

ASSIGNMENT-03

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BATCH-41

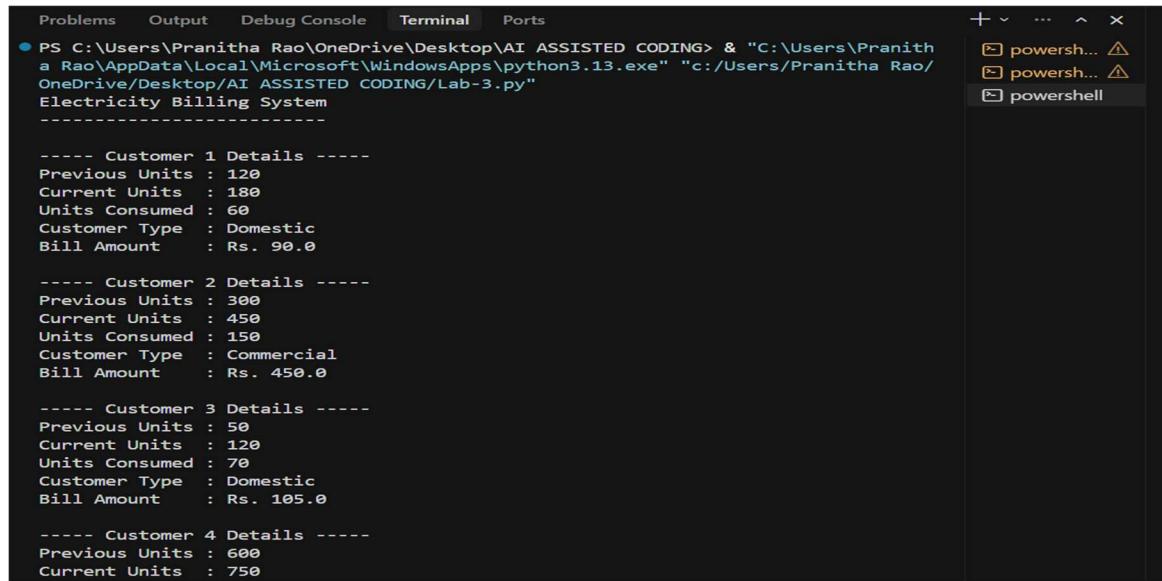
Task 1: AI-Generated Logic for Reading Consumer Details

PROMPT: Write a Python program that stores data for 10 customers (Previous Units, Current Units, Customer Type). Use a loop to calculate units consumed and electricity bill based on Domestic/Commercial rates, then display all details for each customer.

CODE:

```
 1  #Write a Python program that stores data for 10 customers (Previous Units, Current Units,
 2  # Electricity Billing System with Data
 3
 4  print("Electricity Billing System")
 5  (function) def print(
 6      *values: object,
 7      sep: str | None = " ",
 8      end: str | None = "\n",
 9      file: SupportsWrite[str] | None = None,
10      flush: Literal[False] = False
11  ) -> None
12
13 Prints the values to a stream, or to sys.stdout by default.
14
15 sep
16     string inserted between values, default a space.
17 end
18     string appended after the last value, default a newline.
19     (500, 700, "Commercial")
20
21
22 # Loop through customers
23 for i in range(10):
24     prev_units = customers[i][0]
25     curr_units = customers[i][1]
26     cust_type = customers[i][2]
27
28     # Calculate units consumed
29     units_consumed = curr_units - prev_units
30
31     # Billing Logic
32     if cust_type.lower() == "domestic":
33         if units_consumed <= 100:
34             amount = units_consumed * 1.5
35         elif units_consumed <= 200:
36             amount = (100 * 1.5) + ((units_consumed - 100) * 2.5)
37         else:
38             amount = (100 * 1.5) + (100 * 2.5) + ((units_consumed - 200) * 4.0)
39
40     elif cust_type.lower() == "commercial":
41         if units_consumed <= 100:
42             amount = units_consumed * 2.5
43         elif units_consumed <= 200:
44             amount = (100 * 2.5) + ((units_consumed - 100) * 4.0)
45         else:
46             amount = (100 * 2.5) + (100 * 4.0) + ((units_consumed - 200) * 6.0)
47
48     else:
49         amount = 0
50
51     # Display details
52     print("\n----- Customer", i+1, "Details -----")
53     print("Previous Units :", prev_units)
54     print("Current Units  :", curr_units)
55     print("Units Consumed :", units_consumed)
56     print("Customer Type  :", cust_type)
57     print("Bill Amount    : Rs.", amount)|
```

OUTPUT:



```
Problems Output Debug Console Terminal Ports
● PS C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING> & "C:\Users\Pranitha Rao\AppData\Local\Microsoft\WindowsApps\python3.13.exe" "c:/Users/Pranitha Rao/Desktop/Desktop/AI ASSISTED CODING/Lab-3.py"
Electricity Billing System
-----
----- Customer 1 Details -----
Previous Units : 120
Current Units : 180
Units Consumed : 60
Customer Type : Domestic
Bill Amount : Rs. 90.0

----- Customer 2 Details -----
Previous Units : 300
Current Units : 450
Units Consumed : 150
Customer Type : Commercial
Bill Amount : Rs. 450.0

----- Customer 3 Details -----
Previous Units : 50
Current Units : 120
Units Consumed : 70
Customer Type : Domestic
Bill Amount : Rs. 105.0

----- Customer 4 Details -----
Previous Units : 600
Current Units : 750
```

JUSTIFICATION:

This program is built to figure out electricity bills by comparing a customer's previous and current meter readings. It works out how many units were used and then applies different price slabs depending on whether the customer is domestic or commercial. Domestic users pay lower rates for the first 100 units and gradually higher rates as usage increases, while commercial users start at a higher rate and also climb with more consumption. The logic ensures that heavier usage is charged more fairly, reflecting real-world billing systems. Finally, it prints a neat summary for each customer showing their usage, type, and the total bill.

Task 2: Energy Charges Calculation Based on Units Consumed

PROMPT: Write a Python program that stores data for 10 customers (Previous Units, Current Units, Customer Type: Domestic/Commercial/Industrial). Use a loop to calculate units consumed and Energy Charges (EC) based on customer type. Display all details for each customer with clear conditional logic.

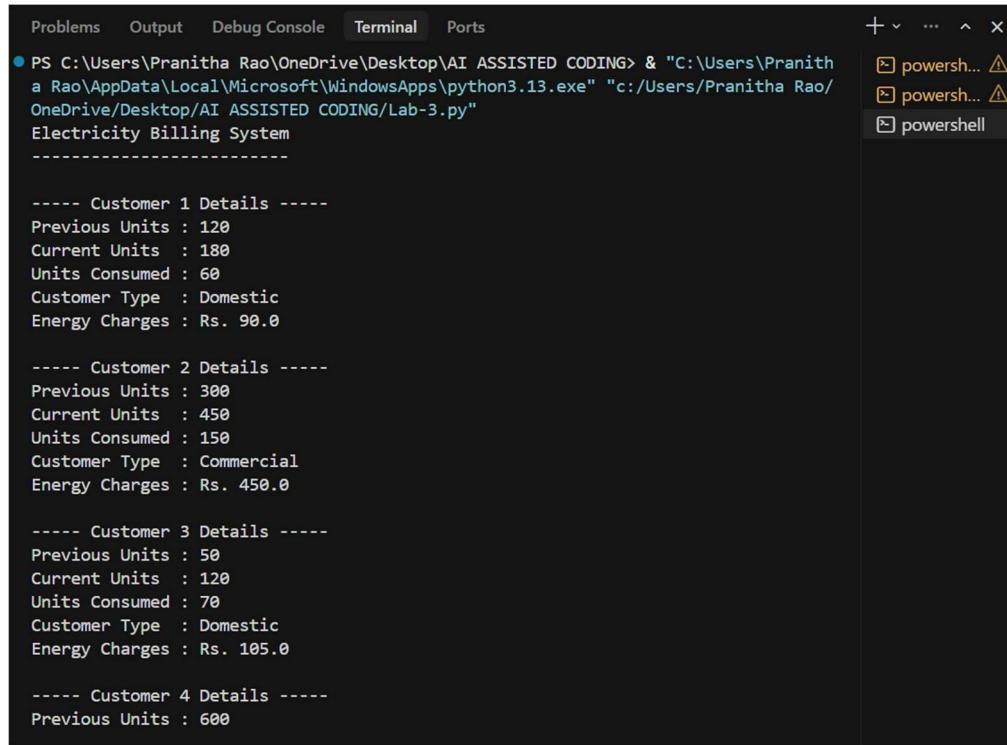
CODE:

```
Lab-3.py > ...
60  #Write a Python program that stores data for 10 customers (Previous Units, Current Units,
61  # Electricity Billing System with Domestic, Commercial, and Industrial Consumers
62  print("Electricity Billing System")
63  print("-----")
64  # Data for 10 customers: (Previous Units, Current Units, Customer Type)
65  customers = [
66      (120, 180, "Domestic"),
67      (300, 450, "Commercial"),
68      (50, 120, "Domestic"),
69      (600, 750, "Industrial"),
70      (200, 280, "Domestic"),
71      (100, 250, "Commercial"),
72      (400, 500, "Industrial"),
73      (150, 220, "Commercial"),
74      (80, 160, "Domestic"),
75      (500, 700, "Industrial")
76  ]
77  # Loop through customers
78  for i in range(10):
79      prev_units = customers[i][0]
80      curr_units = customers[i][1]
81      cust_type = customers[i][2]
82      # Calculate units consumed
83      units_consumed = curr_units - prev_units
84      # Energy Charges Calculation
85      if cust_type.lower() == "domestic":
86          if units_consumed <= 100:
87              ec = units_consumed * 1.5
88          elif units_consumed <= 200:
89              ec = (100 * 1.5) + ((units_consumed - 100) * 2.5)
90          else:
91              ec = (100 * 1.5) + (100 * 2.5) + ((units_consumed - 200) * 4.0)
92      elif cust_type.lower() == "commercial":
93          if units_consumed <= 100:
94              ec = units_consumed * 2.5
95          elif units_consumed <= 200:
96              ec = (100 * 2.5) + ((units_consumed - 100) * 4.0)
97          else:
98              ec = (100 * 2.5) + (100 * 4.0) + ((units_consumed - 200) * 6.0)
99      elif cust_type.lower() == "industrial":
100         if units_consumed <= 100:
101             ec = units_consumed * 3.5
102         elif units_consumed <= 200:
103             ec = (100 * 3.5) + ((units_consumed - 100) * 5.0)
104         else:
105             ec = (100 * 3.5) + (100 * 5.0) + ((units_consumed - 200) * 7.5)
106     else:
107         ec = 0
108     # Display details
109     print("\n----- Customer", i+1, "Details -----")
110     print("Previous Units :", prev_units)
111     print("Current Units  :", curr_units)
112     print("Units Consumed :", units_consumed)
113     print("Customer Type  :", cust_type)
114     print("Energy Charges : Rs.", ec)
```

```
Lab-1.py X  Lab-2.py X  Lab-3.py X  Close (Ctrl+F4) ...
```

```
Lab-3.py > ...
87          ec = units_consumed * 1.5
88      elif units_consumed <= 200:
89          ec = (100 * 1.5) + ((units_consumed - 100) * 2.5)
90      else:
91          ec = (100 * 1.5) + (100 * 2.5) + ((units_consumed - 200) * 4.0)
92  elif cust_type.lower() == "commercial":
93      if units_consumed <= 100:
94          ec = units_consumed * 2.5
95      elif units_consumed <= 200:
96          ec = (100 * 2.5) + ((units_consumed - 100) * 4.0)
97      else:
98          ec = (100 * 2.5) + (100 * 4.0) + ((units_consumed - 200) * 6.0)
99  elif cust_type.lower() == "industrial":
100     if units_consumed <= 100:
101         ec = units_consumed * 3.5
102     elif units_consumed <= 200:
103         ec = (100 * 3.5) + ((units_consumed - 100) * 5.0)
104     else:
105         ec = (100 * 3.5) + (100 * 5.0) + ((units_consumed - 200) * 7.5)
106 else:
107     ec = 0
108 # Display details
109 print("\n----- Customer", i+1, "Details -----")
110 print("Previous Units :", prev_units)
111 print("Current Units  :", curr_units)
112 print("Units Consumed :", units_consumed)
113 print("Customer Type  :", cust_type)
114 print("Energy Charges : Rs.", ec)
```

OUTPUT:



```
PS C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING> & "C:\Users\Pranitha Rao\AppData\Local\Microsoft\WindowsApps\python3.13.exe" "c:/Users/Pranitha Rao/OneDrive/Desktop/AI ASSISTED CODING/Lab-3.py"
Electricity Billing System
-----
----- Customer 1 Details -----
Previous Units : 120
Current Units : 180
Units Consumed : 60
Customer Type : Domestic
Energy Charges : Rs. 90.0

----- Customer 2 Details -----
Previous Units : 300
Current Units : 450
Units Consumed : 150
Customer Type : Commercial
Energy Charges : Rs. 450.0

----- Customer 3 Details -----
Previous Units : 50
Current Units : 120
Units Consumed : 70
Customer Type : Domestic
Energy Charges : Rs. 105.0

----- Customer 4 Details -----
Previous Units : 600
```

JUSTIFICATION :

This program prints an electricity billing system for 10 customers with different types. It calculates units consumed by subtracting previous readings from current readings. Depending on whether the customer is domestic, commercial, or industrial, it applies slab-based rates to compute energy charges. Domestic customers have the lowest rates, commercial higher, and industrial the highest, with charges increasing as usage grows. Finally, it displays each customer's details including units consumed, type, and total bill.

Task 3: Modular Design Using AI Assistance (Using Functions)

PROMPT: Write a Python program for an electricity billing system using modular design. Store data for 10 customers (Previous Units, Current Units, Customer Type: Domestic/Commercial/Industrial). Use user-defined functions to calculate Energy Charges (EC) and Fixed Charges (FC), return values, and display all details for each customer.

CODE:

```
Lab-1.py X Lab-2.py X Lab-3.py X
Lab-3.py C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING\Lab-1.py
119  #Write a Python program for an electricity billing system using modular design. Store dat
120  # Electricity Billing System using Modular Design (Functions)
121  # Function to calculate Energy Charges (EC)
122  def calculate_energy_charges(units, cust_type):
123      #Calculate energy charges based on units consumed and customer type.Domestic, Commercial
124      ec = 0
125      if cust_type.lower() == "domestic":
126          if units <= 100:
127              ec = units * 1.5
128          elif units <= 200:
129              ec = (100 * 1.5) + ((units - 100) * 2.5)
130          else:
131              ec = (100 * 1.5) + (100 * 2.5) + ((units - 200) * 4.0)
132      elif cust_type.lower() == "commercial":
133          if units <= 100:
134              ec = units * 2.5
135          elif units <= 200:
136              ec = (100 * 2.5) + ((units - 100) * 4.0)
137          else:
138              ec = (100 * 2.5) + (100 * 4.0) + ((units - 200) * 6.0)
139      elif cust_type.lower() == "industrial":
140          if units <= 100:
141              ec = units * 3.5
142          elif units <= 200:
143              ec = (100 * 3.5) + ((units - 100) * 5.0)
144          else:
145              ec = (100 * 3.5) + (100 * 5.0) + ((units - 200) * 7.5)
```

```
Lab-1.py X Lab-2.py X Lab-3.py X
Lab-3.py C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING\Lab-1.py
144      else:
145          ec = (100 * 3.5) + (100 * 5.0) + ((units - 200) * 7.5)
146      return ec
147  # Function to calculate Fixed Charges (FC)
148  def calculate_fixed_charges(cust_type):
149      #Calculate fixed charges based on customer type.
150      if cust_type.lower() == "domestic":
151          return 50    # Rs. 50 fixed charge
152      elif cust_type.lower() == "commercial":
153          return 100   # Rs. 100 fixed charge
154      elif cust_type.lower() == "industrial":
155          return 200   # Rs. 200 fixed charge
156      else:
157          return 0
158  # ----- Main Program -----
159  print("Electricity Billing System (Function-Based)")
160  print("-----")
161  # Data for 10 customers: (Previous Units, Current Units, Customer Type)
162  customers = [
163      (120, 180, "Domestic"),
164      (300, 450, "Commercial"),
165      (50, 120, "Domestic"),
166      (600, 750, "Industrial"),
167      (200, 280, "Domestic"),
168      (100, 250, "Commercial"),
169      (400, 500, "Industrial"),
170      (150, 220, "Commercial"),
171      (80, 160, "Domestic"),
```

```

171     (80, 160, "Domestic"),
172     (500, 700, "Industrial")
173 ]
174 # Process each customer
175 for i, cust in enumerate(tuple[int, int, str])(customers, start=1):
176     prev_units, curr_units, cust_type = cust
177     units_consumed = curr_units - prev_units
178     # Calculate EC and FC using functions
179     ec = calculate_energy_charges(units_consumed, cust_type)
180     fc = calculate_fixed_charges(cust_type)
181     total_bill = ec + fc
182     # Display details
183     print(f"\n---- Customer {i} Details ----")
184     print("Previous Units :", prev_units)
185     print("Current Units  :", curr_units)
186     print("Units Consumed :", units_consumed)
187     print("Customer Type  :", cust_type)
188     print("Energy Charges  : Rs.", ec)
189     print("Fixed Charges   : Rs.", fc)
190     print("Total Bill      : Rs.", total_bill)
191

```

OUTPUT:

```

Problems Output Debug Console Terminal Ports
● PS C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING> & "C:\Users\Pranitha Rao\AppData\Local\Microsoft\WindowsApps\python3.13.exe" "c:/Users/Pranitha Rao/OneDrive/Desktop/AI ASSISTED CODING/Lab-3.py"
Electricity Billing System (Function-Based)
-----
----- Customer 1 Details -----
Previous Units : 120
Current Units  : 180
Units Consumed : 60
Customer Type  : Domestic
Energy Charges  : Rs. 90.0
Fixed Charges   : Rs. 50
Total Bill      : Rs. 140.0

----- Customer 2 Details -----
Previous Units : 300
Current Units  : 450
Units Consumed : 150
Customer Type  : Commercial
Energy Charges  : Rs. 450.0
Fixed Charges   : Rs. 100
Total Bill      : Rs. 550.0

----- Customer 3 Details -----
Previous Units : 50
Current Units  : 120
Units Consumed : 70
Customer Type  : Domestic
Energy Charges  : Rs. 105.0
Fixed Charges   : Rs. 50

```

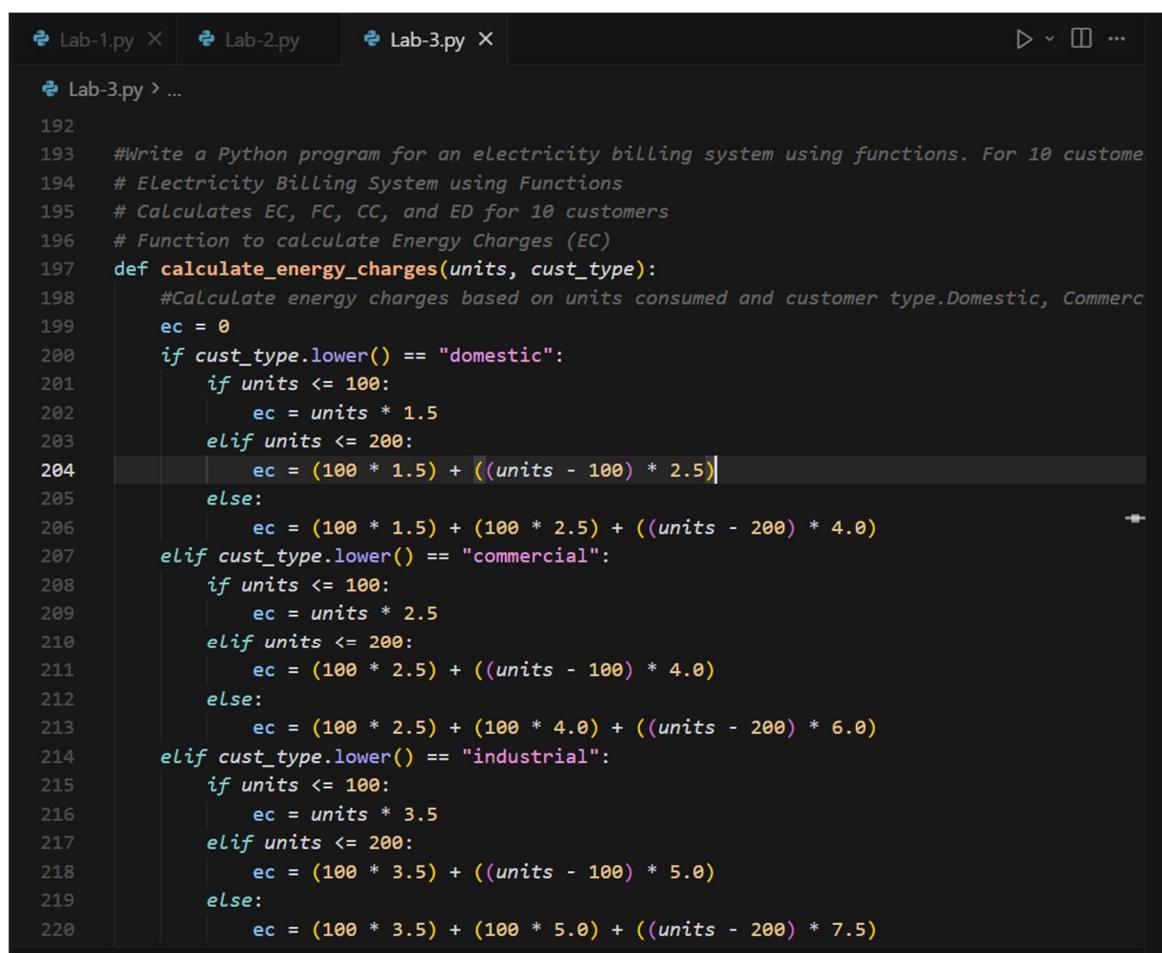
JUSTIFICATION:

This program calculates electricity bills using a modular design with functions. One function computes energy charges based on units consumed and customer type, applying different slab rates for domestic, commercial, and industrial users. Another function adds fixed charges depending on customer type. The main program loops through customer data, finds units consumed, and calls both functions to calculate charges. Finally, it prints each customer's details including units, type, energy charges, fixed charges, and total bill.

Task 4: Calculation of Additional Charges

PROMPT: Write a Python program for an electricity billing system using functions. For 10 customers, calculate Energy Charges (EC), Fixed Charges (FC), Customer Charges (CC), and Electricity Duty (ED) based on customer type (Domestic/Commercial/Industrial). Display all individual charges and the total bill clearly.

CODE:



The screenshot shows a code editor interface with three tabs at the top: 'Lab-1.py X', 'Lab-2.py X', and 'Lab-3.py X'. The 'Lab-3.py' tab is active, displaying the following Python code:

```
192
193     #Write a Python program for an electricity billing system using functions. For 10 customer
194     # Electricity Billing System using Functions
195     # Calculates EC, FC, CC, and ED for 10 customers
196     # Function to calculate Energy Charges (EC)
197     def calculate_energy_charges(units, cust_type):
198         #Calculate energy charges based on units consumed and customer type.Domestic, Commercial
199         ec = 0
200         if cust_type.lower() == "domestic":
201             if units <= 100:
202                 ec = units * 1.5
203             elif units <= 200:
204                 ec = (100 * 1.5) + ((units - 100) * 2.5)
205             else:
206                 ec = (100 * 1.5) + (100 * 2.5) + ((units - 200) * 4.0)
207         elif cust_type.lower() == "commercial":
208             if units <= 100:
209                 ec = units * 2.5
210             elif units <= 200:
211                 ec = (100 * 2.5) + ((units - 100) * 4.0)
212             else:
213                 ec = (100 * 2.5) + (100 * 4.0) + ((units - 200) * 6.0)
214         elif cust_type.lower() == "industrial":
215             if units <= 100:
216                 ec = units * 3.5
217             elif units <= 200:
218                 ec = (100 * 3.5) + ((units - 100) * 5.0)
219             else:
220                 ec = (100 * 3.5) + (100 * 5.0) + ((units - 200) * 7.5)
```

```
Lab-1.py X Lab-2.py X Lab-3.py X
Lab C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING\Lab-1.py

221     return ec
222     # Function to calculate Fixed Charges (FC)
223     def calculate_fixed_charges(cust_type):
224         #Calculate fixed charges based on customer type.
225         if cust_type.lower() == "domestic":
226             return 50 # Rs. 50 fixed charge
227         elif cust_type.lower() == "commercial":
228             return 100 # Rs. 100 fixed charge
229         elif cust_type.lower() == "industrial":
230             return 200 # Rs. 200 fixed charge
231         else:
232             return 0
233     # Function to calculate Customer Charges (CC)
234     def calculate_customer_charges():
235         #Customer charges are a fixed fee applied to all customers.
236         return 30 # Rs. 30 per customer
237     # Function to calculate Electricity Duty (ED)
238     def calculate_electricity_duty(ec):
239         #Electricity duty is calculated as a percentage of energy charges.
240         duty_rate = 0.05 # 5% of EC
241         return ec * duty_rate
242     # ----- Main Program -----
243     print("Electricity Billing System with EC, FC, CC, and ED")
244     print("-----")
245     # Data for 10 customers: (Previous Units, Current Units, Customer Type)
246     customers = [
247         (120, 180, "Domestic"),
248         (300, 450, "Commercial"),
249         (50, 120, "Domestic"),
```

```
Lab-1.py X Lab-2.py X Lab-3.py X
Lab C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING\Lab-1.py

250         (600, 750, "Industrial"),
251         (200, 280, "Domestic"),
252         (100, 250, "Commercial"),
253         (400, 500, "Industrial"),
254         (150, 220, "Commercial"),
255         (80, 160, "Domestic"),
256         (500, 700, "Industrial")
257     ]
258     # Process each customer
259     for i, cust in enumerate(tuple[int, int, str])(customers, start=1):
260         prev_units, curr_units, cust_type = cust
261         units_consumed = curr_units - prev_units
262         # Calculate charges using functions
263         ec = calculate_energy_charges(units_consumed, cust_type)
264         fc = calculate_fixed_charges(cust_type)
265         cc = calculate_customer_charges()
266         ed = calculate_electricity_duty(ec)
267         total_bill = ec + fc + cc + ed
268         # Display details
269         print(f"\n----- Customer {i} Details -----")
270         print("Previous Units :", prev_units)
271         print("Current Units  :", curr_units)
272         print("Units Consumed :", units_consumed)
273         print("Customer Type  :", cust_type)
274         print("Energy Charges : Rs.", ec)
275         print("Fixed Charges  : Rs.", fc)
276         print("Customer Charges : Rs.", cc)
277         print("Electricity Duty (5% of EC): Rs.", ed)
278         print("Total Bill      : Rs.", total_bill)
```

OUTPUT:

```
PS C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING> & "C:\Users\Pranitha Rao\AppData\Local\Microsoft\WindowsApps\python3.13.exe" "c:/Users/Pranitha Rao/OneDrive/Desktop/AI ASSISTED CODING/Lab-3.py"
Electricity Billing System with EC, FC, CC, and ED
-----
----- Customer 1 Details -----
Previous Units : 120
Current Units : 180
Units Consumed : 60
Customer Type : Domestic
Energy Charges : Rs. 90.0
Fixed Charges : Rs. 50
Customer Charges : Rs. 30
Electricity Duty (5% of EC): Rs. 4.5
Total Bill : Rs. 174.5

----- Customer 2 Details -----
Previous Units : 300
Current Units : 450
Units Consumed : 150
Customer Type : Commercial
Energy Charges : Rs. 450.0
Fixed Charges : Rs. 100
Customer Charges : Rs. 30
Electricity Duty (5% of EC): Rs. 22.5
Total Bill : Rs. 602.5

----- Customer 3 Details -----
Previous Units : 50
Current Units : 120
Units Consumed : 70
```

JUSTIFICATION:

This program calculates electricity bills for 10 customers using functions. It computes Energy Charges (EC) with slab rates, adds Fixed Charges (FC) by type, Customer Charges (CC) as a flat fee, and Electricity Duty (ED) at 5% of EC. The main loop processes each customer's data, finds units consumed, and applies these functions. All charges are summed to get the total bill. Finally, it prints a clear summary of each customer's usage and charges.

Task 5: Final Bill Generation and Output Analysis

PROMPT: Write a Python program for an electricity billing system using functions. For 10 customers, calculate the Total Bill = EC + FC + CC + ED. Display all charges clearly: Energy Charges (EC), Fixed Charges (FC), Customer Charges (CC), Electricity Duty (ED), and Total Bill Amount. Provide neatly formatted output and include a short analysis of accuracy, readability, and real-world applicability.

CODE:

```
Lab-1.py Lab-2.py Lab-3.py C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING\Lab-1.py

280
281 #Write a Python program for an electricity billing system using functions. For 10 customers
282 # Final Electricity Billing System with Output Analysis
283 # Function to calculate Energy Charges (EC)
284 def calculate_energy_charges(units, cust_type):
285     #Calculate energy charges based on units consumed and customer type. Domestic, Commercial, Industrial
286     ec = 0
287     if cust_type.lower() == "domestic":
288         if units <= 100:
289             ec = units * 1.5
290         elif units <= 200:
291             ec = (100 * 1.5) + ((units - 100) * 2.5)
292         else:
293             ec = (100 * 1.5) + (100 * 2.5) + ((units - 200) * 4.0)
294     elif cust_type.lower() == "commercial":
295         if units <= 100:
296             ec = units * 2.5
297         elif units <= 200:
298             ec = (100 * 2.5) + ((units - 100) * 4.0)
299         else:
300             ec = (100 * 2.5) + (100 * 4.0) + ((units - 200) * 6.0)
301     elif cust_type.lower() == "industrial":
302         if units <= 100:
303             ec = units * 3.5
304         elif units <= 200:
305             ec = (100 * 3.5) + ((units - 100) * 5.0)
306         else:
307             ec = (100 * 3.5) + (100 * 5.0) + ((units - 200) * 7.5)
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```
Lab-1.py Lab-2.py Lab-3.py C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING\Lab-1.py

308     return ec
309 # Function to calculate Fixed Charges (FC)
310 def calculate_fixed_charges(cust_type):
311     #Calculate fixed charges based on customer type.
312     if cust_type.lower() == "domestic":
313         return 50
314     elif cust_type.lower() == "commercial":
315         return 100
316     elif cust_type.lower() == "industrial":
317         return 200
318     else:
319         return 0
320 # Function to calculate Customer Charges (CC)
321 def calculate_customer_charges():
322     #Customer charges are a fixed fee applied to all customers.
323     return 30
324 # Function to calculate Electricity Duty (ED)
325 def calculate_electricity_duty(ec):
326     #Electricity duty is calculated as a percentage of energy charges.
327     duty_rate = 0.05 # 5% of EC
328     return ec * duty_rate
329 # ----- Main Program -----
330 print("Final Electricity Billing System")
331 print("====")
332 # Data for 10 customers: (Previous Units, Current Units, Customer Type)
333 customers = [
334     (120, 180, "Domestic"),
335     (300, 450, "Commercial"),
336     (450, 600, "Commercial"),
337     (600, 750, "Industrial"),
338     (750, 900, "Industrial"),
339     (900, 1050, "Industrial"),
340     (1050, 1200, "Commercial"),
341     (1200, 1350, "Commercial"),
342     (1350, 1500, "Domestic"),
343     (1500, 1650, "Domestic")
344 ]
```

OUTPUT:

```
PS C:\Users\Pranitha Rao\OneDrive\Desktop\AI ASSISTED CODING> & "C:\Users\Pranitha Rao\AppData\Local\Microsoft\WindowsApps\python3.13.exe" "c:/Users/Pranitha Rao/Desktop/AI ASSISTED CODING/Lab-3.py"
Final Electricity Billing System
=====
----- Customer 1 Bill -----
Previous Units      : 120
Current Units       : 180
Units Consumed     : 60
Customer Type       : Domestic
Energy Charges (EC): Rs. 90.00
Fixed Charges (FC) : Rs. 50.00
Customer Charges(CC): Rs. 30.00
Electricity Duty(ED): Rs. 4.50
Total Bill Amount   : Rs. 174.50

----- Customer 2 Bill -----
Previous Units      : 300
Current Units       : 450
Units Consumed     : 150
Customer Type       : Commercial
Energy Charges (EC): Rs. 450.00
Fixed Charges (FC) : Rs. 100.00
Customer Charges(CC): Rs. 30.00
Electricity Duty(ED): Rs. 22.50
Total Bill Amount   : Rs. 602.50

----- Customer 3 Bill -----
Previous Units      : 50
Current Units       : 120
```

JUSTIFICATION:

This program works out electricity bills for 10 customers using functions. It finds how many units were used, then calculates energy charges with slab rates, adds fixed charges by type, a small customer fee, and electricity duty at 5%. All these are added together to get the total bill, which is printed neatly for each customer.