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** | **Process** | **Output** |
| --- | --- | --- |
| Qty | CompExtPrice(qty,unitprice)  Extprice = qty \* unit price  If extprice > 10000  Discamt = extprice \* 0.1  Else  Discamt = 0  newExtPrice = extPrice – discamt  return newExtPrice | 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 Extprice  totalExtPrice = totalExtPrice + extprice  Do you want to continue with this program? | 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.

| **Input** | **Process** | **Output** |
| --- | --- | --- |
| Last name, number of hits, and at bats entered by the user. | -Use a function to calculate the batting average:  -Batting Average = Hits / At Bats   Return the average.   Display the player's last name and their batting average.  Keep track of how many players are entered. | Show the player's last name and batting average.  At the end, display how many players were entered. |

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** | **Process** | **Output** |
| --- | --- | --- |
| Destination city, miles traveled, and gallons used entered by the user. | - Use a function to calculate miles per gallon (MPG):  - MPG = Miles / Gallons  - Return the MPG value.  - Show the destination city, miles traveled, and MPG.  - Count how many trips are entered. | - Show the destination city, miles, and MPG for each trip.  - After all trips, display how many trips were entered. |

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** | **Process** | **Output** |
| --- | --- | --- |
| Employee’s last name, job code, and hours worked entered by the user. | - Use a function to get the pay rate based on the job code:  - L → $25/hr, A → $30/hr, J → $50/hr.  - Calculate gross pay:  - If hours worked > 40, apply time-and-a-half for overtime.  - Return the gross pay.  - Show the last name and the gross pay.  - Add up the total gross pay. | - Display the employee’s last name and gross pay.  - After processing all employees, show the total gross pay for everyone. |

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** | **Process** | **Output** |
| --- | --- | --- |
| Student’s last name, credit hours, and district code entered by the user. | - Use a function to calculate the tuition:  - If the district code is I (in-district), charge $250 per credit hour.  - If the district code is O (out-of-district), charge $550 per credit hour.  - Return the calculated tuition.  - Display the student’s last name and tuition owed. | - Show the student’s last name and how much tuition they owe.  - After processing all students, display the total tuition owed. |