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 $10,000.00. Display quantity, price and total. Sum and display the extended price.

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| **Input** | **Process** | **Output** |
| Qty  price | **comptotal** receive qty, price as parameters  total=qty\*price  If total >10000  total=total\*0,10  Else  total=total  return total |  |
|  | Main  totextprice=0  Do you want to do this program (yes or Not)  While yes  Input qty, price  total = **comptotal**(qty,price)  Display qty, price, total  **totextprice**=totextprice+total  Do you want to do this program (yes or Not) | qty  price  total |
|  | Display extended price | 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** |
| Lastname  Numofhits  Atbats | **compbataverage** receive numofhits,atbats as parameters  Compute **bataverage**=numofhits **/** atbats  return bataverage |  |
|  | Main  numofplayers=0  Do you want to do this program (yes or no)  While yes  Input lastname, numofhits, atbats  **Compbataverage** = bataverage(numofhits, atbats)  Display lastname, Compbataverage  **numofplayers**=numofplayers+1 | Lastname  compbataverage |
|  | Display numofplayers | Numofplayers |

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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| **Input** | **Process** | **Output** |
| city  milestravelled  galonsused | **compmilespergallon**, receive parameters milestraveled and gallonsused.  Compute **milespergallon** = milestraveled **/**gallonsused  return milespergallon |  |
|  | Main  Do you want to continue?  While yes  Prompt the user to enter the city of destination, miles traveled, and gallons used  Call the function **compmilespergallon** and send the parameters **milestraveled** and **gallons used**.  Compute **numofentries** = numofentries +1  Display city, miles traveled, miles per gallon | City  Milestraveled  Milespergallon |
|  | Display the Number of Players Entered | numofentries |

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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| **Input** | **Process** | **Output** |
| Lastname  Jobcode  hoursworked | comppayrate, receive parameters jobcode and hoursworked  Ask if hoursworked greater than 40  make **overtime** equal to **hoursworked** minus 40  ask if jobcode is equal to “L”, make **valhour** equal to 25  else, ask if jobcode is equal to “A”, make **valhour** equal to 30  else, ask if jobcode is equal to “J”, make **valhour** equal to 50  else, return -1  Compute **payrate** by multiplying valhour by hoursworked  compute **payovertime** by multiplying **overtime** by (**valhour**\*0,5 )  Compute grosspay summing **payrate** to **payovertime**  Make totalgrosspay equal to zero |  |
|  | Main  Do you want to continue?  While yes  Prompt the user to enter the Employee lastname, job code and Hours Worked  Call the function **comppayrate** and send the parameters jobcode and hoursworked  if **grosspay** is greater than zero, display lastname and grosspay  Compute **totalgrosspay** by summing 1 to totalgrosspay  if **grosspay** is less than zero, display “job code invalid” | City  Milestraveled  Milespergallon |
|  | Display Total Gross Pay | 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** |
| Lastname  credithours  districtcode | comptuitionowed, receive parameters credithours and districtcode  ask if districtcode is equal to “I”, make **valcredit**  equal to 250  else, ask if districtcode is equal to “O”, make **valcredit** equal to 550  else, return -1  Compute **tuitionowed** by multiplying **valcredit**  by **credithours** |  |
|  | Main  Do you want to continue?  While yes  Prompt the user to enter the Student last name, Credit Hours, and District Code  Call the function **comptuitionowed**  and send the parameters credithours and districtcode  if **tuitionowed** is greater than zero, display lastname and tuitionowed  Compute **totaltuitionowed** by summing 1 to totaltuitionowed  if **tuitionowed** is less than zero, display “District Code  invalid” | Lastname  tuitionowed |
|  | Display Total Tuition Owed | totaltuitionowed |