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**
Function	Def amount(P, D): A= float(P) * float(D) Dprice = float(P) - amount Return Dprice, A	Discount amount & price
Code	Q = float(input)("Enter the quantity: ") P = float(input)("Enter the price: ") D = float(input)("Enter the discounted price: ") A = amount(P, D) Dprice = amount(P, D)	Quantity Price Discounted rate
Display	Print("Quantity: ", Q) Print ("Original price: ", P) Print("Discounted Rate: ", D) Print("Discount amount: ", A) Print("Discounted price: ", Dprice)	Quantity price Discounted rate Amount Discounted price

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
Function	Def avg (First, Second, Third): Total = float(First) + float(Second) + float(Third) Avg = Total / 3 Return Total, Avg	Total Avg
Code	Name = input("Enter students last name: ") First = float(input("First exam score: ")) Second = float(input(" Second exam score: ")) Third = float(input("Third exam score: "))	Last name First score Second score Third score
Display	print("Last name: ", Name) print("Total points: ", total print("Average score: ", avg)	Last name Total points Average score

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
Function	Def commission(sales): If sales >= 100000: Percent = .10 Else Percent = .05 First = float(sales) * percent Second = first * 0.05 Return First, Second	Commission This year Next year

Input	Process	Output
Code	Name = input("Enter last name: ") Sales = float(input("Enter sales: ")) First = commission(sales) Second = commission(sales)	Last name Sales
Display	print("last name: ", name) print("This year sales: ", First) print("Next year sales: ", Second)	Lastname This year sales Next year sales

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

Function Def average(First, Second, Third, Handicap):
Total = float(First) + float(Second) + float(Third)
Avg = total / 3
AvgHandicap = avg / Handicap

Return Avg, AvgHandicap
Average
Average with Handicap

Code	Name = input("Enter bowler last name: ") First = float(input("Enter first game score: ")) Second = float(input("Enter second game score: ")) Third = float(input("Enter third game score: ")) Handicap = float(input("handicap percent: ")) Avg = average(First, Second, Third, Handicap) AvgHandicap = (First, Second, Third, Handicap)	Last name 3 game score Handicap
Display	print("Lastname: ", name) print("average: ", avg) print("Average with handicap: " , Handicap)	Lastname Avg Handicap Avg

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
Function	T = Q * P Def total(Q, P): T = float(Q) * float(P)	Total Tax
Code	Q = input("Enter quantity of the item: ") P = int(input("Enter the Unit price of the item: ")) T = total(Q, P) Tax = total(Q, P)	Quantity Unit price

Input	Process	Output
Display	print("Total is: ", T) Print("Tax is: ", tax)	Total Tax