def bill\_splitter():

print("=== Advanced Bill Splitter with Payment Tracking ===")

try:

# Get the total bill amount

total\_bill = float(input("Enter the total bill amount: $"))

if total\_bill <= 0:

print("Bill amount must be positive.")

return

# Get the number of people

num\_people = int(input("Enter the number of people: "))

if num\_people < 1:

print("Number of people must be at least 1.")

return

# Get names for each person

names = []

for i in range(num\_people):

name = input(f"Enter name for person {i+1}: ").strip()

names.append(name if name else f"Person {i+1}")

# Get splitting type

split\_type = input("Choose splitting type (even/uneven): ").lower()

while split\_type not in ['even', 'uneven']:

print("Invalid choice. Please enter 'even' or 'uneven'.")

split\_type = input("Choose splitting type (even/uneven): ").lower()

if split\_type == 'uneven':

print(f"Enter percentages for {num\_people} people (must sum to 100%):")

percentages = []

for i in range(num\_people):

percent = float(input(f"Percentage for {names[i]}: "))

percentages.append(percent)

if abs(sum(percentages) - 100) > 0.01: # Allow for floating point precision

print("Error: Percentages must sum to 100%")

return

# Get optional tax percentage

tax\_percent = 0

tax\_option = input("Add tax? (yes/no): ").lower()

if tax\_option == 'yes':

tax\_percent = float(input("Enter tax percentage (e.g., 8 for 8%): "))

if tax\_percent < 0:

print("Tax percentage cannot be negative.")

return

# Get optional tip percentage

tip\_percent = 0

tip\_option = input("Add tip? (yes/no): ").lower()

if tip\_option == 'yes':

tip\_percent = float(input("Enter tip percentage (e.g., 15 for 15%): "))

if tip\_percent < 0:

print("Tip percentage cannot be negative.")

return

# Calculate total with tax and tip

tax\_amount = total\_bill \* (tax\_percent / 100)

subtotal\_with\_tax = total\_bill + tax\_amount

tip\_amount = subtotal\_with\_tax \* (tip\_percent / 100)

grand\_total = subtotal\_with\_tax + tip\_amount

# Calculate amounts per person

if split\_type == 'even':

per\_person = grand\_total / num\_people

amounts = {name: per\_person for name in names}

else:

amounts = {names[i]: grand\_total \* (percentages[i]/100) for i in range(num\_people)}

# Initialize payment tracking

payments = {name: False for name in names}

# Display results

print("\n=== Bill Summary ===")

print(f"Subtotal: ${total\_bill:.2f}")

if tax\_percent > 0:

print(f"Tax ({tax\_percent}%): ${tax\_amount:.2f}")

print(f"Subtotal with tax: ${subtotal\_with\_tax:.2f}")

if tip\_percent > 0:

print(f"Tip ({tip\_percent}%): ${tip\_amount:.2f}")

print(f"Grand total: ${grand\_total:.2f}")

# Payment tracking loop

while True:

print("\n=== Payment Status ===")

for name in names:

status = "Paid" if payments[name] else "Pending"

print(f"{name}: ${amounts[name]:.2f} - {status}")

all\_paid = all(payments.values())

if all\_paid:

print("\nAll payments completed!")

break

print("\nOptions:")

print("1. Record a payment")

print("2. Exit")

choice = input("Enter your choice (1-2): ")

if choice == '1':

print("\nWho has paid?")

for i, name in enumerate(names, 1):

if not payments[name]:

print(f"{i}. {name}")

try:

payer\_num = int(input("Enter number: "))

if 1 <= payer\_num <= len(names):

payer = names[payer\_num-1]

if payments[payer]:

print(f"{payer} has already paid!")

else:

payments[payer] = True

print(f"Recorded payment for {payer}")

else:

print("Invalid number")

except ValueError:

print("Please enter a valid number")

elif choice == '2':

print("\nExiting payment tracker. Remaining payments:")

for name in names:

if not payments[name]:

print(f"- {name}: ${amounts[name]:.2f}")

break

else:

print("Invalid choice")

except ValueError:

print("Invalid input. Please enter numbers only.")

# Run the bill splitter

if \_name\_ == "\_main\_":

bill\_splitter()