Profesional Social Media Database

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Introduction

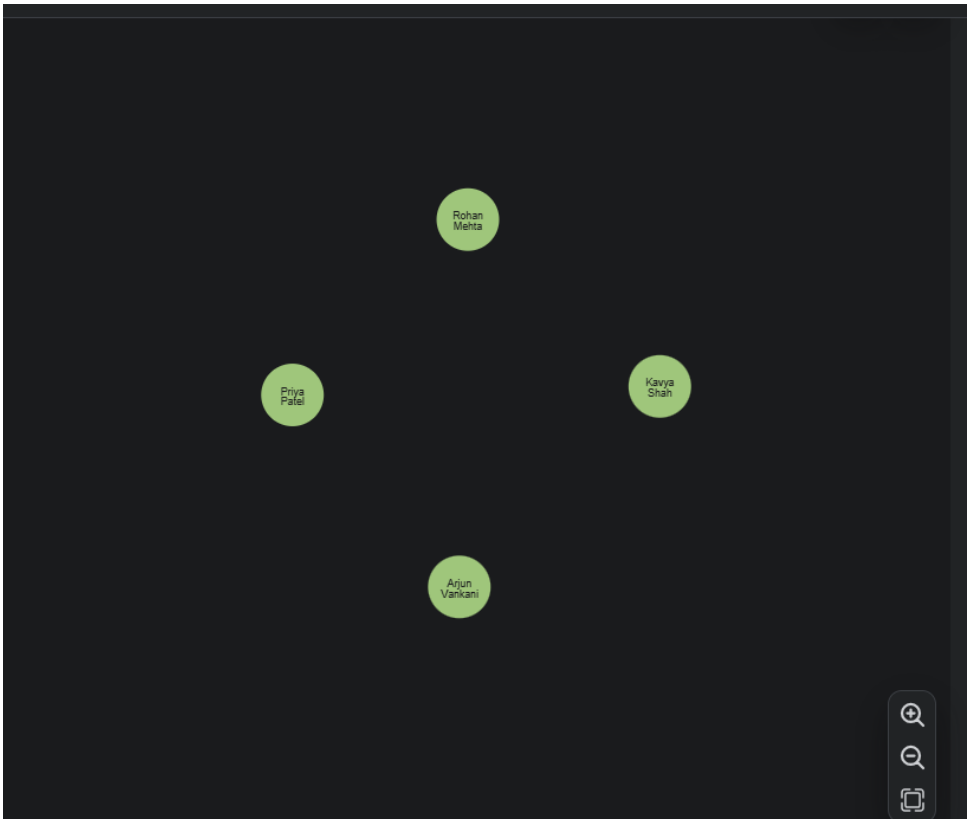
This project is something I built using Neo4j to create a simple graph database that works like LinkedIn. I track users, their skills, jobs, and companies, and it helps me find connections, suggest new contacts, and match users to jobs.

1:Modeling Nodes Creation

Create nodes for Users,Companies and skills with given properties

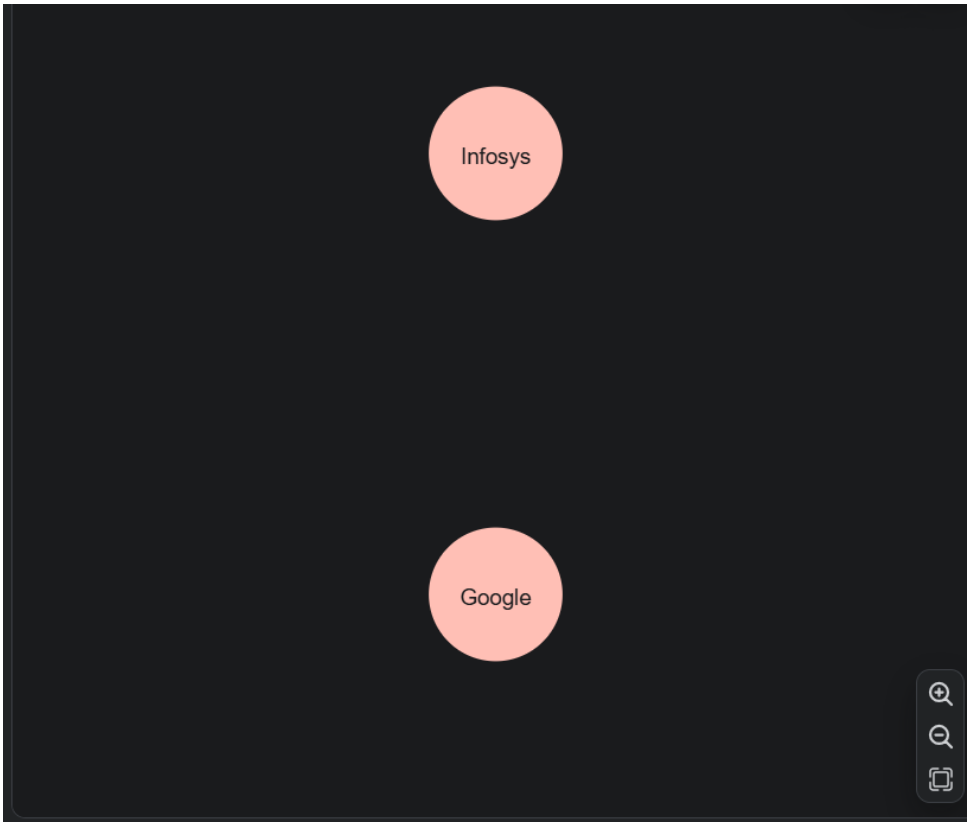
```
CREATE
(:User {name:'Arjun Vankani', title:'Data Scientist', location:'
   Ahmedabad'}),
(:User {name:'Kavya Shah', title:'Software Engineer', location:'
   Mumbai'}),
(:User {name:'Rohan Mehta', title:'ML Engineer', location:'Delhi'
   }),
(:User {name:'Priya Patel', title:'Business Analyst', location:'
   Bangalore'});
```

The above code is used to create node:Users.



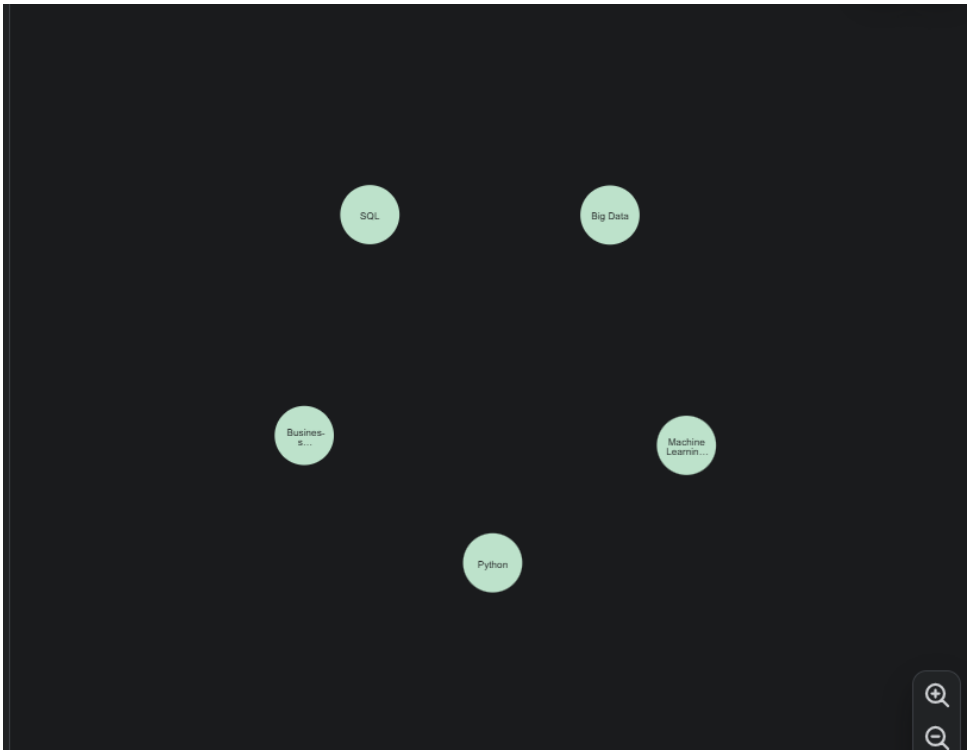

```
CREATE
(:Company {name:'Google', industry:'Technology'}),
(:Company {name:'Infosys', industry:'IT Services'});
```

The above code is used to create node:Companies.




```
CREATE
(:Skill {name:'Python'}),
(:Skill {name:'Machine Learning'}),
(:Skill {name:'Big Data'}),
(:Skill {name:'SQL'}),
(:Skill {name:'Business Analysis'});
```

The above code is used to create node:Skills.

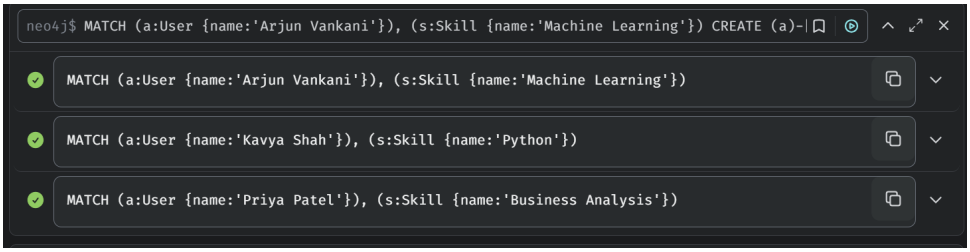


2: Creating Relationships

Link nodes according to the relationships described.

```
MATCH (a:User {name:'Arjun Vankani'}), (s:Skill {name:'Machine
   Learning'})
CREATE (a)-[:HAS_SKILL]->(s);
MATCH (a:User {name:'Kavya Shah'}), (s:Skill {name:'Python'})
CREATE (a)-[:HAS_SKILL]->(s);
MATCH (a:User {name:'Priya Patel'}), (s:Skill {name:'Business
   Analysis'})
CREATE (a)-[:HAS_SKILL]->(s);
```

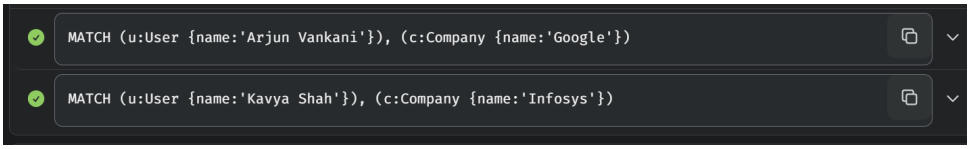
The above code is used to connect users with skills.




```
MATCH (u:User {name:'Arjun Vankani'}), (c:Company {name:'Google'
   })
CREATE (u)-[:WORKS_AT]->(c);
```

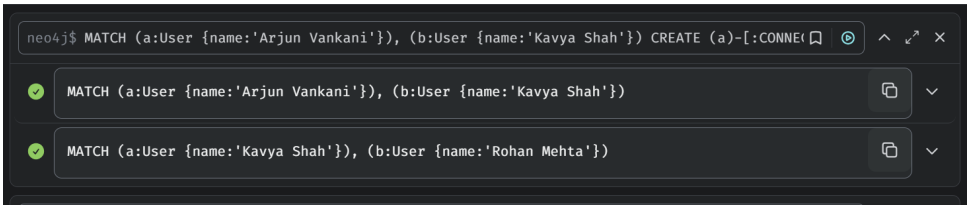
```
MATCH (u:User {name:'Kavya Shah'}), (c:Company {name:'Infosys'})
CREATE (u)-[:WORKS_AT]->(c);
```

The above code is used to connect users with companies.




```
MATCH (a:User {name:'Arjun Vankani'}), (b:User {name:'Kavya Shah'
    })
CREATE (a)-[:CONNECTED_TO]->(b);
MATCH (a:User {name:'Kavya Shah'}), (b:User {name:'Rohan Mehta'})
CREATE (a)-[:CONNECTED_TO]->(b);
```

The above code is used to create connections between users.

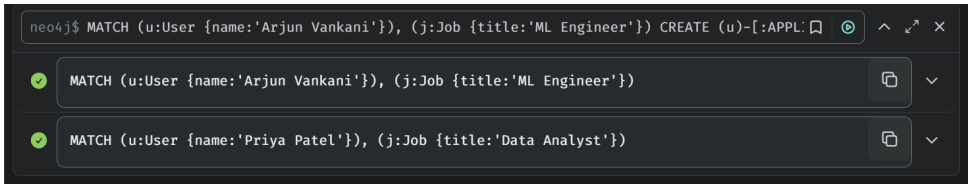



```
MATCH (c:Company {name:'Google'})
CREATE (c)-[:POSTED]->(:Job {title:'ML Engineer', location:'
    Bangalore'});
MATCH (c:Company {name:'Infosys'})
CREATE (c)-[:POSTED]->(:Job {title:'Data Analyst', location:'Pune
    '});
```

The above code is used to users with with their job postions.


```
MATCH (u:User {name:'Arjun Vankani'}), (j:Job {title:'ML Engineer
    '})
CREATE (u)-[:APPLIED_TO]->(j);
MATCH (u:User {name:'Priya Patel'}), (j:Job {title:'Data Analyst'
    })
CREATE (u)-[:APPLIED_TO]->(j);
```

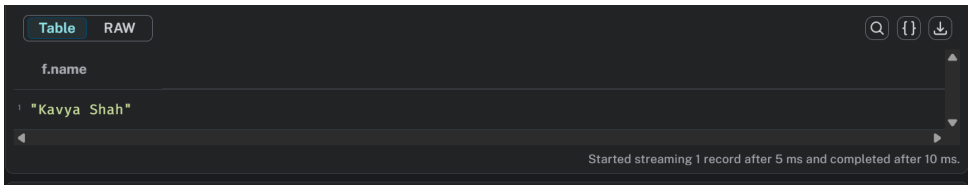
The above code is used to connect users with the job positions they applied for.



Task 3: Query Examples

3.1.Find all connections of Arjun

```
MATCH (u:User {name:'Arjun Vankani'})-[:CONNECTED_TO]->(f:User)
RETURN f.name;
```

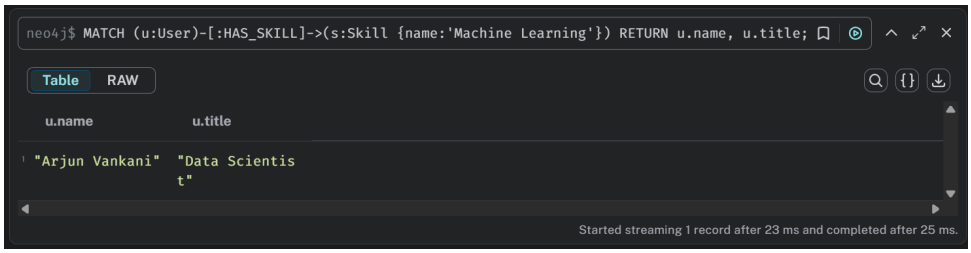


3.2.Suggest new connections (friends-of-friends for Arjun)

```
MATCH (u:User {name:'Arjun Vankani'})-[:CONNECTED_TO]->(f)-[:
    CONNECTED_TO]->(fof)
WHERE fof <> u AND NOT (u)-[:CONNECTED_TO]->(fof)
RETURN DISTINCT fof.name AS SuggestedConnection;
```

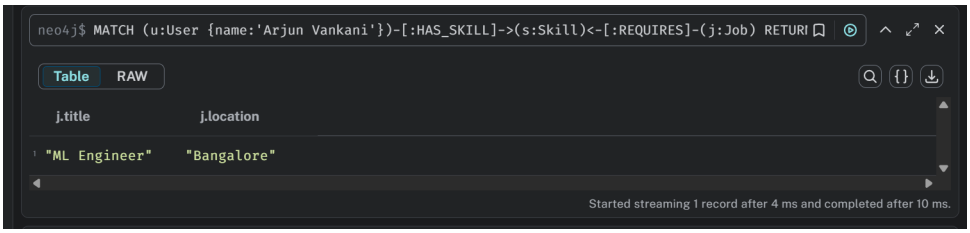
3.3.Find all users with Machine Learning skill

```
MATCH (u:User)-[:HAS_SKILL]->(s:Skill {name:'Machine Learning'})
RETURN u.name, u.title;
```



3.4.Find jobs that match Arjun's skills

```
MATCH (u:User {name:'Arjun Vankani'})-[:HAS_SKILL]->(s:Skill)<-[:
   REQUIRES]-(j:Job)
RETURN j.title, j.location;
```



This output is found after using 'REQUIRES' to get a relationship between job and skills

3.5List all employees of Google

```
MATCH (u:User)-[:WORKS_AT]->(c:Company {name:'Google'})
RETURN u.name, u.title;
```

Conclusion

This project taught me how to build a LinkedIn-like network using Neo4j. I created users, skills, jobs, and connections to show how they relate. Writing it up in LaTeX helped me explain it clearly. It was a great way to learn both graph databases and documentation.