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	total = quantity x price	Total
price	If total > 10000, discount = total x 0.10	Discount total
	If total ≤ 10000, discount = total x 0.05	Sum of all totals
	discounted total = total - discount	
	sum totals = total + 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	batting average = hits / at bats	Last Name
Number of hits	count = count + 1	Batting Average
At bats		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 per gallon = miles / gallons	Destination City
Miles Traveled	gas cost = gallons x 3.50	Miles Per Gallon
Gallons Used	total gas cost = total gas cost + gas cost	Cost of Gas
		t otal 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**
Last name	If job code = L, rate = 25 If job code = A, rate = 30 If job code = J, rate = 50	Last Name

Job code	If hours > 40, overtime hours = hours - 40 overtime pay = overtime hours x (rate x 1.5)	Gross pay
Hours worked	regular pay = (hours - overtime hours) x rate	Total gross pay
	gross pay = regular pay + overtime pay	
	total gross pay = total gross pay + 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 Last Name	If code = I, cost per hour = 250 If code = O, cost per hour = 550	Student Last Name
Credit Hours	tuition = credit hours x cost per hour	Tuition Cost
District Code	total tuition = total tuition + tuition	Total Tuition Cost