**Tax Calculator System Setup Guide**

**Project Folder Structure**:

10659027\_PiyadigamaMinaga\_10646591\_Perera\_CSI3344\_A3/

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├── db/

│ └── tax\_system\_dump.sql # MySQL database dump

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├── src/

│ ├── tax\_database.py # Main server code for database interactions

│ ├── server1.py # Secondary server code

│ ├── client.py # Client code for interacting with the server

│ └── other source files # Other supporting source code files

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└── Distributedsystems.pdf # Project documentation

**Prerequisites**

1. **MySQL** installed and running on your computer.
2. **Python 3.x** installed.
3. Required Python libraries. Install by running the following command in your terminal:

pip install mysql-connector-python Pyro5

**Step-by-Step Setup Instructions**

**Step 1: Import the Database**

1. Open MySQL and log in with your credentials. For example:

mysql -u root -p

Enter the MySQL password when prompted (replace root with your MySQL username if different).

1. Create the database tax\_system:

CREATE DATABASE tax\_system;

Then exit the MySQL prompt:

exit;

1. Import the provided SQL dump file:
   * Run the following command from the root directory where the unzipped folder is located:

mysql -u root -p tax\_system < "10659027\_PiyadigamaMinaga\_10646591\_Perera\_CSI3344\_A3/db/tax\_system\_dump.sql"

Enter your MySQL password when prompted.

**Step 2: Verify Database Import**

1. Open MySQL again:

mysql -u root -p

1. Switch to the tax\_system database and verify tables:

USE tax\_system;

SHOW TABLES;

You should see the tables users, tax\_history, and payroll\_records.

1. Exit MySQL:

exit;

**Step 3: Running the Servers and Client**

 Open a terminal and navigate to the src folder:

cd 10659027\_PiyadigamaMinaga\_10646591\_Perera\_CSI3344\_A3/src

 Start the Pyro Name Server:

python -m Pyro5.nameserver

1. You should see a message that the Pyro Name Server is running. Leave this terminal open, as the Name Server needs to run continuously to manage connections between the client and servers.
2. **Start the Database Server**:
   * Run the following command:

python tax\_database.py

* + You should see a message indicating the server is connected to the MySQL database.

1. **Start the Main Server (Server 1)**:
   * Open a new terminal, navigate to the src folder, and run:

python server1.py

* + The server should start and wait for client connections.

1. **Run the Client**:
   * Open another terminal, navigate to the src folder, and run:

python client1.py

* + This will launch the client interface, where you can interact with the system using available commands.

**Step 4: Testing the System**

1. **Login and Interact**:
   * Follow the client prompts to log in, view records, insert new records, or trigger any functions necessary for testing.
2. **Admin and User Functions**:
   * Use the admin menu to test features like adding, updating, and deleting users, as well as exporting data to CSV and viewing the database schema.

**Step 5: Shutting Down**

* After testing, stop each terminal by pressing Ctrl + C to terminate each server and client process.

**Troubleshooting**

1. **Database Connection Errors**:
   * Ensure MySQL is running and the credentials in tax\_database.py are correct.
2. **Module Import Errors**:
   * Ensure all required libraries are installed. Run:

pip install mysql-connector-python Pyro5