Question: Restaurant Ordering System (OOP-Based)

You are required to build a simple Restaurant Ordering System using Object-Oriented Programming (OOP) in Python. The system must support:

User Account Creation and Login

Viewing and Ordering from a Menu

Handling Multiple Tables Separately

Tracking Orders Per Table

🔧 Requirements

Implement the following classes and functionalities:

✅ 1. User class

Attributes: username, password

Methods:

register(username, password)

login(username, password)

✅ 2. Menu class

Attributes: items (a dictionary with item names and prices)

Methods:

display\_menu()

get\_price(item\_name)

✅ 3. Order class

Attributes: table\_number, items (a list of tuples: (item\_name, quantity))

Methods:

add\_item(item\_name, quantity)

calculate\_total(menu)

show\_order()

✅ 4. Restaurant class

Attributes: users (dict), menu (Menu), orders (dict with table\_number as key)

Methods:

create\_account(username, password)

login(username, password)

place\_order(table\_number, item\_name, quantity)

show\_table\_order(table\_number)

🧪 Sample Flow

User registers with username and password.

Logs in using credentials.

User selects a table number and places an order from the menu.

Orders are tracked per table.

User can view the current order and total price for a table.

📝 Example Input

restaurant.create\_account("john", "1234")

restaurant.login("john", "1234")

restaurant.menu.display\_menu()

restaurant.place\_order(1, "Pizza", 2)

restaurant.place\_order(1, "Pasta", 1)

restaurant.show\_table\_order(1)

✅ Output Example

User 'john' registered successfully.

Login successful!

--- MENU ---

Pizza: $10

Pasta: $8

Burger: $5

Order for Table 1:

- Pizza x2

- Pasta x1

Total: $28