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Cassandra database python

Choose between synchronous or asynchronous replication for each update. Below is what the file declarations represent: The code below imports HTTP functionalities. To create the module, follow the steps described below. From the Astra dashboard page, click on the database name from the left hand side of the page:Then, just below the database name, click on Connect:Choose Python from the drivers list:Now you will see a detailed guide of the steps you need to follow pop up on the right side of the page. $ sudo apt install -y python3-pip Using pip, install the Cassandra database driver. Based on the OS you are using, pick the appropriate installer from the official page.To verify that Python is correctly installed on your computer, open a command line window and execute the following:python --versionThis will return with the version that you just installed:Python 3.8.2If you correctly installed Python and got a command not found or a similar error message, this will most likely mean that Python has not correctly been added to the PATH variable on your OS; so make sure to double-check that the path that Python was installed on, is part of the PATH.Installing Python DependenciesLike any other programming language, Python also uses a separate utility to install packages. Make sure to start the Cassandra service before proceeding. cqlsh> USE online_shop; Create a sample products table with three columns. Project details 3.29.2 Sep 10, 2024 3.29.1 Mar 20, 2024 3.29.0 Dec 21, 2023 3.28.0 Jun 6, 2023 3.27.0 May 2, 2023 3.26.0 Mar 28, 2023 3.25.0 Mar 18, 2021 3.24.0 Jun 18, 2020 3.23.0 Apr 6, 2020 3.22.0 Feb 26, 2020 3.21.0 Jan 15, 2020 3.20.2 Nov 19, 2019 3.20.1 Nov 6, 2019 3.20.0 Oct 28, 2019 3.19.0 Aug 26, 2019 3.18.0 May 27, 2019 3.17.1 May 2, 2019 3.17.0 Feb 19, 2019 3.16.0 Nov 12, 2018 3.15.1 Sep 6, 2018 3.15.0 Aug 30, 2018 3.14.0 Apr 17, 2018 3.13.0 Jan 30, 2018 3.12.0 Nov 6, 2017 3.11.0 Jul 24, 2017 3.10 May 24, 2017 3.9.0 Apr 11, 2017 3.8.1 Mar 16, 2017 3.8.0 Feb 21, 2017 3.7.1 Oct 26, 2016 3.7.0 Sep 13, 2016 3.6.0 Aug 1, 2016 3.5.0 Jun 27, 2016 3.4.1 May 26, 2016 3.4.0 May 24, 2016 3.3.0 May 2, 2016 3.2.2 Apr 19, 2016 3.2.1 Apr 13, 2016 3.2.0 Apr 12, 2016 3.2.0a1 pre-release Mar 30, 2016 3.1.1 Mar 14, 2016 3.1.0 Mar 10, 2016 3.1.0a2 pre-release Feb 4, 2016 3.1.0a1 pre-release Jan 29, 2016 3.0.0 Nov 24, 2015 3.0.0rc1 pre-release Nov 9, 2015 3.0.0a3 pre-release Sep 21, 2015 3.0.0a2 pre-release Aug 24, 2015 3.0.0a1 pre-release Aug 6, 2015 2.7.2 Sep 14, 2015 2.7.1 Aug 25, 2015 2.7.0 Aug 25, 2015 2.6.0 Jul 20, 2015 2.6.0c2 pre-release Jun 25, 2015 2.6.0c1 pre-release Jun 4, 2015 2.5.1 Apr 23, 2015 2.5.0 Mar 30, 2015 2.1.4 Jan 26, 2015 2.1.3 Dec 16, 2014 2.1.2 Oct 16, 2014 2.1.1 Sep 11, 2014 2.1.0 Aug 7, 2014 2.1.0c1 pre-release Jul 25, 2014 2.1.0b1 pre-release Jul 11, 2014 2.0.2 Jun 10, 2014 2.0.1 May 28, 2014 2.0.0 May 28, 2014 2.0.0b1 pre-release May 6, 2014 1.1.2 May 8, 2014 1.1.1 Apr 17, 2014 1.1.0 Apr 16, 2014 1.0.2 Mar 4, 2014 1.0.1 Feb 19, 2014 1.0.0 Jan 29, 2014 1.0.0b7 pre-release Nov 12, 2013 1.0.0b6 pre-release Oct 22, 2013 1.0.0b5 pre-release Oct 10, 2013 Details for the file cassandra-driver-3.29.2.tar.gz. 8. In particular make sure to export the three environment variables that the Python codes expects in order to securely and successfully establish the connection to Astra:ASTRA_PATH_TO_SECURE_BUNDLEASTRA_CLIENT_IDASTRA_CLIENT_SECRETNote: ASTRA_CLIENT_ID and ASTRA_CLIENT_SECRET were generated in the above section.Locate the downloaded bundle zip from the previous step, and copy it in a directory that can be configured as part of the ASTRA_PATH_TO_SECURE_BUNDLE environment variable:cloud_config= {'secure_connect_bundle': os.environ.get('ASTRA_PATH_TO_SECURE_BUNDLE')}For example, if you put the secure bundle zip in the root of the Python project the value of ASTRA_PATH_TO_SECURE_BUNDLE environment variable would need to be equal to '../secure-connect-cassandra-pythondemo.zip' and the root directory of the project would include the following files and folders:Similarly set ASTRA_CLIENT_ID and ASTRA_CLIENT_SECRET environment variables with the values from the previous step.Once connection is established, we proceed by generating and inserting data in the generateDataEntrypoint(session) method by passing the Astra session object that was generated in the getDBSession() method in the previous step.Note: Having hardcoded secrets is not recommended as a best practice; make sure to not use this in production and design your applications with security first mindset. Details for the file cassandra_driver-3.29.2-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl. Before doing so, we need to generate an application token and export five environment variables in total. File metadata Hashes for cassandra_driver-3.29.2-cp310-cp310-win32.whl Algorithm Hash digest SHA256 f9df1e6ae4201eb2eae899cb0649d46b3eb0843f075199b51360bc9d59679a31 MD5 b9be97694350f0c5c55b9578aea34774 BLAKE2b-256 a5bd7c62675d722f99097934675468636fdabd42b1e418e9fc567562ee2142d7 See more details on using hashes here. Details for the file cassandra_driver-3.29.2-cp310-cp310-macosx_10_9_x86_64.whl. import json import cassandra_gateway ... This architecture is different from the traditional primary-secondary architecture which is prone to a single point of failure. Switch to the new online_shop keyspace. First, we will make sure to download the bundle and store it in our local storage. Below is what the file declarations represent: The declaration below imports the Apache Cassandra database driver for Python. File metadata Hashes for cassandra_driver-3.29.2-cp311-cp311-macosx_11_0_arm64.whl Algorithm Hash digest SHA256 52edc6d4bd7d07b10dc08b7f044dbc2ebe24ad7009c23a65e0916faed1a34065 MD5 c42a05faa87cb0504ca9bac3f6628176 BLAKE2b-256 f826adc5beac60c373733569868ee1843691fae5d9d8cd07a4907e7c4a55bdaa See more details on using hashes here. $ cqlsh Create a sample online_shop keyspace. $ nano index.py Add the following contents to the file. Datastax Astra is a serverless database-as-a-Service powered by Apache Cassandra which can be launched with just a few clicks, has a generous free tier, and is available in major cloud providers (Amazon Web Services, Azure or Google Cloud).The official Astra guide has all the information you need to create an Astra service; you need to register for an account and then select a few more details, such as choosing a cloud provider and naming your database.Using astrapy to generate JSON and insert to AstraUsing React, Angular or Vue as a frontend? The CassandraGateway class hosts three methods as below: db_session(self): Executes the clstr = Cluster() and session = clstr.connect('online_shop') functions to connect to the Apache Cassandra keyspace you created earlier. These high-performance features make Cassandra one of the best database systems for deploying Python applications. Here is an example of how you can do this: session.execute("CREATE KEYSPACE IF NOT EXISTS my_keyspace WITH replication = {'class': 'SimpleStrategy', 'replication_factor': 1}") session.execute("USE my_keyspace") session.execute("CREATE TABLE IF NOT EXISTS my_table (id UUID PRIMARY KEY, name TEXT, age INT)") 4. As you can see we are going to call insert_query within the following for loop as many times as the number_of_rows variable is, inserting data to the table we created in the previous step:session.execute(insert_query, [device_id, t_id, value_ts, t_pub_ts, round(random.choice(readings),2)])The session.execute(insert_query, data) function call is effectively using the Astra database session that we created in the above step. You can use try-except blocks to catch and handle exceptions that may occur during database operations. Installing Cassandra The first step is to install Cassandra on your machine. To check that data has been inserted in Astra, let's move to the Astra console and execute a CQL script.In the Astra console, navigate to the CQL Console tab:Type the following CQL query and hit enter:select * from cassandra_pythondemo.demo_readings;This gives the following result set:The insertion script in Python worked like a charm and we have successfully inserted data in the Astra Cassandra database.ConclusionWe have now successfully built a Python script that connects to Astra, a serverless Database-as-a-Service powered by Apache Cassandra. Create the Application's Entry PointEvery Python application requires a main file that executes when the application starts. Explore connection configurations, CRUD operations, and best practices. Closing the Connection Finally, make sure to close the connection to Cassandra once you are done with your operations: cluster.shutdown() By following this guide, you should now have a good understanding of how to use Cassandra with Python to build scalable and reliable applications. EXIT; Install Project DependenciesTo keep your application organized, Python source code files must be in a separate directory. Details for the file cassandra_driver-3.29.2-cp312-cp312-macosx_11_0_arm64.whl. cqlsh:online_shop> CREATE TABLE products (product_id BIGINT PRIMARY KEY, product_name TEXT, retail_price DOUBLE);In the above table, the product_id column is a PRIMARY KEY that uniquely identifies the products. A PreparedStatement is particularly useful for queries that are executed multiple times in an application, which fits our use-case. The entrypoint is located in the final two lines of the script. The dictionary format displays meaningful data for JSON responses. The audit logging feature for operators tracks the DML, DDL, and DCL activity with minimal impact to normal workload performance, while the fqltool allows the capture and replay of production workloads for analysis. Details for the file cassandra_driver-3.29.2-cp312-cp312-win32.whl. You can download the latest version of Cassandra from the official website and follow the installation instructions provided. Read and write throughput both increase linearly as new machines are added, with no downtime or interruption to applications. Details for the file cassandra_driver-3.29.2-cp312-cp312-manylinux_2_17_aarch64.manylinux2014_aarch64.whl. The driver supports Python 3.8 through 3.12. For example, the following script will generate 2 timeseries with 10 rows each(based on the timeseries_to_generate and number_of_rows variables):Inserting the data to Astra takes place in the generateInsertData(t_id, number_of_rows, session) method:First, we are preparing dummy data with the readings and device_ids variables. File metadata Hashes for cassandra_driver-3.29.2-cp38-cp38-win_amd64.whl Algorithm Hash digest SHA256 a66b20c421d8fb21f18bd0ac713de6f09c5c25b6ab3d6043c3779b9c012d7c98 MD5 fb20b6bffb94dd05ccde0da57fdfca2f BLAKE2b-256 ab48ede8086e69e12c5ff3a320aae5f00cc071483bd771c52f450969068766bf See more details on using hashes here. from cassandra.query import dict_factory ... Cassandra is suitable for applications that can't afford to lose data, even when an entire data center goes down. Details for the file cassandra_driver-3.29.2-cp38-cp38-manylinux_2_17_aarch64.manylinux2014_aarch64.whl. Zero Copy Streaming makes this up to 5x faster without vnodes for a more elastic architecture particularly in cloud and Kubernetes environments. Note the location of the downloaded zip.How to create a Cassandra Table in AstraIn this section we are going to be generating a fictional time series dataset in Python and insert the data in our Astra database using the Datastax Python ODBC/JDBC driver.First, we are going to create the Astra table that will hold our data. Details for the file cassandra_driver-3.29.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl. Details for the file cassandra_driver-3.29.2-cp39-cp39-macosx_10_9_x86_64.whl. To ensure reliability and stability, Cassandra is tested on clusters as large as 1,000 nodes and with hundreds of real world use cases and schemas tested with replay, fuzz, property-based, fault-injection, and performance tests. Details for the file cassandra_driver-3.29.2-cp311-cp311-manylinux_2_17_aarch64.manylinux2014_aarch64.whl. File metadata Hashes for cassandra_driver-3.29.2-cp311-cp311-win_amd64.whl Algorithm Hash digest SHA256 69aa53f1bdb23487765faa92eef57366637878eafc412f46af999e722353b22f MD5 36ea3100ed0548703632370930987fc8 BLAKE2b-256 865763654b85a2e4fa3af6afa8e883fdad658cba9d7565d098ac281a358abf8c See more details on using hashes here. Export the ASTRA_DB_APPLICATION_TOKEN environment variable, which is equal to the token that was generated in this step..Fill in any name you like for the fifth and final environment variable ASTRA_DB_COLLECTION. Here is an example of how you can retrieve all rows from the table: rows = session.execute("SELECT * FROM my_table") for row in rows: print(row.id, row.name, row.age) 6. The documentation can be found online here. File metadata Hashes for cassandra_driver-3.29.2-cp39-cp39-macosx_11_0_arm64.whl Algorithm Hash digest SHA256 b86427fab4d5a96e91ad82bb9338d4101ae4d3758ba96c356e0198da3de4d350 MD5 916bcfb9b881c8d2dd743652fc354b4c BLAKE2b-256 074e01d207c651184c8d3e938385114dde38a761629fe5659d98b98906030fce See more details on using hashes here. File metadata Hashes for cassandra_driver-3.29.2-cp311-cp311-manylinux_2_17_aarch64.manylinux2014_aarch64.whl Algorithm Hash digest SHA256 eb3a9f24fc84324d426a69dc35df66de550833072a4d9a4d63d72fda8fcaecb9 MD5 ca69db9714274bd28c63daefd2f1c636 BLAKE2b-256 dc9baf6cc4ba2cd56773e9f47ee93c2afca374c4a6ee62eaf6890ae65176cd16 See more details on using hashes here. Handling Errors When working with Cassandra, it is important to handle errors properly. File metadata Hashes for cassandra_driver-3.29.2-cp39-cp39-manylinux_2_17_aarch64.manylinux2014_aarch64.whl Algorithm Hash digest SHA256 c25b42e1a99f377a933d79ae93ea27601e337a5abb7bb843a0e951cf1b3836f7 MD5 6a949efe48c6857370bb059002b5d963 BLAKE2b-256 ee062b0142ebbebfe2ad020595e28a552e31429f450ddd1dba29e7f8272b533b See more details on using hashes here. There are no network bottlenecks. Please report any bugs and make any feature requests on the JIRA issue tracker. There are no single points of failure. Here are examples of how you can update and delete a row in the table: session.execute("UPDATE my_table SET age = 31 WHERE id = %s", [id]) session.execute("DELETE FROM my_table WHERE id = %s", [id]) 7. File metadata Hashes for cassandra_driver-3.29.2-cp312-cp312-macosx_10_9_x86_64.whl Algorithm Hash digest SHA256 a1e994a82b2e6ab022c5aec24e03ad49fca5f3d47e566a145de34eb0e768473a MD5 8c63c425f152fb393ce003769bb86630 BLAKE2b-256 4d8fdae609997c9f91bd4d7885c528a0aa9263963bbb2af5cb32483e1feb1d70 See more details on using hashes here. Details for the file cassandra_driver-3.29.2-cp311-cp311-win32.whl. In this example we are going to authenticate to Astra using a token(instead of client secret), generate a dummy JSON document and issue a PUT REST call to insert the JSON in an Astra collection.Before navigating through the code make sure you have astrapy and simplejson libraries installed. You can't perform that action at this time. Multiple Python libraries exist that allow solving problems like string manipulation, implementing machine learning algorithms, object-oriented programming and for data engineering purposes which we will be focusing more on in this tutorial.Installing PythonThere are two major versions of Python available, Python 2 and Python 3. This is usually located in your home directory, with the name of the bundle following a specific naming format of secure-connect-.zip, for example in our case it is named secure-connect-cassandra-pythondemo.zip. File metadata Hashes for cassandra_driver-3.29.2-cp312-cp312-manylinux_2_17_aarch64.manylinux2014_aarch64.whl Algorithm Hash digest SHA256 8067fad22e76e250c3846507d804f90b53e943bba442fa1b26583bcac692aaf1 MD5 8cd4d03c913a65a97fc9b9d844bfaa2a BLAKE2b-256 7b49fe8e3a317082cf6372da88648083ce0d6c12066c8e6db8f229c771771a71 See more details on using hashes here. Cassandra is a popular NoSQL database that is known for its scalability and high availability. On the right hand side of the page, click on the Download Bundle button and then on click on Secure Connect Bundle popup buttonThis will download the bundle in the default downloads directory configured from your browser. Cassandra consistently outperforms popular NoSQL alternatives in benchmarks and real applications, primarily because of fundamental architectural choices. Installation through pip is recommended: $ pip install cassandra-driver For more complete installation instructions, see the installation guide. $ pip install cassandra-driverThe above command installs cassandra-driver, a feature-rich and highly-customizable Python module for the Apache Cassandra database. Run the application. File metadata Hashes for cassandra_driver-3.29.2-cp38-cp38-win32.whl Algorithm Hash digest SHA256 d180183451bec81c15e0441fa37a63dc52c6489e860e832cadd854373b423141 MD5 d45767ebdc7bc31721c461f8dc57790c BLAKE2b-256 4eba5839eb252c053b4bb4723699f3317890a0a4d83776181278bbe5381cb439 See more details on using hashes here. Refer to documentation here. Later, you can import and reuse the module in other Python source code files. Details for the file cassandra_driver-3.29.2-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl. $ curl -X GET { "data": [{ "product_id": 2, "product_name": "WIRELESS MOUSE", "retail_price": 25.8 } , { "product_id": 3, "product_name": "SMART WATCH", "retail_price": 189.5 } , { "product_id": 1, "product_name": "4G ROUTER", "retail_price": 58.55 }] } Specify a product_id at the end of the URL to retrieve a specific product. Installing Python can be easily achieved irrespective of the OS that you are using.The best way to install Python on your computer is through the official Python page. Among the key advantages of the Cassandra database server is scalability. Make sure to configure the number of data to be generated(timeseries_to_generate and number_of_rows variables). Highly available asynchronous operations are optimized with features like Hinted Handoff and Read Repair. File metadata Hashes for cassandra_driver-3.29.2-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl Algorithm Hash digest SHA256 a8c496318e3c136cf12ab21e1598fee4b48ea1c71746ea8cc9d32e4dcd09cb93 MD5 ef57c727d97951bcb958c1c595cc0201 BLAKE2b-256 20d9dd49105eb54776dc6ac96931e9338ed6404be10f502f476f92319585b8b0 See more details on using hashes here. Simply put it is a programming language that is very readable, easy and free to use. You can check that by executing pip freeze. The fact that is rapidly growing can be explained by its set of rich features that are particularly beneficial for large amounts of data. The code samples you can see throughout the article are publicly available in this Github repository. Your best options for getting help with the driver are the mailing list and the DataStax Community. If you don't have them install them from the requirements.txt file in the root of the project with pip install -r requirements.txt.First in the code, we will get an Astra HTTP client. File metadata Hashes for cassandra_driver-3.29.2-cp310-cp310-macosx_11_0_arm64.whl Algorithm Hash digest SHA256 d70353b6d9d6e01e2b261efccfe90ce0aa6f416588e6e626ca2ed0aff6b540cf MD5 cc98227148f716a648eba14fdf7a7ef7 BLAKE2b-256 f46d366346a652f8523c26307846ec5c59e93fdfeee28e67078d68a07fcb2da2 See more details on using hashes here. astrapy is a handy Cassandra Python library that creates a schemaless, JSON document oriented API atop Datastax Astra's REST API. Navigate to the Astra dashboard page, click on the database name from the left hand side of the page:Click on the Cassandra Query Language(CQL) Console:Copy the intro/demo_readings.sql from the Github repo and paste it on the CQL Console and hit Enter:This completes the creation of the Astra table. As you can see in the above DDL script, this timeseries dataset consists of floating value metric(value) that is captured in continuous intervals(value_ts) for a fictional pair of hardware(device_id and timeseries_id), while the timestamp of when the record was captured is also included(publication_ts).Inserting data in Cassandra with PythonFollowing the creation of the Cassandra table, let's navigate to Python. File metadata Hashes for cassandra_driver-3.29.2-cp312-cp312-win_amd64.whl Algorithm Hash digest SHA256 6c74610f56a4c53863a5d44a2af9c6c3405da19d51966fabd85d7f927d5c6abc MD5 1909b4e36e9d20ddb1aded4d30d7b368 BLAKE2b-256 4d4989dcb4f4522b5c72fbd7216cae6e23bf26586728be13fb13685ea4ee1149 See more details on using hashes here. Creating a Keyspace and Table Before you can start storing data in Cassandra, you need to create a keyspace and a table. $ nano cassandra_gateway.py Add the following contents to the file. We will guide you through setting up Python as well as DataStax Astra, a managed Cassandra-as-a-Service application hosted on any cloud for free. File metadata Hashes for cassandra_driver-3.29.2-cp39-cp39-win32.whl Algorithm Hash digest SHA256 e967c1341a651f03bdc466f3835d72d3c0a0648b562035e6d780fa0b796c02f6 MD5 3c754fe4655b968ffe6790c6a901b5e2 BLAKE2b-256 fb30b07d879f44524b85e2887f4fe7868f495f72f93bdfff017197f0cc695d2f See more details on using hashes here. For example this is the page for numpy, and this is the page for cassandra-driver.This completes the installation of the dependencies of our Python project.What is Cassandra?Cassandra is the leading open-source NoSQL distributed database management system(DBMS). The former is no longer receiving updates nor supported, while the latter is the latest version and the one we will be using. We have also used the astrapy Cassandra Python library to interact with the Astra Document API to insert and retrieve JSON data.Learn More:AstraPyPython Driver for AstraThe code for this Cassandra Python tutorial can be found here: Project description Project details Release history Download files A modern, feature-rich and highly-tunable Python client library for Apache Cassandra (2.1+) and DataStax Enterprise (4.7+) using exclusively Cassandra's binary protocol and Cassandra Query Language v3. The module works as a gateway to the Apache Cassandra database server. In this guide, we will walk you through the process of using Cassandra with Python, a powerful programming language that is commonly used for web development. Details for the file cassandra_driver-3.29.2-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl. The dict_factory function returns data from the products table in a dictionary format that lists the column names. else ... Failed nodes can be replaced with no downtime. PrerequisitesBefore you start: Set Up a Sample Cassandra DatabaseIn this section, set up the Cassandra database, that's used by the sample application with a single products table to store product information as described in the steps below. File metadata Hashes for cassandra_driver-3.29.2-cp39-cp39-win_amd64.whl Algorithm Hash digest SHA256 c5a9aab2367e8aad48ae853847a5a8985749ac5f102676de2c119b33fef13b42 MD5 e4b4de4af8de20541382d2628c7c32a7 BLAKE2b-256 be52def64fd66c7e75ae71c9ff4f16750e0a46221d09dc93823f1dcfb7fc9c23 See more details on using hashes here. $ cd project Install the pip Python package manager. File metadata Hashes for cassandra_driver-3.29.2-cp312-cp312-macosx_11_0_arm64.whl Algorithm Hash digest SHA256 2039201ae5d9b7c7ce0930af7138d2637ca16a4c7aaae2fbdd4355fbaf3003c5 MD5 777653473ee113a3fbfe42a6252827d3 BLAKE2b-256 a0a8eee54de5b4dacf23a619b6e4fa9baa1e0e989ee5afa55ac86994640c3d4a See more details on using hashes here. No Uploaded via: twine/5.1.1 CPython/3.8.16 Hashes for cassandra-driver-3.29.2.tar.gz Algorithm Hash digest SHA256 c4310a7d0457f51a63fb019d8ef501588c491141362b53097fbc62fa06559b7c MD5 db435162f85cd8a72f8cb2293feac707 BLAKE2b-256 b26fd25121afaa2ea0741d05d2e9921a7ca9b4ce71634b16a8aaee21bd7af818 See more details on using hashes here. In my case this variable is equal to demo_book.Once you have exported the five environment variables according to the OS you are using, you are ready to start execution of the Python script. Cassandra streams data between nodes during scaling operations such as adding a new node or datacenter during peak traffic times. We are also introducing a new Python module called datetime in which we use for creating the value_ts and t_pub_ts variables.Following the initialisation of the above variables, we are preparing the insert statement to Astra with the insert_query variable. Details for the file cassandra_driver-3.29.2-cp312-cp312-macosx_10_9_x86_64.whl. We will not be covering best practices for sourcing secrets securely in this article.As we are generating fictional data, we are making use of the numpy and random Python libraries to help create a list of ids based on an arbitrary range and then randomly pick one id:We are also surrounding our generation script with two loops and we run as many times as we configure based on two static variables. cqlsh:online_shop> SELECT product_id, product_name, retail_price FROM products;Output: product_id | product_name | retail_price ------------+----------------+------------- 2 | WIRELESS MOUSE | 25.8 3 | SMART WATCH | 189.5 1 | 4G ROUTER | 58.55 (3 rows) Exit the database server. $ mkdir project Switch to the directory. The following lines enable JSON formatting and Cassandra database functions. It is also easy to get started with, but at the same time it can be used for a variety of different applications and different areas. File metadata Hashes for cassandra_driver-3.29.2-cp310-cp310-macosx_10_9_x86_64.whl Algorithm Hash digest SHA256 957208093ff2353230d0d83edf8c8e8582e4f2999d9a33292be6558fec943562 MD5 ed656ce1fc644f49f4fa6a9c7e8b1b8f BLAKE2b-256 54b4d5da6b2e82abc8b1d9f93bbc633441a51098bb183aaf2c0481162e17fffe See more details on using hashes here. The HttpHandler(http.server.SimpleHTTPRequestHandler) class responds to HTTP POST and GET requests to insert and retrieve data using the custom cassandra_gateway.py module. File metadata Download URL: cassandra-driver-3.29.2.tar.gz Upload date: Sep 10, 2024 Size: 293.8 kB Tags: Source Uploaded using Trusted Publishing? Click where it says "here":A new page will popup, select the role(select R/W User) and click on Generate Token:Once you do, you will get a window with all the details:Make sure to keep the other(Client Id, Client Secret) information in a place where you can reference them as we will use them later. The following lines run an HTTP server that listens for incoming connections on port 8080. cqlsh:online_shop> INSERT INTO products (product_id, product_name, retail_price) VALUES (1, '4G ROUTER', 58.55); INSERT INTO products (product_id, product_name, retail_price) VALUES (2, 'WIRELESS MOUSE', 25.80); INSERT INTO products (product_id, product_name, retail_price) VALUES (3, 'SMART WATCH', 189.50); View the products table data. Depending on the OS you are using, you can download Cassandra and its dependencies locally, configure and install them. For the Python application to connect to the Apache Cassandra database you created earlier, install the cassandra-driver module as described in the following steps. Create a new index.py file. The upcoming Python SDK for Astra will enable API access for REST, GraphQL and a schemaless JSON document API for a given Astra database instance, which will be reviewed in an upcoming article.Getting Started with PythonPython has gained plenty of popularity over the past decade and with good reasons. Details for the file cassandra_driver-3.29.2-cp38-cp38-macosx_10_9_x86_64.whl. File metadata Hashes for cassandra_driver-3.29.2-cp38-cp38-macosx_11_0_arm64.whl Algorithm Hash digest SHA256 c53700b0d1f8c1d777eaa9e9fb6d17839d9a83f27a61649e0cbaa15d9d3df34b MD5 f8cf5af2588f6b52ab48e1f88a72d6c6 BLAKE2b-256 8e01cab3ed5ea673ad75d36ae07ee4da7e2d1824327aad385cc0f8e604e5279a See more details on using hashes here. from cassandra.cluster import Cluster from cassandra.query import dict_factory class CassandraGateway: def db_session(self): clstr = Cluster() session = clstr.connect('online_shop') return session def execute(self, json_data): db_session = self.db_session() query_string = "insert into products (product_id, product_name, retail_price) values (?, ?, ?);" stmt = db_session.prepare(query_string) product_id = int(json_data["product_id"]) product_name = json_data["product_name"] retail_price = json_data["retail_price"] prepared_query = stmt.bind([product_id, product_name, retail_price]) db_session.execute(prepared_query) return self.query(product_id) def query(self, product_id = 0): db_session = self.db_session() db_session.row_factory = dict_factory if product_id == 0: query_string = "select product_id, product_name, retail_price from products;" stmt = db_session.prepare(query_string) prepared_query = stmt.bind([]) else: query_string = "select product_id, product_name, retail_price from products where product_id = ?;" stmt = db_session.prepare(query_string) prepared_query = stmt.bind([int(product_id)]) rows = db_session.execute(prepared_query) return list(rows)Save and close the file. A couple of links for getting up to speed: Installation Getting started guide API docs Performance tips cqlengine (originally developed by Blake Eggleston and Jon Haddad, with contributions from the community) is now maintained as an integral part of this package. Create a new project directory. In a new terminal session, establish another SSH connection to the server. Details for the file cassandra_driver-3.29.2-cp38-cp38-win32.whl. Apache Cassandra is a fault-tolerant high-availability NoSQL database. Except from pip, other popular Python package managers include virtualenv and conda, but for the purposes of this Cassandra Python tutorial we are going to be using pip.Each Python project that uses pip, will usually have a file called requirements.txt in the root directory of the repository, in the same way we have our requirements.txt in our Github project. Using a text editor such as Nano, create a new cassandra_gateway.py file. The built-in package manager for Python is called pip. Next StepsTo implement more Python database modules, visit the following resources. The database server uses a distributed system model to handle large amounts of data across different nodes, and implements a modern peer-to-peer architecture. from cassandra.cluster import Cluster ... We will reference this later in our code. File metadata Hashes for cassandra_driver-3.29.2-cp310-cp310-manylinux_2_17_aarch64.manylinux2014_aarch64.whl Algorithm Hash digest SHA256 06ad489e4df2cc7f41d3aca8bd8ddeb8071c4fb98240ed07f1dcd9b5180fd879 MD5 17ee642c181d878241a5922d48d89c92 BLAKE2b-256 cc60f8de88175937481be98da88eb88b4fd704093e284e5907775293c496df32 See more details on using hashes here. A modern, feature-rich and highly-tunable Python client library for Apache Cassandra (2.1+) and DataStax Enterprise (4.7+) using exclusively Cassandra's binary protocol and Cassandra … Learn how to use the Cassandra driver for data persistence in Python. Depending on your application needs, you can scale your database up by adding new nodes or down by deleting nodes. Details for the file cassandra_driver-3.29.2-cp311-cp311-macosx_11_0_arm64.whl. Querying Data Once you have inserted data into your table, you can query it using CQL (Cassandra Query Language). Details for the file cassandra_driver-3.29.2-cp39-cp39-win_amd64.whl. File metadata Hashes for cassandra_driver-3.29.2-cp38-cp38-macosx_10_9_x86_64.whl Algorithm Hash digest SHA256 c86b0a796ff67d66de7df5f85243832a4dc853217f6a3eade84694f6f4fae151 MD5 454a53406df10bc014f0c9e62f38fdb5 BLAKE2b-256 ea5708de2bac1fc8b7444e4225d323b65502f9a6eafa9502efec8ef637497df6 See more details on using hashes here. Updating and Deleting Data You can also update and delete data in Cassandra using CQL. Details for the file cassandra_driver-3.29.2-cp38-cp38-win_amd64.whl. We have shown how to navigate the Astra website to create new Cassandra tables, execute queries through the CQL Console, how to generate data in Python using multiple Python libraries such as numpy and datetime and how to configure the connection to Astra with Python cassandra-driver, and insert data with prepared statements. First, make sure to git clone the project in your local filesystem:git clone git@github.com:andyadamides/python-cassandra-intro.gitNote: If you don't have git installed, follow this Github guide to do so.The program consists of one Python script called main.py. $ ssh root@SERVER-IP Run the following HTTP GET request to list products from the database. Details for the file cassandra_driver-3.29.2-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl. See the License for the specific language governing permissions and limitations under the License. httpd = socketserver.TCPServer(('', 8080), HttpHandler) print("HTTP server started at port 8080...") try: httpd.serve_forever() ... File metadata Hashes for cassandra_driver-3.29.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl Algorithm Hash digest SHA256 e7f1dfa33c3d93350057d6dc163bb92748b6e6a164c408c75cf2c59be0a203b7 MD5 664e3259f49e3d2d7c61bf11b84286ba BLAKE2b-256 3b3a354db5ac8349ba5dd9827f43c24362213873 68f48db50b030ded8cdf91ea See more details on using hashes here. ConclusionIn this guide, you implemented the Apache Cassandra Python module to perform basic database operations on a custom keyspace. For these variables we are creating two more numpy arbitrary lists in the same way we did with timeseries ids previously. File metadata Hashes for cassandra_driver-3.29.2-cp311-cp311-win32.whl Algorithm Hash digest SHA256 7104e5043e9cc98136d7fafe2418cbc448dacb4e1866fe38ff5be76f227437ef MD5 cb9cc3a6ed15f8575fe86a3fa264e024 BLAKE2b-256 173f480af48ce578970b97878990ac3a44d07e185ddb04057660f54f393fea05 See more details on using hashes here. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. Kubernetes users can also use Docker images, but all of this process can be tiresome, especially for first-time users.The best way to get started with Cassandra, is through a managed Cassandra database which is available through the web. Test the ApplicationWhen all Python source code files are created, run and test your application's logic as described in the following steps. ... File metadata Hashes for cassandra_driver-3.29.2-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl Algorithm Hash digest SHA256 ee0ebe8eb4fb007d8001ffcd1c3828b74defeb01075d8a1f1116ae9c60f75541 MD5 2f4a285fb91f70626995d5f64a19ffb1 BLAKE2b-256 fb01703dd0bdfe694fa320863e70472c0adda25fbccb2bcb92076e9773ad96cd See more details on using hashes here. You may obtain a copy of the License at Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. Then, execute:python main.pyBased on the configurations you put together you will get an output similar to the following:Processing:130483SuccessSuccessSuccessSuccessSuccessSuccessSuccessSuccessSuccessSuccessProcessing:176990SuccessSuccessSuccessSuccessSuccessSuccessSuccessSuccessSuccessSuccessThe above indicates the execution of the Python program was successful. File metadata Hashes for cassandra_driver-3.29.2-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl Algorithm Hash digest SHA256 9e36437288d6cd6f6c74b8ee5997692126e24adc2da3d031dc11c7dfea8bc220 MD5 b06adfc159b2179fedc96390a4a2cbfd BLAKE2b-256 bd6b230a74e2064701f1409ab68b00d79f613cb9b5412e7b8d6b3ce88711841b5 See more details on using hashes here. Details for the file cassandra_driver-3.29.2-cp312-cp312-win_amd64.whl. $ curl -X POST -H 'Content-Type: application/json' -d '{"product_id": 4, "product_name": "TRENCH COAT", "retail_price": 456.28}'Output: { "data": [{ "product_id": 4, "product_name": "TRENCH COAT", "retail_price": 456.28 }] }When all commands are successful, Your application is working correctly as expected. Details for the file cassandra_driver-3.29.2-cp310-cp310-win32.whl. Create a Database Connection ModuleTo promote code reusability in your Python application, develop a central module that connects to the Apache Cassandra database to execute queries. File metadata Hashes for cassandra_driver-3.29.2-cp310-cp310-win_amd64.whl Algorithm Hash digest SHA256 c4a005bc0b4fd8b5716ad931e1cc788dbd45967b0bcbdc3dfde33c7f9fde40d4 MD5 a22ecf409ab7fd5e8bfdb75f6977064a BLAKE2b-256 18fa9c73f0d416167097db871dd46e09a327a138b264774e3dbed5159a8ebdd2 See more details on using hashes here. You can install it using pip: pip install cassandra-driver Once the driver is installed, you can connect to your Cassandra cluster using the following code: from cassandra.cluster import Cluster cluster = Cluster(['localhost']) session = cluster.connect('your_keyspace') 3. End To End LLM Langchain Project using Pinecone Vector … Dec 4, 2023 ... Build a PDF Document Question Answering LLM System With Langchain,Cassandra,Astra DB,Vector Database … Vector Database Tutorial FOR Beginners … 2. See CONTRIBUTING.md. In this section, create a new index.py file that reuses the custom cassandra_gateway module you created in the previous step as described in the steps below. Populate the products table with sample data. cqlsh> CREATE KEYSPACE online_shop WITH REPLICATION = { 'class': 'SimpleStrategy', 'replication_factor' : 1 };In Cassandra, a keyspace is a data container similar to a database in traditional relation database management systems. You created a test database using the Cassandra CLI (cqlsh), set up a custom Python database gateway module, and reused it in a new source code file to execute queries on the Cassandra database. Together, they are found in many applications across various industries as well as in academia.This Cassandra Python tutorial is intended for beginners in Python and Cassandra. Connecting to Cassandra with Python Next, you will need to install the cassandra-driver package, which is the official Python driver for Cassandra. $ python3 index.pyYour output should look like the one below: HTTP server started at port 8080... File metadata Hashes for cassandra_driver-3.29.2-cp312-cp312-win32.whl Algorithm Hash digest SHA256 83dc9399cdabe482fd3095ca54ec227212d8c491b563a7276f6c100e30ee856c MD5 35503d33ff778d03a1b1d8ac2364e7f5 BLAKE2b-256 d3b7723d67d84016bf913b59826f43dd9288cf8593a514c0f9650d703748a369 See more details on using hashes here. Details for the file cassandra_driver-3.29.2-cp310-cp310-win_amd64.whl. Details for the file cassandra_driver-3.29.2-cp39-cp39-macosx_11_0_arm64.whl. retur

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