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.

|  |  |  |
| --- | --- | --- |
| INPUT | PROCESSING | OUTPUT |
| Qtty | FcompExtPrice (qtty,price)  Extprice= qtty\*unitprice    If extprice>10,000  Discamnt = extprice\*0.1  Else  Discamnt = 0  NewExtPrice = extprice-discamnt  Return newExtprice | Extprice |
| Price | Main  ttlExtPrice= 0  Doyou want to run this program Y or N  While Yes  Input qty, price  Extprice = FcompExtPrice(qty,price)  Display extprice  Ttlextprice = ttlextprice + extprice  Doyou want to continue with this program | ttextprice |
|  |  |  |
|  | Display ttlExtprice |  |
|  |  |  |



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.

|  |  |  |
| --- | --- | --- |
| INPUT | PROCESSING | OUTPUT |
| Lastname | Fbattavg (noofhits, noofab)  Batavg = noofhits/noofab  Return batavg | Noof players |
| Noofhits | Main  Count = 0  Do you want to run this program Y or N    While y  Input lastname, noofhits, noofab  Battavg = Fbattang (noofhits, noofab)  Count += 1  Display lastname, battang  Do you want to run this program |  |
| noofab |  |  |

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.

|  |  |  |
| --- | --- | --- |
| INPUT | PROCESSING | OUTPUT |
| Dest | Fmpg (milestrav, gallons)  mpg = milestrav/gallons  Return mpg | Noof entries |
| Milestrav | Main  Count = 0  Do you want to run this program Y or N    While y  Input dest, milestrav, gallons  Mpg= = Fmpg (milestrav, gallons)  Count +=1  Display dest, milestrav,mpg  Do you want to run this program |  |
| gallons |  |  |

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.

|  |  |  |
| --- | --- | --- |
| INPUT | PROCESSING | OUTPUT |
| lastname | Fpayrate (jobcode)  If jobcode==L  return 25  If jobcode = A  return 30  If jobcode = J  return 50  else  return 0  def fgross\_pay(hours\_worked, pay\_rate):  if hours\_worked <= 40:  grosspay= hours\_worked \* pay\_rate  else:  gross pay = hours\_worked - 40  return (40 \* pay\_rate) + (overtime\_hours \* pay\_rate \* 1.5)  return grosspay | ttlgrosspay |
| Jobcode | Main  ttlgrosspay= 0  Doyou want to run this program Y or N  While Yes  Input lastname, jobcode,hours  grosspay = fgross\_pay(hours\_worked, pay\_rate):  Display lastname,grosspay  ttlgrosspay= ttgrosspay+grosspay  Doyou want to continue with this program |  |
| hours |  |  |
|  | Display ttlgrosspay |  |

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.

|  |  |  |
| --- | --- | --- |
| INPUT | PROCESSING | OUTPUT |
| Lastname | Ftutition(hours,code)  If code == I/i  Tuition = hours\*250  If code == o/O  Tuition = hours\*550  Else  Tuition = 0  Return tuition | Ttltuitonowed |
| hours | Main  Tltuition owed = 0  Doyou want to run this program Y or N  While Yes  Input lastname,hours,code  Tuition = ftuition(hours,code)  Display lastname,tuition owed |  |
| code |  |  |