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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| Input | Process | Output |
|  | CompExtPrice(qty, unitprice)  Extprice = qty \* unitprice  If extprice > 10000  Discamt = extprice \* 0.1  Else  Discamt = 0  Newextprice = extprice – discamt  Return newestprice | Qty  Price  total |
| Prompt (yes or no) | Main  Totalextprice = 0  Do you want to do this program (yes or no)  While (yes)  Input qty, price  Extprice = compextprice(qty, price)  Display extprice  Totalextprice = totalextprice +extprice  Do you want to continue with this program? | Ext price |
| qty |  | totalextprice |
| price | Display totalextprice |  |

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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| Input | Process | Output |
| Prompt (yes/no) | Compbatavg(hits, atbats)  If atbats > 0  Return hits/atbats  Else  Return 0.0 |  |
| lastname | Main  Playercount = 0  Do you want to do this program (yes or no)  While (yes)  Input lastname, hits, atbats  batavg = hits/atbats  Display batavg  Playercount = playercount + 1  Do you want to continue with this program? | Lastname  batavg |
| numhits |  |  |
| atbats | Display playercount |  |

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 and cost of gas. Pass miles travelled and gallons used to the function. The function should return miles per gallon and compute gas cost to be gallons times 3.00. Count the number of entries made (number of trips) Display destination city, miles, mpg and gas cost. At end display the number of entries made, total miles travelled for all trips and total gas cost of all trips.

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| Input | Process | Output |
| Prompt(y/n) | Compmpgcost(miles, gallons)  mpg = miles/gallons  If mpg > 0  mpg = miles/gallons  Else  mpg = 0  gascost = gallons \* 3  Return mpg, gascost | City  Miles  Mpg  Gas cost |
| city | Main  tripcount = 0  totalmiles = 0  totalgas = 0  Do you want to do this program (yes or no)  While (yes)  Input city, miles, gallons  mpg = compmpgcost(miles, gallons)  Display mpg  tripcount = tripcount + 1  totalmiles = totalmiles + 1  totalgas = totalgas + 1  Do you want to continue with this program? |  |
| miles |  | Num of entries  Totalmiles  totalgascost |
| gallons | Display tripcount, totalmiles, totalgas |  |

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 and gross 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,hours, pay rate and gross pay. Sum and display total of all gross pay.

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| Input | Process | Output |
| Prompt (y/n) | Comppay(jobcode, hrs)    If jobcode = L  Rate = 25  Elif jobcode = A  Rate = 30  Elif jobcode = J  Rate = 50  Else  Rate = 0  If hrs > 40  Overtime = hrs – 40  Grosspay = (40 \* rate) + (overtime \* rate \* 1.5)  Else  Grosspay = hrs \* rate  Return rate, grosspay |  |
| lastname | Main  Totalgrosspay = 0  Do you want to do this program (yes or no)  While (yes)  Input lastname, jobcode, hrs  Rate, grosspay = comppay(jobcode, hrs)  Display rate, grosspay  Totalgrosspay = totalgrosspay + grosspay  Do you want to continue with this program? | Lastname  Hrs  Payrate  grosspay |
| jobcode |  | Total grosspay |
| hrsworked | Display totalgrosspay |  |

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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| Input | Process | Output |
| Prompt (y/n) | Comptuition(credithrs, districtcode)  mpg = miles/gallons  If districtcode = I  Rate = 250  Elif districtcode = O  Rate = 550  Else  Rate = 0  Tuition = credithrs \* rate  Return tuition | Lastname  tuitionowed |
| lastname | Main  Totaltuition = 0  Do you want to do this program (yes or no)  While (yes)  Input lastname, credithrs, districtcode  tuition = comptuition(credithrs, hrsdistrictcode  Display tuition  Totaltuition = totaltuition + tuition  Do you want to continue with this program? |  |
| credithrs |  | Totaltuition |
| districtcode | Display totaltuition |  |