**Programme for Practice**

1. **Electricity Bill Calculation**

# Get the consumed Electric Unit from the user

units = float(input("Enter the number of units consumed: "))

# Fixed charge

fixed\_charge = 50

# Calculate bill based on units consumed

if units <= 100:

bill = units \* 1

elif units <= 200:

bill = 100 \* 1 + (units - 100) \* 2

elif units <= 300:

bill = 100 \* 1 + 100 \* 2 + (units - 200) \* 3

else:

bill = 100 \* 1 + 100 \* 2 + 100 \* 3 + (units - 300) \* 5

# Add fixed charge

bill += fixed\_charge

# Total bill including GST

total\_bill = bill

# Display the bill details

print(f"\nElectricity Bill Details:")

print(f"Units Consumed: {units}")

print(f"Total Bill : ₹{total\_bill}")

1. **Income Tax Calculation**

# get the annual income of the person

income = float(input("Enter your annual income: ₹"))

# Calculate tax based on income slabs

if income <= 250000:

tax = 0

elif income <= 500000:

tax = (income - 250000) \* 0.05

elif income <= 1000000:

tax = (500000 - 250000) \* 0.05 + (income - 500000) \* 0.2

else:

tax = (500000 - 250000) \* 0.05 + (1000000 - 500000) \* 0.2 + (income - 1000000) \* 0.3

# Calculate health and education cess (4% on tax)

cess = tax \* 0.04

# Total tax including cess

total\_tax = tax + cess

# Display tax details

print(f"\nIncome Tax Calculation:")

print(f"Annual Income: ₹{income}")

print(f"Tax Payable (before cess): ₹{tax}")

print(f"Health & Education Cess (4%): ₹{cess}")

print(f"Total Tax Payable: ₹{total\_tax}")

**3. Salary Calculation**

# Get the basic salary of the employee

basic\_salary = float(input("Enter the basic salary between ₹10000 and ₹5000000: ₹"))

# Deductions

pf = basic\_salary \* 0.12 # Provident Fund (12% of basic salary)

pt = 200 if basic\_salary > 10000 else 0 # Professional Tax (fixed for salaries above ₹10,000)

# Annual salary

annual\_salary = basic\_salary \* 12

# Tax calculation

tax = 0

if annual\_salary > 250000:

if annual\_salary <= 500000:

tax = (annual\_salary - 250000) \* 0.05

elif annual\_salary <= 1000000:

tax = (250000 \* 0.05) + (annual\_salary - 500000) \* 0.2

else:

tax = (250000 \* 0.05) + (500000 \* 0.2) + (annual\_salary - 1000000) \* 0.3

# Monthly tax

monthly\_tax = tax / 12

# Gross salary

gross\_salary = basic\_salary

# Net salary calculation (Gross Salary - PF - PT - Monthly Tax)

net\_salary = gross\_salary - pf - pt - monthly\_tax

# Display salary details

print("\nSalary Calculation Details:")

print(f"Basic Salary: ₹{basic\_salary}")

print(f"Provident Fund (12%): ₹{pf}")

print(f"Professional Tax (PT): ₹{pt}")

print(f"Income Tax: ₹{tax}")

print(f"Gross Salary (before tax and deductions): ₹{gross\_salary}")

print(f"Net Salary (after tax and deductions): ₹{net\_salary}")

**4. Loan EMI Calculator**

# Input loan details

principal = float(input("Enter the loan amount (Principal): ₹"))

annual\_rate = float(input("Enter the annual interest rate (in %): "))

years = int(input("Enter the loan tenure (in years): "))

# Convert annual rate to monthly rate

monthly\_rate = (annual\_rate / 12) / 100

# Calculate the number of installments (months)

months = years \* 12

# Calculate EMI using the formula

emi = (principal \* monthly\_rate \* (1 + monthly\_rate) \*\* months) / ((1 + monthly\_rate) \*\* months - 1)

# Calculate total payment

total\_payment = emi \* months

# Calculate total interest

total\_interest = total\_payment - principal

# Display EMI details

print(f"\nLoan EMI Details:")

print(f"Loan Amount: ₹{principal}")

print(f"Annual Interest Rate: {annual\_rate}%")

print(f"Loan Tenure: {years} years ({months} months)")

print(f"Monthly EMI: ₹{emi}")

print(f"Total Payment: ₹{total\_payment}")

print(f"Total Interest: ₹{total\_interest}")

5.Currency Converter

# Predefined conversion rates (from source currency to INR)

conversion\_rates = {

"INR": 1, # 1 INR = ₹1

"USD": 84.29, # 1 USD = ₹75

"EUR": 88.41, # 1 EUR = ₹85

"GBP": 105.85 # 1 GBP = ₹95

}

# List of valid currencies

valid\_currencies = ["INR", "USD", "EUR", "GBP"]

print("Welcome to the Currency Converter!")

# Get source currency from user

from\_currency = input("Enter the source currency as mentioned (INR, USD, EUR, GBP): ").upper()

while from\_currency not in valid\_currencies:

print("Invalid currency! Please enter a valid currency as mentioned (INR, USD, EUR, GBP).")

from\_currency = input("Enter the source currency (INR, USD, EUR, GBP): ").upper()

# Get target currency from user

to\_currency = input("Enter the target currency (INR, USD, EUR, GBP): ").upper()

while to\_currency not in valid\_currencies:

print("Invalid currency! Please enter a valid currency (INR, USD, EUR, GBP).")

to\_currency = input("Enter the target currency (INR, USD, EUR, GBP): ").upper()

# Ensure source and target currencies are not the same

if from\_currency == to\_currency:

print("The source and target currencies cannot be the same.")

else:

# Get the amount to convert

amount = float(input(f"Enter the amount in {from\_currency}: "))

# Convert the amount based on the selected currencies

if from\_currency == "INR":

# Convert from INR to target currency

converted\_amount = amount / conversion\_rates[to\_currency]

elif to\_currency == "INR":

# Convert from source currency to INR

converted\_amount = amount \* conversion\_rates[from\_currency]

else:

# Convert between two non-INR currencies

converted\_amount = amount \* conversion\_rates[from\_currency] / conversion\_rates[to\_currency]

# Display the result

print(f"\n{amount} {from\_currency} is equal to {converted\_amount} {to\_currency}.")