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 |
| Qty |  |  |
| Price | Get qty,price,discamt  Call compute\_disc  Input:qty,price,discrate  Return/update:  Discamt,discprice  Extprice=qty\*price  Discamt=extprice\*discrate  Discpricea=extprice-disamt | Qty  Price  Discamt  discprice |
| discrate |  |  |
|  | Display qty,price,discamt,discprice |  |
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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 |
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| Lname | Get lname,s1,s2,s3 |  |
| S1,s2,s3 | Call computepoints(s1,s2,s3) | Lname  Total  avgscore |
|  |  |  |
|  | Dislay lname,total,avgscore |  |
|  |  |  |
|  | Computepoints  Input: s1,s2.s3  Return: total,avgscore  Total=s1+s2+s3  Avgscore=total/3 |  |

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 |
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| Salespersons last name | Get salesperson’s last name from the user | Show salesperson’s last name |
| Sales amount | Get sales amount from the user | Show commission amount |
|  | Check the sales amount:  If sales are more than $100,000, commission = 10% of sales  Otherwise, commission = 5% of sales | Show next year’s target |
|  | Calculate next year’s target as 5% of sales |  |
|  | Show salesperson’s last name, commission, and next year’s 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 |
| Bowler’s last name | Get bowler’s last name from user | Show bowler’s last name |
| Game 1 score | Get three game scores from the user | Show average score |
| Game 2 score | Get handicap from the user | Show average score with handicap |
| Game 3 score | Compute average score: (Game 1 + Game 2 + Game 3) ÷ 3 |  |
| Handicap | Compute average score with handicap: Average score + Handicap |  |
|  | Show bowler’s last name, average score, and average score with 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 of item | Get quantity of the item from the user | Show total cost |
| Unit price | Get unit price from the user | Show tax amount |
|  | Compute total: Total = Quantity × Unit Price |  |
|  | Compute tax: Tax = 7% of Total |  |
|  | Use global variables for total and tax |  |
|  | Show total and tax in main |  |