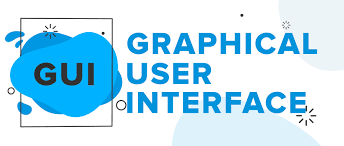
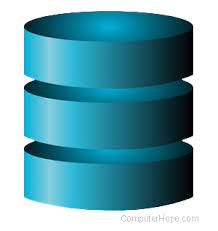
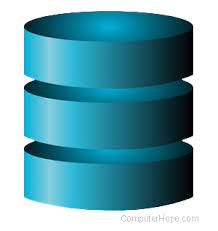
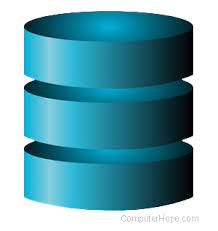
Sync Stars

Ntshoekhe ddbms

|  |  |  |
| --- | --- | --- |
| Pheello Maime | 202000484 | B. Eng Computer Systems & Networks |
| `Mashai Pelei | 202004163 | B. Sc Computer Science |
| Bokang Leqele | 202002775 | B. Sc. Physics and Computer Science |
| Tebello Ramothoto | 202002687 | B. Eng Computer Systems & Networks |
| Seabata Moshate | 202000742 | B. Sc. Computer Science & Statistics |
| Tlotlisang Mahloko | 202001935 | B. Sc Computer Science |

# Ntshoekhe System Architecture

 Application Interface



Node 1 Node 2 Node 3



Local Disk

# Introduction

The figure above shows how we designed our distributed database when implementing Ntshoekhe. Because this DBMS is to be used in the digital health sector in our country, the nodes in this case would be different districts, for now we only focused on three (3) districts. Database for each district is represented as a node and all these nodes are accessed and communicate through the same graphical user interface. The database in different districts is the same, that is to say similar tables have the same attributes but not the same tuples.

# System Architecture

The architecture implemented is a peer-to-peer architecture. The nodes communicate through the same graphical user interface. All nodes can be both a client and a server, every node can send requests and any node can attend to the request directed to it. The nodes store their data on a local server being our computer in this case but in different tables according to which node they were inserted through. Each node can store and manage its own database.

During query processing, when a query is made, it is routed directly to the nodes that are likely to have then relevant data based on metadata. Nodes receiving a query process it locally if they have a relevant data.

# Data Design Architecture

The class diagram below shows tables in each database and how they relate to each other. The functions and data type of attributes in the tables are also explained.

