teapot with removable infuser for loose leaf tea.
Price: $27.99
Category: Tea Accessories
Features: Borosilicate glass, Removable infuser, Drip-free spout, 800ml capacity

Title: "Cold Brew Tea Pitcher"
| {"charset":"UTF-8","chunk_index":4,"parent_document_id":"878bf1ce-65d2-4a99-ae4f-1ea94c96fa02","source":"product_details.txt","total_chunks":7} | [-0.0265875,-0.0117125,-0.018681,0.0230528,0.0106195,-0.0124023,0.00484078,-0.00691817,-0.0209909,0.0388503,0.0111621,-0.0324631,0.0107978,-0.015937,0.010697,-0.0272696,-0.0108985,-0.00287579,0.000726699,-0.0224017,-0.0338894,-0.0142782,-0.0102784,-0.00868163,0.00491055,0.0148595,0.00214134,-0.00976683,-0.0110148,-0.0118675,0.0141542,-0.0273781,-0.012193,-0.0182314,-0.0032498,0.0229133,0.0133248,0.0503225,0.0475009,0.0142704,-0.0151541,-0.024107,-0.00973583,0.0124721,-0.0572057,0.00474389,-0.0168207,-0.0233164,-0.00998388,-0.0308043,0.00538339,-0.000602676,-0.044648,0.037455,0.0191926,-0.00569300,0.03000775,0.0602003,0.0277347,0.0173323,0.00531362,-0.016000176,-0.00000000,0.0097000358,0
Description: Fast boil electric kettle with temperature control for different types of tea.
Price: $49.99
Category: Kitchen Appliances
| {"charset":"UTF-8","chunk_index":5,"parent_document_id":"878bf1ce-65d2-4a99-ae4f-1ea94c96fa02","source":"product_details.txt","total_chunks":7} | ◆t3◆4◆◆D&◆◆◆◆Y<◆9◆◆◆◆$◆◆◆◆◆2OG◆◆◆>◆A◆:8◆◆◆8:◆S◆◆r◆<◆x◆◆◆◆◆◆li◆◆◆◆◆◆aP7◆◆

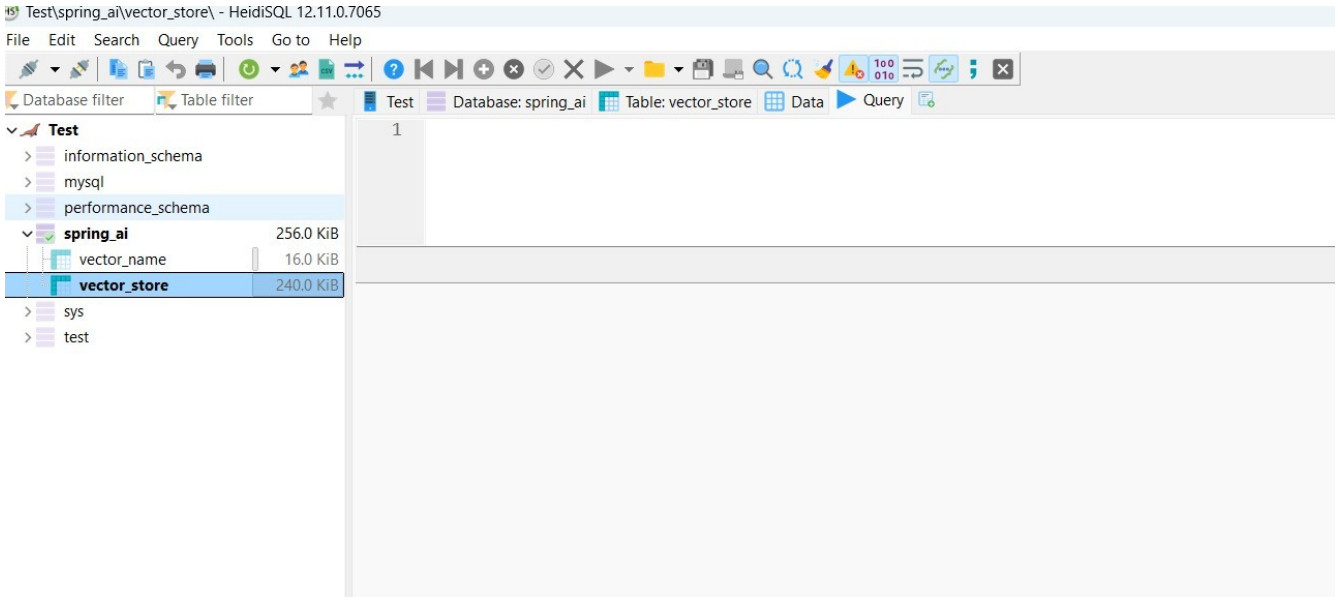
Title: "Herbal Chamomile Tea"
Description: Caffeine-free chamomile herbal tea ideal for relaxation and better sleep.
Price: $9.99
Category: Herbal Tea
Features: Caffeine-free, Calming effect, Natural herbs, Individually wrapped bags

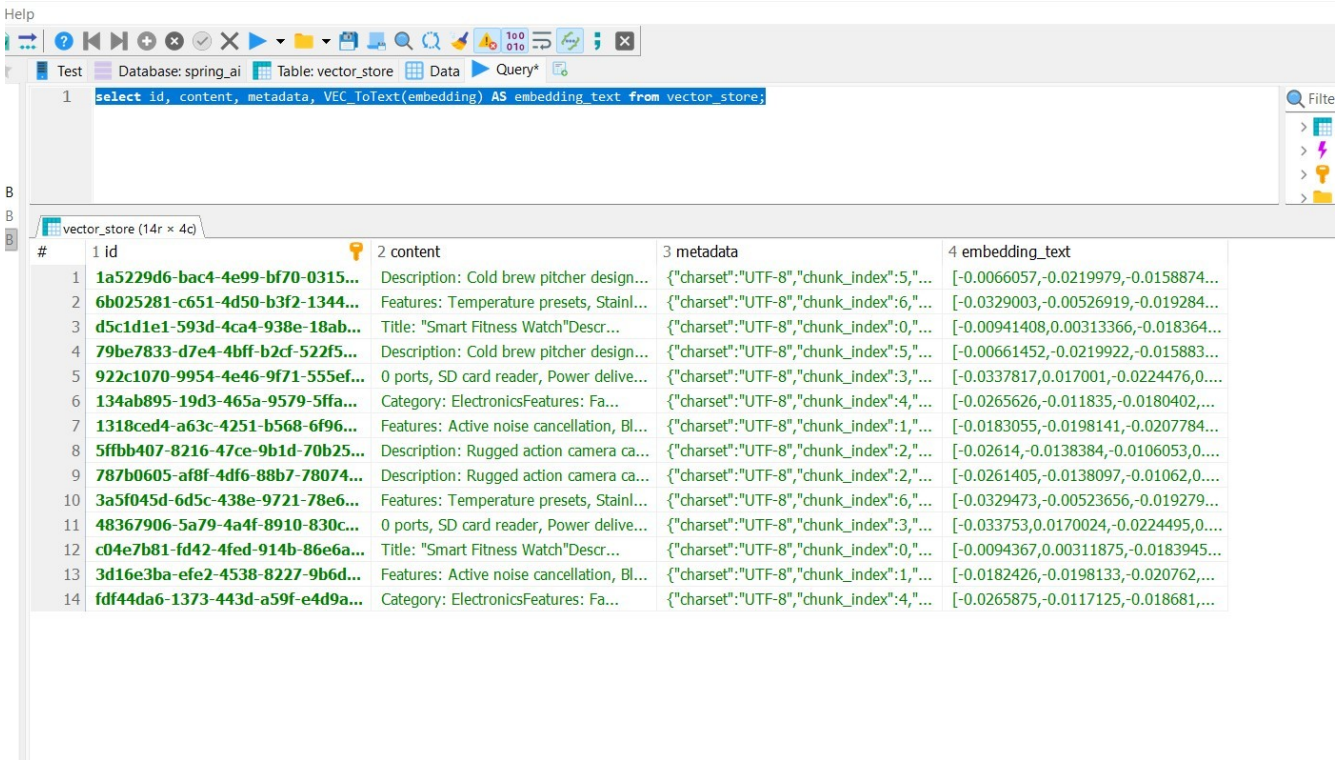
Title: "Electric Tea Kettle"
Description: Fast-boil electric kettle with temperature control for different types of tea.
Price: $49.99
Category: Kitchen Appliances
| {"charset":"UTF-8","chunk_index":5,"parent_document_id":"878bf1ce-65d2-4a99-ae4f-1ea94c96fa02","source":"product_details.txt","total_chunks":7} | [-0.0066057,-0.0219979,-0.0158874,0.0133027,-0.00283402,-0.0306229,-0.00582959,-0.0219839,-0.0486595,0.0379836,-0.0118137,-0.0196801,0.000504382,-0.0287265,0.0270409,-0.00378572,-0.00399994,-0.0240067,-0.00755037,-0.0363261,-0.0317467,-0.0111886,-0.00799988,0.00302542,0.0106969,0.0026479,-0.00741692,-0.00299732,0.0177838,-0.0212113,0.0487157,-0.0126495,0.0176433,-0.00831594,-0.0169269,0.0108234,-0.00601923,0.056554,0.0639429,-0.00176468,-0.0253552,-0.0186547,0.00308512,0.000726504,-0.0483224,-0.0207337,-0.00292182,-0.0169409,0.00635636,-0.0446139,-0.000346132,0.00298152,0.000482873,0.0243438,0.0150726,0.00102281,0.0510194,0.0778215,0.0269706,0.00108163,-0.0168145,-0.0319152,-0.0017998,0.00600167,-0.00481117,-0.0441644,0.0228267,-0.0015329,-0.0188794,0.00635636,-0.0327862,0.044642,-0.0142439,0.0197504,0.0463839,-0.0477043,-0.0183878,-0.016379,-0.0027515,-0.016674,0.0328985,0.0429563,0.0200735,-0.0311005,0.0640552,-0.0200313,-0.0639991,-0.0639429,-0.0164212,-0.00423172,0.0139559,0.0168286,0.00319223,0.00271989,0.036607,-0.00372602,0.00906045,-0.0311567,-0.0569474,-0.0195116,0.0150726,-0.0424226,-0.0239926,-0.0185704,0.0135766,0.0328705,-0.0202139,0.00671105,-0.0137311,-0.106197,-0.000148813,0.0103598,-0.0174747,0.00962936,-0.00644064,0.00382084,0.0386579,-0.0168831,-0.0028981,-0.00572126,-0.0220109,-0.0258460,-0.000470581,-0.0566282,-0.0184150,-0.0210905,-0.00958010,-0.00712500,0.0
0.00973583,0.0124721,-0.0572057,0.00474389,-0.0168207,-0.0233164,-0.00998388,-0.0308043,0.00538339,-0.000602676,-0.044648,0.037455,0.0191926,-0.00569300,0.03000775,0.0602003,0.0277347,0.0173323,0.00531362,-0.016000176,-0.00000000,0.0097000358,0



You can also use beekeeper studio

i ran the same query in HeidiSQL: select id, content, metadata, VEC_ToText(embedding) AS embedding_text from vector_store; ---> this will actually give the embedding





#	1 id	2 content	3 metadata	4 embedding_text
1	1a5229d6-bac4-4e99-bf70-0315...	Description: Cold brew pitcher design...	{"charset":"UTF-8","chunk_index":5,"...	[-0.0066057,-0.0219979,-0.0158874...
2	6b025281-c651-4d50-b3f2-1344...	Features: Temperature presets, Stainl...	{"charset":"UTF-8","chunk_index":6,"...	[-0.0329003,-0.00526919,-0.019284...
3	d5c1d1e1-593d-4ca4-938e-18ab...	Title: "Smart Fitness Watch"Descr...	{"charset":"UTF-8","chunk_index":0,"...	[-0.00941408,0.00313366,-0.018364...
4	79be7833-d7e4-4bff-b2cf-522f5...	Description: Cold brew pitcher design...	{"charset":"UTF-8","chunk_index":5,"...	[-0.00661452,-0.0219922,-0.015883...
5	922c1070-9954-4e46-9f71-555ef...	0 ports, SD card reader, Power delive...	{"charset":"UTF-8","chunk_index":3,"...	[-0.0337817,0.017001,-0.0224476,0....
6	134ab895-19d3-465a-9579-5ffa...	Category: ElectronicsFeatures: Fa...	{"charset":"UTF-8","chunk_index":4,"...	[-0.0265626,-0.011835,-0.0180402,...
7	1318ced4-a63c-4251-b568-6f96...	Features: Active noise cancellation, Bl...	{"charset":"UTF-8","chunk_index":1,"...	[-0.0183055,-0.0198141,-0.0207784...
8	5ffbb407-8216-47ce-9b1d-70b25...	Description: Rugged action camera ca...	{"charset":"UTF-8","chunk_index":2,"...	[-0.02614,-0.0138384,-0.0106053,0....
9	787b0605-af8f-4df6-88b7-78074...	Description: Rugged action camera ca...	{"charset":"UTF-8","chunk_index":2,"...	[-0.0261405,-0.0138097,-0.01062,0....
10	3a5f045d-6d5c-438e-9721-78e6...	Features: Temperature presets, Stainl...	{"charset":"UTF-8","chunk_index":6,"...	[-0.0329473,-0.00523656,-0.019279...
11	48367906-5a79-4a4f-8910-830c...	0 ports, SD card reader, Power delive...	{"charset":"UTF-8","chunk_index":3,"...	[-0.033753,0.0170024,-0.0224495,0....
12	c04e7b81-fd42-4fed-914b-86e6a...	Title: "Smart Fitness Watch"Descr...	{"charset":"UTF-8","chunk_index":0,"...	[-0.0094367,0.00311875,-0.0183945...
13	3d16e3ba-efe2-4538-8227-9b6d...	Features: Active noise cancellation, Bl...	{"charset":"UTF-8","chunk_index":1,"...	[-0.0182426,-0.0198133,-0.020762,...
14	fdf44da6-1373-443d-a59f-e4d9a...	Category: ElectronicsFeatures: Fa...	{"charset":"UTF-8","chunk_index":4,"...	[-0.0265875,-0.0117125,-0.018681,...