Innovation Document: Adding GUI Functionality with Console Interaction to Python Application

1. Introduction

This document outlines the innovation added to the existing Python application, enhancing its functionality with a Graphical User Interface (GUI) using the kinter package. The innovation aims to improve user interaction and usability by providing a visual interface for selecting database operations while carrying out the interaction in the console.

2. Overview

The existing Python application facilitates interaction with databases through a command-line interface (CLI). With the addition of the GUI functionality using tkinter, users can select database operations visually while the interaction is carried out in the console, maintaining the application's core functionality and flexibility.

3. Usage

The GUI functionality is accessed by running the program `experimentalGUI.py`:

'''

   python experimentalGUI.py

'''

Upon launching the GUI, users are presented with a window containing options to select database operations.

4. Functionality

The GUI offers the following functionalities:

- **Operation Selection**: Users can select the number corresponding to the database operation they want to perform from the GUI.
- **Console Interaction**: After selecting an operation in the GUI, the interaction continues in the console. For example, if a user selects option 1 for querying, they are prompted in the console to input the SQL query.

- **Database Interaction**: The application interacts with different databases using the following libraries:
    - pymysql for MySQL databases
    - mysql.connector for MySQL databases
    - neo4j.GraphDatabase for Neo4j databases
- **Error Handling**: The GUI provides error messages in case of invalid selections or input, ensuring smooth interaction between the GUI and the console.

5. References

- Python tkinter Documentation: https://docs.python.org/3/library/tkinter.html
- NeuralNine - Let's Develop Brains : https://wwww.neuralnine.com/
- PyMySQL Documentation: https://github.com/PyMySQL/PyMySQL
- MySQL Connector Documentation: https://dev.mysql.com/doc/connector-python/en/
- Neo4j Python Driver Documentation: https://neo4j.com/docs/api/python-driver/current/

6. Conclusion

The addition of GUI functionality using tkinter with console interaction enhances the Python application, providing users with visual options for selecting database operations while maintaining the flexibility and power of the command-line interface. This innovation improves usability and user experience without compromising the core functionality of the application.