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).

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| Input | Process | Output |
| Quantity | #function  Def compute(quantity, price, discount rate)  Discounted price = price – (price \* discount rate)  Discount amount = quantity \* discounted price  Return discounted price, discount amount | Quantity |
| Price | #main  Quantity = input  Price = input  Discount rate = input  Discount amount, discounted price = compute(quantity, price, discount rate)  Quantity = print  Price = print  Discount amount = print  Discounted price = print | Price |
| Discount rate |  | Discount amount |
|  |  | Discount price |

1. 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.

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| Input | Process | Output |
| Last name | #function  Def compute(exam one, exam two, exam three)  Total points = exam one + exam two + exam three  Average score = total points / 3  Return average score, total points | Last name |
| Exam one | #main  Last name = input  Exam one = float(input)  Exam two = float(input)  Exam three = float(input)  Average score, total points = compute(exam one, exam two, exam three)  Print(last name)  Print(total points)  Print(average score) | Total points |
| Exam two |  | Average score |
| Exam three |  |  |

1. 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.

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| Input | Process | Output |
| Last name | #Function  Def compute(sales):  If sales > 100,000.00  Commission = sales \* 0.10  Else  Commission = sales \* 0.05  Next year target = sales \* 0.05  Return commission, next year target | Last Name |
| Sales | #main  Last name = input  Sales = float(input)  Commission, next year target = compute(sales)  Print(last name)  Print(commission)  Print(next year target) | Commission |
|  |  | Next Year Target |

1. 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.

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| Input | Process | Output |
| Last name | #Function  Def compute(score one, score two, score three, handicap)  Average score = (score one + score two + score three) / 3  Average score handicap = average score \* handicap  Return average score, average score handicap | Last name |
| Score one | # main  Last name = input  Score one = float(input)  Score two = float(input)  Score three = float(input)  Handicap = float(input)  Average score, average score handicap = compute(score one, score two, score three, handicap)  Print last name  Print average score  Print average score handicap | Average score |
| Score two |  | Average score handicap |
| Score three |  |  |
| Handicap |  |  |

1. 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.

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| Input | Process | Output |
| Quantity item | #function  Def compute(quantity\_item, unit price)  Global total  Total = quantity item \* unit price  Global tax  Tax = total \* 7%  Return total, tax | Total |
| Unit price | #main  Quantity item = int(input)  Unit price = float(input)  Total, tax = compute(quantity item, unit price)  Print(total)  Print(tax) | Tax |