SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE		DEPARTMENT OF COMPUTER SCIENCE ENGINEERING	
Program Name: M. Tech/MCA		**Assignment Type: Lab**	**AcademicYear:**2025-2026
Course Coordinator Name		Venkataramana Veeramsetty	
Course Code	24CS002PC215	**Course Title**	AI Assisted Problem Solving Using Python
Year/Sem	I/I	**Regulation**	R24
Date and Day of Assignment	Week1 - Tuesday	**Time(s)**	
Duration	2 Hours	**Applicable to Batches**	M. Tech/MCA
AssignmentNumber:03.3(Present assignment number)/**24**(Total number of assignments)			

Q.No.	Question	*ExpectedTime to complete*
1	**Application for TGNPDCL** **Objective:** Build an application using Python program for TGNPDCL, to generate the bill based on energy consumption and type of customer with the help of AI tools. Build a python application as per below instructions ● Read all the required data like PU,CU and Type of customer ● Calculate bill amount based on number of units consumed, type of customer and other charges ● Finally print the values of EC(Energy Charges),FC(Fixed Charges),CC(Customer Char-ges),ED(Electricity Duty Charges),bill as per expected output **Requirements:** ● VS Code with Github Copilot and/or Google Colab with Gemini ● Students should bring power bill from their home **Deliverables:** ● Print energy bill for given inputs and verify with bill taken by students **PROMPT-1:** Read all the required data like PU,CU and Type of customer. Calculate bill amount based on number of units consumed, type of customer and other charges.Finally print the values of EC(Energy Charges),FC(Fixed Charges),CC(Customer Char-ges),ED(Electricity Duty Charges),bill as per expected output	Week2 - Wednesday

```python
def calculate_electricity_bill():
    print("\n=== Electricity Bill Calculator ===")

    # Get customer details
    customer_name = input("Enter Customer Name: ")
    customer_number = input("Enter Customer Number: ")
    billing_month = input("Enter Billing Month: ")

    try:
        # Get meter readings
        previous_reading = float(input("Enter Previous Units (PU): "))
        current_reading = float(input("Enter Current Units (CU): "))

        # Validate readings
        if current_reading < previous_reading:
            raise ValueError("Current reading cannot be less than previous reading!")

        # Calculate units consumed
        units_consumed = current_reading - previous_reading

        # Get customer type
        print("\nSelect Customer Type:")
        print("1. Domestic")
        print("2. Commercial")
        print("3. Industrial")
        customer_type = input("Enter type (1/2/3): ")

        # Set rates based on customer type and consumption
        if customer_type == "1":  # Domestic
            if units_consumed <= 100:
                energy_rate = 3.50
            elif units_consumed <= 200:
                energy_rate = 4.50
            else:
                energy_rate = 6.00
            fixed_charges = 50
            customer_charges = 25
        elif customer_type == "2":  # Commercial
            energy_rate = 8.00
            fixed_charges = 100
            customer_charges = 50
        elif customer_type == "3":  # Industrial
            energy_rate = 10.00
            fixed_charges = 150
            customer_charges = 75
        else:
            raise ValueError("Invalid customer type selected!")

        # Calculate all charges
        energy_charges = units_consumed * energy_rate
        electricity_duty = energy_charges * 0.09  # 9% ED charges
        total_amount = (energy_charges + fixed_charges +
                        customer_charges + electricity_duty)

        # Print the detailed bill
        print("\n" + "=" * 50)
        print("ELECTRICITY BILL".center(50))
        print("=" * 50)
        print(f"Customer Name: {customer_name}")
        print(f"Customer Number: {customer_number}")
        print(f"Billing Month: {billing_month}")
```

```
        print("\n" + "=" * 50)
        print("ELECTRICITY BILL".center(50))
        print("=" * 50)
        print(f"Customer Name: {customer_name}")
        print(f"Customer Number: {customer_number}")
        print(f"Billing Month: {billing_month}")
        print("-" * 50)
        print(f"Previous Reading (PU): {previous_reading:.2f} units")
        print(f"Current Reading (CU): {current_reading:.2f} units")
        print(f"Units Consumed: {units_consumed:.2f}")
        print(f"Energy Rate: ₹{energy_rate:.2f}/unit")
        print("-" * 50)
        print("CHARGES BREAKDOWN:")
        print(f"EC (Energy Charges): ₹{energy_charges:.2f}")
        print(f"FC (Fixed Charges): ₹{fixed_charges:.2f}")
        print(f"CC (Customer Charges): ₹{customer_charges:.2f}")
        print(f"ED (Electricity Duty @9%): ₹{electricity_duty:.2f}")
        print("-" * 50)
        print(f"Total Bill Amount: ₹{total_amount:.2f}")
        print("=" * 50)

    except ValueError as e:
        print(f"Error: {e}")
        print("Please enter valid numerical values")

if __name__ == "__main__":
    while True:
        calculate_electricity_bill()
        choice = input("\nCalculate another bill? (y/n): ")
        if choice.lower() != 'y':
            break
    print("Thank you for using Electricity Bill Calculator!")
```

OUTPUT:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

Enter Customer Number: E12345
Enter Billing Month: october 2025
Enter Previous Units (PU): 1000
Enter Current Units (CU): 1200

Select Customer Type:
1. Domestic
2. Commercial
3. Industrial
Enter type (1/2/3): 1

==================================================
                ELECTRICITY BILL
==================================================
Customer Name: Harshitha
Customer Number: E12345
Billing Month: october 2025
--------------------------------------------------
Previous Reading (PU): 1000.00 units
Current Reading (CU): 1200.00 units
Units Consumed: 200.00
Energy Rate: ₹4.50/unit
--------------------------------------------------
CHARGES BREAKDOWN:
EC (Energy Charges): ₹900.00
FC (Fixed Charges): ₹50.00
CC (Customer Charges): ₹25.00
ED (Electricity Duty @9%): ₹81.00
--------------------------------------------------
Total Bill Amount: ₹1056.00
==================================================

Calculate another bill? (y/n): n
Thank you for using Electricity Bill Calculator!
```
