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# Programming for Business, Project 1
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# Read the instructions carefully before you begin! Steps 1 eg.
durham, concord and manchester
#    b. Create the following keys: name, hot coffee sales, iced
coffee sales, and number of customers
#    c. Set the value of the name key to the name of the location
#    d. Set the other keys to empty lists (we'll fill them in
later)
#    e. Print these empty dictionaries; a print statement for each
(meaning do not put the 3 dictionaries in a list yet)

#G4 The script below will determine our dictionaries. In these
dictionares we will have our keys and values
print('\nQ1') #Ans Question 1 below.
durham = {'name' : 'durham',
          'hot_coffee_sales' : [],
          'iced_coffee_sales' : [],
          'number_of_customers' : []}
concord = {'name' : 'concord',
          'hot_coffee_sales' : [],
          'iced_coffee_sales' : [],
          'number_of_customers' : []}
manchester = {'name' : 'manchester',
          'hot_coffee_sales' : [],
          'iced_coffee_sales' : [],
          'number_of_customers' : []}
print(durham)
print(concord)
print(manchester)

# 2. Now update the dictionaries above with the following daily
values and print the dictionaries.
# (Do not just go back to the empty lists above and add the
values, write the code to update the dictionaries)
# Durham
#   hot coffee sales: 475, 390, 429, 455
#   iced coffee sales: 333, 290, 672, 342
#   number of customers: 161, 148, 219, 230
# Concord
#   hot coffee sales: 386, 487, 401, 300
#   iced coffee sales: 498, 453, 543, 432
#   number of customers: 187, 200, 210, 183
# Manchester
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#    hot coffee sales: 425, 529, 501, 432
#    iced coffee sales: 321, 350, 299, 375
#    number of customers: 205, 234, 261, 287

#G4 Here we are updating our empty lists in our dictionaries, so
they now have values
print("\nQ2") #Ans Question 2 below.
durham['hot_coffee_sales'] = [475, 390, 429, 455]
durham['iced_coffee_sales'] = [333, 290, 672, 342]
durham['number_of_customers'] = [161, 148, 219, 230]
concord['hot_coffee_sales'] = [386, 487, 401, 300]
concord['iced_coffee_sales'] = [498, 453, 543, 432]
concord['number_of_customers'] = [187, 200, 210, 183]
manchester['hot_coffee_sales'] = [425, 529, 501, 432]
manchester['iced_coffee_sales'] = [321, 350, 299, 375]
manchester['number_of_customers'] = [205, 234, 261, 287]

print(durham)
print(concord)
print(manchester)

# 3. Create a list called shops that contains your three
locations and print the list

#G4 We are creating a list called shops, that has our 3
dictionares grouped as 1 list.
print("\nQ3") #Ans Question 3 below.
shops = [durham, concord, manchester]
print(shops)

# 4. Loop over your shops list and print out the following for
each shop:
# (Note: You can use four print statements)
#    - Name: (print out the shop's name)
#    - Hot coffee sales: (print out the shop's hot coffee sales)
#    - Iced coffee sales: (print out the shop's iced coffee sales)
#    - Number of customers: (print out the shop's daily customer
count)

#G4 We are running a for loop to print statemnts for each key in
our dictionary. This will return statements for dictionary.
print("\nQ4") #Ans Question 4 below.
for shop in shops :
    print(f"Name: {shop['name']}")
    print(f"Hot Coffee Sales: {shop['hot_coffee_sales']}")
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    print(f"Iced Coffee Sales: {shop['iced_coffee_sales']}")
    print(f"Number of customers: {shop['number_of_customers']}")


# 5. Write a function to calculate the average customer sale for
each shop. To clarify, the calculation
# should show how much the average customer spends on coffee.
Steps:
#    a. Define a function called average_customer_sale() that has
one parameter: shop (see dictionaries created above). Steps
    #  b, c, and d are part of this function.
#    b. In a variable named coffee add the sum (using the sum()
function) of the shop's hot coffee sales to the sum of the shop's
iced coffee sales.
#    c. in a variable named avg_sale divide coffee (the variable)
by the sum of the number of customers.
#    d. Return the avg_sale for each shop.
#    e. Note that this must be a function, and must not contain
any numbers.

#  there is nothing to print for Q5, answer Q5 below.

#G4 We are calculating the average sale for each shop. To do
this, we are defining a variable called average_customer_sale.
def average_customer_sale(shop):
    coffee = sum(shop['hot_coffee_sales']) +
sum(shop['iced_coffee_sales'])
    avg_sale = coffee / sum(shop['number_of_customers'])
    return avg_sale



# 6. Use a for loop to loop through the shops and print
"ShopName's average
#  customer sale is $x.xx" The print statement must call the
average_customer_sale method.
#  Format the output to two decimal places. ShopName will be
replaced with the shop name
#  and x.xx will be replace with the average_customer_sale.

#G4 We are using a for loop to get the average customer sale by
shop.
print("\nQ6")  #Ans Question 6 below.

for shop in shops:
    print(f"{shop['name']} average customer sale is: $
{average_customer_sale(shop):,.2f}")
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# 7. Write a function that compares the avg_sale to the average
sale target and
#   assigns a value to the variable named goal.
#   a.  Define a function called targets_met() that has one
parameter: avg_sale.
#   b.  If avg_sale is more than target, assign value "exceeded"
to variable goal.
#   c.  else if avg_sale is greater than 90% of the target,
assign value "almost met" to variable goal.
#   d.  otherwise assign the value "not even close" to variable
goal.
#   e.  return the value of variable goal.
#Function test: Once you have completed the function, inside a
print statement call the function targets_met()
# and provide the argument value 5 when you call the function.

#G4 We are defining a function for targets met. We are using an if
statement sequence to assign the goal value.
print("\nQ7") #Ans Question 7 below the variable target.
#target is the average sale goal per person.
target = 4.50
def targets_met(avg_sale):
    if avg_sale > target :
        goal = "exceeded"
    elif avg_sale > (target*0.9):
        goal = "almost met"
    else:
        goal = "not even close"
    return goal

print(targets_met(5))

# 8. Use a for loop to loop through the shops and calculate what
percentage of the
#  average sales goal per person (target) each shop has reached.
The for loop will also
#  contain one print statement with an f string that displays:
#  "ShopName: Goal is x. You are at xx% of your target goal."
#     a.  Use the variable amt to calculate the percentage of the
average sales goal
#     per person (target) the shop has reached. Your expression
should use the average_customer_sale function
#     then divide that number by the value of target and multiply
by 100.
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#      b.    In a print statement, ShopName will be replaced with
the shop name.
#      c.    x in print statement will be the value of goal, so you
will first
#      call the average_customer_sale function to get the shop's
avg_sale, then use
#      that as the argument value for the targets_met function to
get the value of
#      goal (which will be exceeded, almost met, or not even
close.)
#      d. x.xx will be replace with the value of the variable amt.
Format to 1 decimal place.

#G4 We are using a for loop to determine if the goal for each
shop is met. We also created a varibale called amt to get a
percent of our target goal.
print("\nQ8")  #Ans Question 8 below.
for shop in shops:
    amt = (average_customer_sale(shop) / target) * 100
    print(f"{shop['name']}: goal is
{targets_met(average_customer_sale(shop))}. You are at {amt:,.1f}
% of your target goal.")

    #Durham: goal is almost met. You are at 99.3% of your target
goal.


# 9. JavaJoe has now a new shop in Portsmouth, with the following
data:
#    hot coffee sales: 450, 502, 550, 621
#    iced coffee sales: 621, 543, 400, 591
#    number of customers: 224, 225, 310, 230
#    a. Create a dictionary for Portsmouth (as you did in #1), add
the values
#    b. add Portsmouth to the shops, by appending the dictionary
to your list of shops.
#    c. Copy, paste and run the loop from Question #8.

#G4 We are creating a new dictionary called portsmouth and
assigning value. We are then appending this dictionary into the
shops list, then we are running the previous for statement from
question 8 to confirm our dictionary works.
print("\nQ9") #Ans Question 9 below.

portsmouth = {'name' : 'portsmouth',
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                'hot_coffee_sales' : [450, 502, 550, 621],
                'iced_coffee_sales' : [621, 543, 400, 591],
                'number_of_customers' : [224, 225, 310, 230]}

shops.append(portsmouth)

for shop in shops:
    amt = (average_customer_sale(shop) / target) * 100
    print(f"{shop['name']}: goal is
{targets_met(average_customer_sale(shop))}. You are at {amt:,.1f}
% of your target goal.")

# 10. Be sure that you have commented your work for each question
with lines that begin
# with "#Gx " replacing the x with your group number. This way I
can scan and see your comments.
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