

Problem Set - Functions Pass By Value

1. Allow the user to enter a quantity and price, use ctrl+z to stop. 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 \$10,000.00. Display quantity, price and total. Sum and display the extended price.

Input	Process	Output
function header→	CompExtPrice(qty, unitprice) Extprice = qty*unitprice If extprice > 10000 Discamt = extprice * 0.10 Else Discamt = 0 newExtPrice = extPrice – discamt return newExtPrice	
Qty		Extprice
price	Main totalExtPrice = 0 Do you want to do this program (Yes or No) While (Yes) Input qty, price Extprice = CompExtPrice(qty,price) Display qty, price, Extprice totalExtPrice = totalExtPrice + extprice Do you want to continue with this program?	
calling statement→		
	Display totalExtPrice	totalExtPrice

- Enter players last name, number of hits and at bats at the keyboard, use ctrl+z to stop. 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.

Input	Process	Output
Lname hits bats	CompBattingAvg(hits, bats) BattingAvg= hits/bats return BattingAvg	
		batavg
	Main input hits, bats count=0 BattingAvg= CompBattingAvg (bats,hits) Display Lname, BattingAvg, count	Lname
		totalplayers

- Enter the destination city, miles traveled and gallons used for a trip, use ctrl+z to stop. Use a function to compute miles per gallon. Pass miles traveled 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.

Input	Process	Output
mi gal	CompMilegal mpg (mi, gal): mpg= mi/gal	mpg
city		
	Main count=0 input city, mi, gal Compmpg=mpg(mi, gal) count=count+1	entries

4. Allow the employee to enter last name, job code and hours worked, use ctrl+z to stop. 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.

Input	Process	Output
	CompPayrate=payrate(code,hrs) payrate= code* hrs if code== "L" elif	payrate
	CompGrosspay= gross(payrate)	gross
Lname code hrs	Prompt user input Lname, code, hrs compute gross print payrate	ttlgross

5. Allow the user to enter student last name, credit hours and district code, use ctrl+z to stop. 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.

Input	Process	Output
hrs code	CompTuitionOwed= tuition(code) if code== "I" tuition=250 elif code== "O" tuition=550	tuition

Lname hrs code	Main prompt user input Lname, hrs, code CompTuitionOwed= tuition(code) tuition= hrs * cred count=count+1 display Lname, tuition, ttltuition	tuition ttltuition
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Examples

1. Enter the number of Points and redemption code. For redemption code C then compute value as 2 x rewards points. Redemption code X then they get 3 x rewards points. All other codes get 1.5 x rewards points. Write a function that receives points and redemption code and computes rewards points. Display points, redemption code and rewards points.
2. Enter two numbers and operation code (A, S, M, D). Write a function that receives the two numbers and uses the operation code to perform an operation on the two numbers (A=addition, S=Subtraction, M=Multiplication, D=Division). Check for dividing by 0. If the second number is 0 then set result to -999. Display two number, operation code, result and message if attempt to divide by zero.
3. Allow the user to enter a string. The string can be entered with any case (all upper, all lower of mixed). Write a function that accepts the string and returns all lower case when the original string is all upper or mixed. If the original string is all lower then make the string all upper case. The function should return the new string. Display both the original and new string.