



Not
Only
~~NoSQL~~
Relational

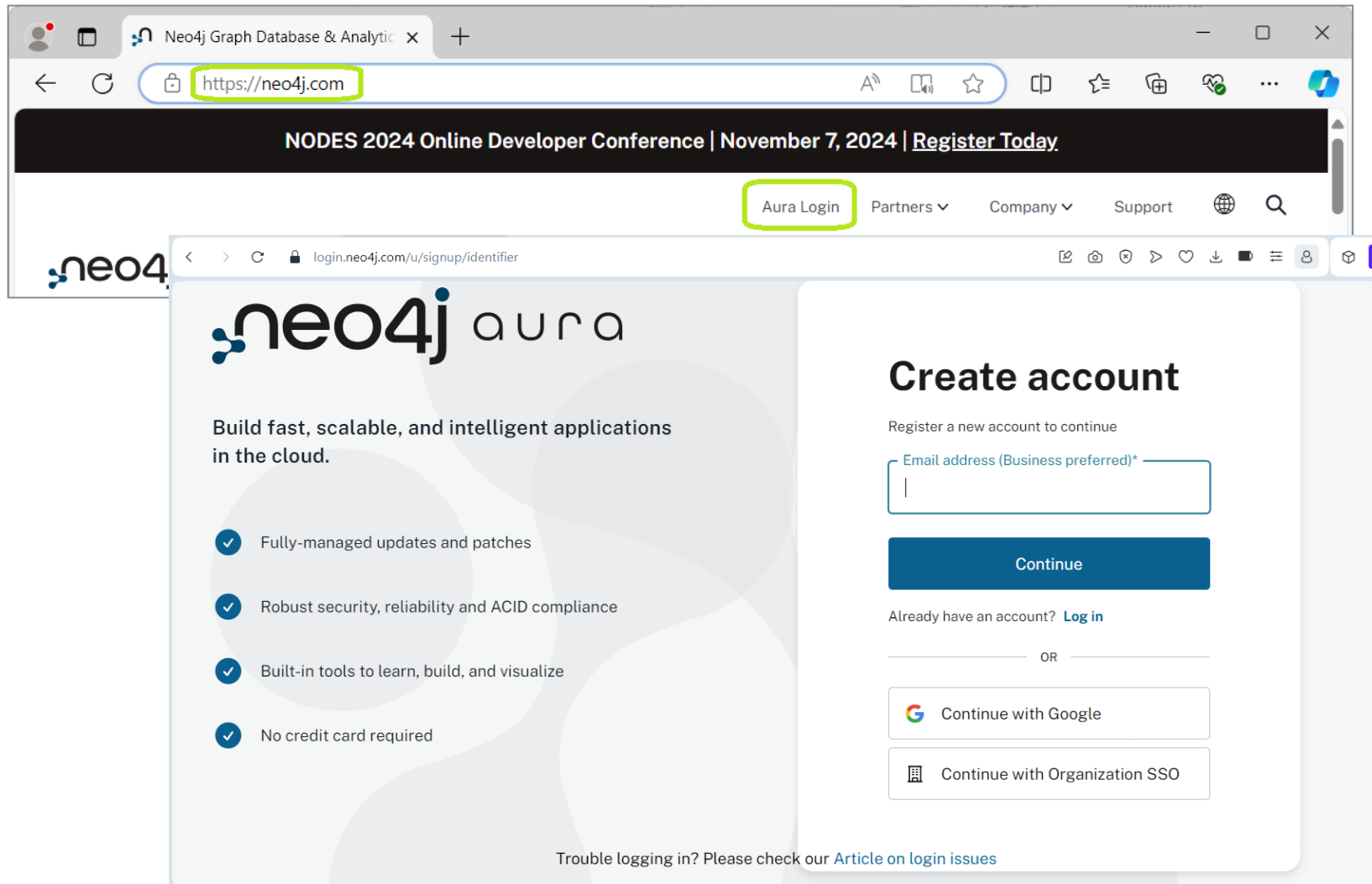
Graph Database



Dr. SOHAIL IMRAN

aura

<https://neo4j.com/>



The screenshot shows a web browser window with the URL <https://neo4j.com/> in the address bar. The page features a navigation bar with links for [Aura Login](#), [Partners](#), [Company](#), and [Support](#). A banner at the top promotes the **NODES 2024 Online Developer Conference** on November 7, 2024, with a [Register Today](#) link. The main content area is divided into two sections. On the left, the **neo4j aura** logo is displayed above the text "Build fast, scalable, and intelligent applications in the cloud." Below this, four bullet points highlight key features: "Fully-managed updates and patches", "Robust security, reliability and ACID compliance", "Built-in tools to learn, build, and visualize", and "No credit card required". On the right, the **Create account** section prompts users to "Register a new account to continue". It includes a text input field for "Email address (Business preferred)*", a **Continue** button, and a link for "Already have an account? [Log in](#)". Below this, there are two options for authentication: "Continue with Google" and "Continue with Organization SSO". At the bottom of the page, a link for "Trouble logging in? Please check our [Article on login issues](#)" is provided.



NoSQL




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Date last updated: August 13, 2024

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free



AuraDB Free

\$0 

Start with a free offer to learn and explore with graph data

Auto-deleted after 30 days of inactivity

- ✓ No credit card required to start
- ✓ Access to all graph tools

Select

AuraDB Professional

\$65 /GB/month

Minimum 1GB instance

Build high-performance applications on a production-ready cloud database

- ✓ Up to 64GB memory per database instance
- ✓ Scalable on demand
- ✓ Daily backups, 30-day retention
- ✓ Available on Azure, AWS, and Google Cloud
- ✓ Advanced instance-level metrics

Select

AuraDB Business Critical

\$146 /GB/month

Minimum 2GB instance

Scale mission-critical apps with a highly available database, granular enterprise controls, and 24x7 support

[Have credits? Contact us ↗](#)

- ✓ Up to 512GB memory per database instance
- ✓ Highly available 3-zone cluster with 99.95% uptime SLA
- ✓ Daily backups with 30-day retention and hourly point-in-time restore
- ✓ Role-based access control with granular security
- ✓ Pay-as-you-go and prepaid consumption billing
- ✓ 24x7 support ↗

Select



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neo4j

credentials



Credentials for Instance01

Username: neo4j


Generated password

Note that the password will not be available after this point.

Close

Download and continue

Recent download history

 Neo4j-5-5-
Created-2024-10-06.txt

neo4j

aura

New Organization / New tenant

Instances

New Instance

Instance01

Free

Creating Instance...
(This may take a few minutes)



NoSQL

instance



<https://console.neo4j.io/>

neo4j aura New Organization / New tenant ▾

Instances



New Instance

Instance01 Free

53ef62b5

● Running

Neo4j version 5
Nodes 0 / 200000 (0%)
Relationships 0 / 400000 (0%)
Region Singapore (asia-southeast1)
Connection URI neo4j+s://53ef62b5.databases.neo4j.io



Rename

Reset to blank

Upgrade to Professional

Clone To New >

Clone To Existing >





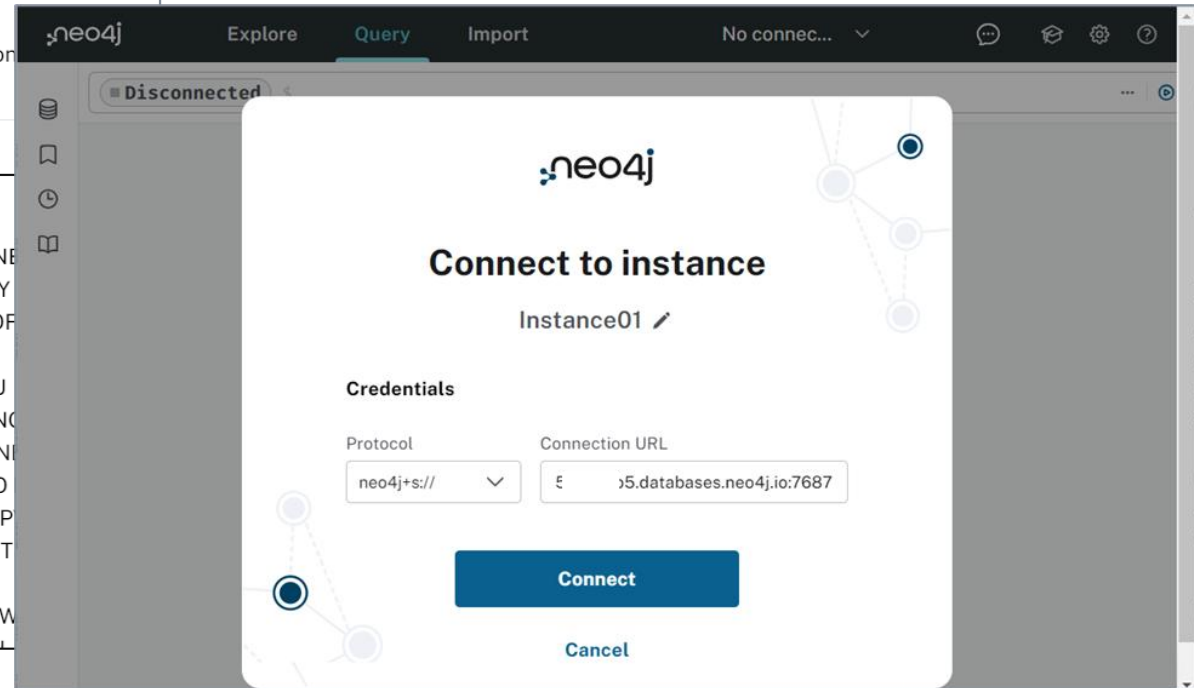
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Accept






neo4j+s://*****.databases.neo4j.io:7687








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Guide selection


Access all Neo4j Guides 

 [Explore](#) [Query](#) [Import](#) Instance01 / neo4j [Send feedback](#)   


   

Database information

Nodes (0)



Relationships (0)



Property keys

[data](#) [id](#) [name](#) [nodes](#) [relationships](#) [style](#)

[visualisation](#)

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Neo4j Guides



Curated sets of guides to adapt to your needs and learning style.

Beginner

Developer

Data Exploration

More Datasets

Get started with Neo4j.

~7 min



Recommended

Learn the basics

You'll learn:

- graph concepts;
- graph property model;
- the basics of import;
- the basics of data visualization;
- the basics of graph query.

~15 min

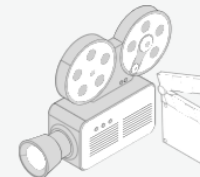


Query fundamentals

You'll learn to:

- write basic queries;
- view graph and tabular results;
- perform queries to answer questions;
- perform advanced queries.

~10 min



Movie graph

You'll learn to:

- create nodes and relationships;
- find nodes and patterns;
- understand and use the shortest path algorithm;
- write a basic recommendation query.

[Continue with blank database](#)



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Movie graph

Step 1/8 Movies graph

This guide uses pop-cultural connections to show you how to use Cypher to create and query a graph. You will explore connections between actors, directors, and movies, and also solve the Bacon-path.

Note that this guide assumes that you have an empty database as you will modify it all the way. You will learn how to delete the data you create towards the end of the guide as well.

What you will learn

This guide takes around 10 minutes and at the end of it you will be able to:

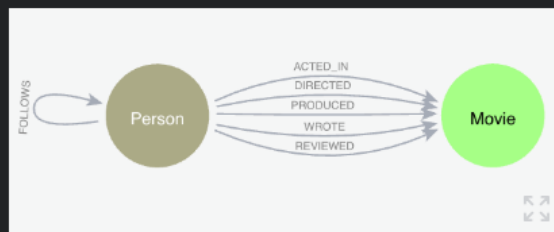
- Create nodes and relationships that connect them.
- Find individual nodes by using conditional matches.
- Find patterns in the graph.
- Understand and use the shortest path algorithm.
- Write a basic recommendation query.

Movie graph

Step 2/8 Create the data

The Cypher `CREATE` clause is used to create data in your graph. If you are not familiar with Cypher syntax, you can try the [Query fundamentals guide](#) or see the [Cypher Manual](#).

You are going to create a dataset with `Person` and `Movie` nodes and different types of relationships to connect them.



```

1 CREATE CONSTRAINT movie_
2 CREATE CONSTRAINT person_name
3
4 MERGE (TheMatrix:Movie {title:
5
  
```

Previous

Next

Database information
Nodes (15)
Relationships (26)
Property keys

neo4j
CREATE CONSTRAINT person_name IF NOT EXISTS FOR (p:Person)
MERGE (TheMatrix:Movie {title:'The Matrix'}) ON CREATE SET
MERGE (TheMatrixReloaded:Movie {title:'The Matrix Reloaded'}) ON CREATE SET
MERGE (TheMatrixRevolutions:Movie {title:'The Matrix Revolutions'}) ON CREATE SET

Database information
Nodes (171)
Relationships (253)
Property keys

neo4j
CREATE CONSTRAINT movie_
CREATE CONSTRAINT person_name
MERGE (TheMatrix:Movie {title:'The Matrix'}) ON CREATE SET
MERGE (TheMatrixReloaded:Movie {title:'The Matrix Reloaded'}) ON CREATE SET
MERGE (TheMatrixRevolutions:Movie {title:'The Matrix Revolutions'}) ON CREATE SET



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constraints



Movie graph

Step 3/8

Indexes and constraints

To aid query performance, you can add indexes to your data. The dataset you create in this guide is very small, but it is good practice to use indexes as they can greatly improve query performance when the datasets are larger.

Run the following to see the existing indexes in the database:

\$ SHOW INDEXES

As you can see, there are already some indexes present and this is a result of the two first lines in the MERGE clause in the previous step:

1 CREATE CONSTRAINT movie_title
2 CREATE CONSTRAINT person_name

Previous

Next

neo4j

\$ CREATE CONSTRAINT movie_title IF NOT EXISTS FOR (m:Movie) RI

CREATE CONSTRAINT movie_title IF NOT EXISTS FOR (m:Movie) RI

CREATE CONSTRAINT person_name IF NOT EXISTS FOR (p:Person) I

neo4j

\$ SHOW INDEXES

Table

RAW

id

name

state

populationPercent

type

1 0	"index_343aff4e"	"ONLINE"	100.0	"LOCAL"
2 1	"index_f7700477"	"ONLINE"	100.0	"LOCAL"
3 2	"movie_title"	"ONLINE"	100.0	"RANGE"



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