Project 5:

Combining Shop Simulator + Battle System

Goal:

Create a comprehensive fantasy RPG that combines shopping, inventory management, and turn-based combat where:

- Players start in a shop to buy equipment and items
- Players then enter battles against increasingly difficult enemies
- Equipment affects combat stats and damage
- Players can use consumable items during battle
- After each battle, players return to the shop to upgrade gear and heal
- The game continues until the player is defeated or chooses to retire

Game Requirements:

Core Features:

1. **Character System**: Player has health, attack power, defense, and gold
2. **Shop System**: Buy weapons, armor, and healing potions
3. **Inventory System**: Manage equipped items and consumables
4. **Battle System**: Turn-based combat with equipment bonuses
5. **Progression System**: Face stronger enemies, earn more gold
6. **Game Loop**: Shop → Battle → Shop → Battle (until defeat/retirement)

Equipment Effects:

- **Weapons**: Increase attack damage
- **Armor**: Reduce incoming damage
- **Potions**: Restore health during battle

Instructions:

Create New Project Structure:

- **In your "week3" folder, create a new folder named "project5"**

- **Create a Python file named "fantasy_rpg.py"**

Import Modules and Set Up Variables:

```
import random

# Player stats
player_health = 100
max_health = 100
player_gold = 150
base_attack = 10
base_defense = 0

# Equipment
equipped_weapon = None
equipped_armor = None

# Inventory (for consumables)
inventory = []

# Enemy progression
enemy_level = 1
```

Create the Shop System:

```
# Shop inventory
shop = {
    "sword": {"price": 50, "type": "weapon", "bonus": 15},
    "axe": {"price": 80, "type": "weapon", "bonus": 25},
    "shield": {"price": 40, "type": "armor", "bonus": 5},
    "chainmail": {"price": 70, "type": "armor", "bonus": 10},
    "health_potion": {"price": 20, "type": "consumable", "effect": 30}
}
```

Define Core Functions:

- Shop Functions:

```python
def display_shop():
    """Display all items available in the shop"""
    print("\n=== FANTASY SHOP ===")
    print(f"Your Gold: {player_gold}")
    print("\nAvailable Items:")
    for item, details in shop.items():
        if details["type"] == "weapon":
            print(f"{item.title()}: {details['price']} gold (+{details['bonus']} attack)")
        elif details["type"] == "armor":
            print(f"{item.title()}: {details['price']} gold (+{details['bonus']} defense)")
        elif details["type"] == "consumable":
            print(f"{item.title()}: {details['price']} gold (heals {details['effect']} HP)")

def buy_item(item_name):
    """Handle purchasing items from the shop"""
    # Add your buying logic here
    # Check if item exists, player has enough gold
    # Handle equipment vs consumables differently
    pass
```

- Battle Functions:

```python
def display_player_stats():
    """Show player's current stats and equipment"""
    print(f"\n=== YOUR STATUS ===")
    print(f"Health: {player_health}/{max_health}")
    print(f"Attack: {player_attack}")
    print(f"Defense: {player_defense}")
    print(f"Weapon: {equipped_weapon or 'None'}")
    print(f"Armor: {equipped_armor or 'None'}")

def create_enemy():
    """Generate an enemy based on current level"""
    enemy_names = ["Goblin", "Orc", "Troll", "Dragon", "Dark Wizard"]
    enemy = {
        "name": enemy_names[min(enemy_level-1, len(enemy_names)-1)],
        "health": 50 + (enemy_level * 20),
        "attack": 8 + (enemy_level * 3)
    }
    return enemy

def player_attack_enemy(enemy):
    """Calculate and apply player's attack damage"""
    # Base damage + weapon bonus + random factor
    damage = player_attack + random.randint(5, 15)
    enemy["health"] -= damage
    print(f"You attack the {enemy['name']} for {damage} damage!")
    return damage
```

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```python
def enemy_attack_player(enemy):
    """Calculate and apply enemy's attack damage"""
    # Enemy damage reduced by player's defense
    damage = enemy["attack"] + random.randint(3, 10) - player_defense
    damage = max(1, damage)  # Minimum 1 damage
    global player_health
    player_health -= damage
    print(f"The {enemy['name']} attacks you for {damage} damage!")
    return damage

def use_potion():
    """Use a health potion from inventory"""
    # Check if player has potions, restore health
    pass

def battle_victory_rewards():
    """Give gold reward after winning battle"""
    reward = 30 + (enemy_level * 10)
    global player_gold, enemy_level
    player_gold += reward
    enemy_level += 1
    print(f"\nVictory! You earned {reward} gold!")
    print(f"Next enemy will be level {enemy_level}")
```

Create the Game Loop:

Build the Loop with a game_run Boolean:

- Set up a game_run boolean variable to control the game loop.
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```
# Main Game Loop
print("="*60)
print("    🏰 WELCOME TO FANTASY ADVENTURE RPG 🏰")
print("="*60)
print("🎮 Buy equipment, fight monsters, and see how far you can go!")
print("💡 Type 'help' for commands or 'shop' to start shopping")

game_running = True

while game_running:
    print(f"\n" + "="*50)
    print("           🏰 ADVENTURE CONTINUES")
    print("="*50)
    print("💭 What would you like to do?")
    print("   Commands: shop, battle, stats, inventory, heal, help, quit")

    action = input("\n> ").lower().strip()

    if action == "quit":
        print("\n👋 Thanks for playing Fantasy Adventure RPG!")
        print(f"🏆 Final Stats: Level {enemy_level-1} reached, {player_gold} gold earned")
        game_running = False
```

Run Your Game:

- Save your file and run it from the terminal. Remember to check if you're in the right folder, you should be in your project5 folder.
- Run your game by typing "python fantasy_rpg.py".
- Test your game.

Bonus:

- **Character Classes**: Let players choose warrior, mage, or rogue with different starting stats
- **Multiple Enemy Types**: Different enemies with special abilities
- **Multiple Shops**: Weapon shop, armor shop, magic shop with different inventories