Problem Set – Introduction to Functions.

1. Allow the user to repeatedly enter a quantity and price. Prompt the user on whether they want to do the program (Yes or No). Use a function to compute the total (quantity times price). The function should be passed the quantity and price and then return the total. In the function, provide a 10% discount if the total is over $10,0000.00. Display quantity, price and total. Sum and display the extended price.

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| --- | --- | --- |
| Y or N  Sum of extended price = 0 | F\_extended price(qty, unit price)   * Extended = qty \* unit price   If extended > 10000:   * Extended x .10 = discount   Else:   * Discount = 0   Return extended  While Y:   * Input quantity and price * Extended = f\_extended * Print qty, price, extended * Sum of extended = sum of extended + extended * Y or N | Print quantity, price, extended price  Print Sum of extended prices |

#before

def CompExtended(quantity, price):

extended = quantity \* price

if extended > 10000:

discount = extended \* .10

else:

disocunt = 0

return extended

sum\_extended = 0

answer = input("Would you like to continue? Y or N: ")

#during

while answer == "Y":

quantity = float(input("Enter quantity: "))

price = float(input("Enter price: "))

extended = CompExtended(quantity, price)

print("Quantity: ", quantity, end=" ")

print("Price: $", price, end=" ")

print("Extended price: $", extended)

sum\_extended = sum\_extended + extended

answer = input("Would you like to continue? Y or N: ")

#after

print("Sum of extended prices: $", sum\_extended)

1. Enter players last name, number of hits and at bats at the keyboard. Prompt the user on whether they want to do the program (Yes or No). Use a function to compute batting average. Pass the hits and at bats to the function. The function should return batting average. Display last name and batting average. Give a count of the number of players entered.

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| Y or N  Players = 0 | Def CompAverage(hits, bats):   * Average = hits / bats * Return average   While Y   * Enter hits and bats * Average = CompAverage(hits, bats) * Print name and average * Players = players + 1 * Y or N | Number of layers |

#before

def CompAverage(hits, bats):

average =hits / bats

return average

players = 0

answer = input("Would you like to continue? Y or N: ")

#during

while answer == "Y":

name = input("Enter player's name: ")

hits = float(input("Enter # of hits: "))

bats = float(input("Enter # of bats: "))

average = CompAverage(hits, bats)

print("Name: ", name, "Average: ", average)

players = players + 1

answer = input("Would you like to continue? Y or N:")

#after

print("Sum of players: ", players)

1. Enter the destination city, miles travelled and gallons used for a trip. Prompt the user on whether they want to do the program (Yes or No). Use a function to compute miles per gallon. Pass miles travelled and gallons used to the function. The function should return miles per gallon. Count the number of entries made (number of trips) Display destination city, miles and mpg. At end display the number of entries made.

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| --- | --- | --- |
| Y or N  Trips = 0 | Def CompMpg:   * Mpg = miles / gallons * return mpg   While Y   * Enter city, miles, and gallons * Trips = trips + 1 * Print city, miles, and mpg * Y or N | Print Total trips |

#before

def CompMpg(miles, gallons):

mpg = miles / gallons

return mpg

trips = 0

answer = input("Would you like to continue? Y or N: ")

#during

while answer == "Y":

city = input("Enter city: ")

miles = float(input("Enter # of miles: "))

gallons = float(input("Enter # of gallons: "))

mpg = CompMpg(miles, gallons)

print("City: ", city, "Miles: ", miles, "MGP: ", mpg)

trips = trips + 1

answer = input("Would you like to continue? Y or N:")

#after

print("Sum of all trips: ", trips)

1. Allow the employee to enter last name, job code and hours worked. Prompt the user on whether they want to do the program (Yes or No). Use a function to determine the pay rate. Pass to this function the job code and it should return rate of pay. Use Job code L is $25/hr, A is $30/hr and J is $50/hr for respective pay rates. Compute gross pay. Give time and a half for overtime. Display last name and gross pay. Sum and display total of all gross pay.

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| --- | --- | --- |
| Y or N  Sum of all gross pay | Def CompRate(code):   * If L, rate = 25 * elifA, rate = 30 * elif J, rate = 50 * Return rate   While Y   * Enter name, job code( L or A or J), hours worked * If hours > 40: * Pay = hours x rate * Print name, gross pay * Y or N | Print sum of all gross pay |

#before

def CompRate(code):

if code == "L":

rate = 25

elif code == "A":

rate = 30

elif code == "J":

rate = 50

else:

rate = 0

return rate

sum\_gross = 0

answer = input("Would you like to continue? Y or N: ")

#during

while answer == "Y":

name = input("Enter name :")

hours = float(input("Enter hours worked:"))

code = input("Enter code (L, A, or J): ")

#compute gross

if hours > 40:

rate = CompRate(code)

overtime = (hours - 40) \* (rate \* 1.5)

gross = hours \* rate

gross = gross + overtime

else:

rate = CompRate(code)

gross = hours \* rate

print("Name: ", name, "Gross pay: ", gross)

sum\_gross = sum\_gross + gross

answer = input("Would you like to continue? Y or N: ")

#after

print("Sum of gross pay: ", sum\_gross)

1. Allow the user to enter student last name, credit hours and district code. Prompt the user on whether they want to do the program (Yes or No). Use a function to compute tuition owed. Charge In district (code of I) $250 per credit hour. Out of district (code of O) is $550 per credit hour. The function should receive credit hours and district code and return tuition owed. Display student name and tuition owed. Sum and display total of all tuition owed.

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| --- | --- | --- |
| Y or N  Total = 0 | Def CompTuition(credits, code):   * If I, rate 250 * Else, rate = 550 * Tuition = credits \* rate * Return tuition   While Y   * Enter name, credits, code * Tuition = CompTuition * Print name, tuition * Total = total + tuition | Print total of all tuition |

#before

def Comptuition(credits, code):

if code == "I":

rate = 250

else:

rate = 550

tuition = credits \* rate

return tuition

total = 0

answer = input("Would you like to continue? Y or N: ")

#during

while answer == "Y":

name = input("Enter name :")

credits = float(input("Enter # of credits:"))

code = input("Enter code (I or O): ")

tuition = Comptuition(credits, code)

print("Name: ", name, "Tuition: ", tuition)

total = total + tuition

answer = input("Would you like to continue? Y or N: ")

#after

print("Sum of all tuition: ", total)