Problem Set – More on Pass By Value Functions. Create an IPO for each of the problems below. Save the document with the IPO's and then upload to Blackboard. Next write code for the problems. Then upload the .cpp files to Blackboard.

1. Allow the user to enter a quantity and price, use ctl+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. Use another function to compute 10% discount if the total is over $10,0000.00 and 5% for any amount equal to or lower than $10,000.00. The second function should receive the total, check which discount rate to charge, compute discount amount and then compute the discount total (total – discount amount). It should return the discount total. Display total and discount total. Sum total and discount total and display at the end.

input	process	output
Quantity,price	Multiply quantity by price to get the total. If the total is more than $10,000, apply a 10% discount. Otherwise, apply a 5% discount. Subtract the discount from the total to get the final amount. Display the total, discount, and discounted total. Sum all totals entered before stopping.	Display total, discount amount, and discounted total

2. Enter players last name, number of hits and at bats at the keyboard, use ctl+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 (at bats / number of hits). Display last name and batting average. Give a count of the number of players entered and display the count after the loop.

input	process	output
Last name,hits, at-bats	Divide hits by at-bats to find the batting average. Display the player's last name and batting average. Keep a count of how many players were entered.	Each player's name and batting average, plus total number of players.

3. Enter the destination city, miles travelled and gallons used for a trip, use ctl+z to stop. Use a function to compute miles per gallon. Pass miles travelled and gallons used to the function. The function should return miles per gallon. Use another function to compute gas cost. Pass to this function gallons used. Each gallon costs $3.50. Compute and return the cost. Display destination city, miles per gallon and cost of gas. Sum and display the total cost of gas.

input	process	output
Destination city, miles traveled, and gallons of gas used.	Divide miles by gallons to find miles per gallon. Multiply gallons by $3.50 to get gas cost. Display city, miles per gallon, and cost. Keep a running total of all gas costs.	City, miles per gallon, trip cost, and total gas cost

4. Allow the employee to enter last name, job code and hours worked, use ctl+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 the following rates based on Job code: L is $25/hr, A is $30/hr and J is $50/hr for respective pay rates. Write another function to determine the gross pay. Pass to this function the hours worked and pay rate and return 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.	Determine pay rate from job code (L=$25/hr, A=$30/hr, J=$50/hr). If hours exceed 40, calculate overtime at 1.5× pay rate. Add regular pay and overtime to find gross pay. Display last name and gross pay. Keep a total of all employees' gross pay.	Employee name, gross pay, and total of all gross pay.

5. Allow the user to enter student last name, credit hours and district code, use ctl+z to stop. Use a function to compute tuition owed. First, write a function to determine the cost per credit hour. Charge In district (code of I) $250 per credit hour. Out of district (code of O) is $550 per credit hour. Write another function to compute tuition cost. Display student name and tuition cost. Sum and display total of all tuition costs.

input	process	output

Student's last name, number of credits, and district code.	Use $250 per credit for in-district and $550 for out-of-district students. Multiply credits by the correct rate to get tuition. Display student name and tuition cost. Keep a running total of all tuitions.	Student name, tuition cost, and total tuition.