Session Advanced Functions – Create IPO Chart and code for each problem below.

1. The input consists of quantity, price and discount rate. Use a function to compute the discount amount and discounted price. Then display these values in main along with the quantity and price. (The function should return both discount amount and discounted price).

Input	Process	Output
qty = int(input("The amount of the item: ")) price = int(input("The price of the item: ")) discountrate = float(input("What is the discount amount: "))		

Function takes inputs	def process(qty, price, discountrate):
	  extprice = qty * price
	  discountamt = extprice * discountrate
	  discountprice = extprice - discountamt
	  return discountprice, discountamt
		discountprice, discountamt = process(qty,price,discountrate)

		print("The amount of items you purchased",qty) print("The price per item is $",price) print("The amount of money saved $", discountamt,) print("The discounted price $ $", discountprice)

2. Enter the student's last name and 3 exam scores. Use a function to compute the average and total points. This functions should return both total points and exam score. Display student last name, total points and average exam score.

Input	Process	Output
lname = str(input("Enter your last name: ")) exam1 = int(input("Enter your first exam score: ")) exam2 = int(input("Enter your second exam score: "))		

exam3 = int(input("Enter your third exam score: "))		

Funtion taking inputs	def process(exam1, exam2, exam3):
	  totalpoints = exam1+exam2+exam3
	  avg = totalpoints/3
	  return totalpoints,avg
		totalpoints, avg = process(exam1, exam2, exam3)

Print outputs		print("Last name: ", lname) print("Total points: ", totalpoints) print("Average exam score: ", avg)

3. Produce a sales report. Input salesperson last name and sales. Write a function that compute commission which is 10% for sales over $100, 000 and 5% for sales at or under $100,000. The function should also computer next year's target which is 5% of the sales. This function should return both commission and next year's target. Display salesperson name, commission and next year's target.

Input	Process	Output
lname = input("Enter the salesperson's last name: ") sales = float(input("Enter the amount of sales: "))		

Function taking inputs	def process(sales):
	  if sales > 100000.00:
	  commission = sales * 0.10
	  else:
	  commission = sales * 0.05
	
	  nextyearstarget = sales * 0.05
	  return commission,nextyearstarget
		commission,nextyearstarget = process(sales)

Print outputs		print("Salesperson's last name: ",lname) print("Commission: $",commission) print("Next years target: $",nextyearstarget)

4. Enter bowler last name, 3 game scores and handicap. Write a function to compute average score and average score with handicap. Back in main, display last name, average score and average score with handicap.

Input	Process	Output
lname = input("Enter bowler's last name: ") game1 = float(input("Enter game 1 score: ")) game2 = float(input("Enter game 2 score: ")) game3 = float(input("Enter game 3 score: ")) handicap = float(input("Enter handicap: "))		

Funcion takes inputs and returns values	def process(game1, game2, game3, handicap):
	  average = (game1 + game2 + game3) / 3
	  averagehandicap = (game1 + game2 + game3 + handicap) / 3
	  return average, averagehandicap
		average, averagehandicap = process(game1, game2, game3, handicap)

		print("Bowler's last name: ", lname) print("Average score: ", average) print("Average score with handicap: ", averagehandicap)

5. Allow the user to enter quantity of an item and unit price. Write a function to compute total (qty * unit price) and tax (7% of total). Demonstrate your knowledge of global variables by making total and tax global in scope. Display total and tax in main.

Input	Process	Output
qty = int(input("What is the quantity? ")) unitprice = float(input("What is the unit price? ")) tax = 0		

total = 0 (set to 0 to make global)		

Function takes inputs and returns values	def process(qty, unitprice):
	  global total, tax
	  extprice = qty * unitprice
	  tax = extprice * 0.07
	  total = extprice + tax
	  return total, tax
		total, tax = process(qty, unitprice)

		print("The total is $", total) print("The tax is $", tax)