CITP 110 Ch. 5 Solution

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#               Homework 5 Program Code
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#===============================================================================
#Program:       Average Sale Calculator
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#Date:          28 September 2014
#Abstract:      This program will input a salesperson's name followed by the
#               first sale amount and then the number of sales as indicated
#               below for a used car dealership. the program will then display
#               the salesperson's average, highest, and lowest sale.
#===============================================================================

#Define the main function
def main():

    # create a variable to control the loop
    keep_going = 'y'

    # create a counter for salespersons
    number_of_salespersons = 0

    # process each salesperson's sales
    while keep_going == 'y' or keep_going == 'Y':

        # use a function to process each salesperson
        process_salesperson()

        number_of_salespersons += 1

        # are there more salespersons?
        keep_going = input('Are there more salespersons? (enter y for yes): ')

    # display the total number of salespersons
    print ('There were', number_of_salespersons, 'salespersons processed.')

# process each salesperson's sale
def process_salesperson():

    # get the salesperson's name
    name = input("What is the salesperson's name? ")
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print ('Enter', name + "'s amount for first sale: "),
first_sale = float(input())

# validate the sale is > 0 and < 25000
while first_sale < 0 or first_sale > 25000:
    print ("ERROR: the sale cannot be less than 0 or greater than 25000.")
    first_sale = float(input("Please enter a correct sale amount: "))

# intialize total, lowest, and highest sale to first sale
total_sales = first_sale
lowest_sale = first_sale
highest_sale = first_sale

# get the number of sales for this salesperson
print ('How many sales does', name, 'have?')
number_of_sales = int(input())

for number in range(2, number_of_sales + 1):

    # get the sale amount
    print ('Enter', name + "'s sale #" + str(number) + ':'),
    sale = float(input())

    # validate the sale is > 0 and < 25000
    while sale < 0 or sale > 25000:
        print ('ERROR: the sale cannot be less than 0 or greater than \
        25000.')
        sale = float(input("Please enter a correct sale amount: "))

    # accumulate the sales
    total_sales += sale

    # check for highest sale
    if sale > highest_sale:
        highest_sale = sale

    # check for lowest sale
    elif sale < lowest_sale:
        lowest_sale = sale
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    # compute average sale
    average_sale = float(total_sales) / number_of_sales

    # display the average, highest, and lowest sale
    print ('')
    print (name + "'s average sale was: $", format(average_sale, ".2f"), \
           sep='')
    print (name + "'s highest sale was: $", format(highest_sale, ".2f"), \
           sep='')
    print (name + "'s lowest sale was:  $", format(lowest_sale, ".2f"), \
           sep='')
    print ('')

# call the main function
main()
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