**CIS 106 – Problem Set 10 – IPO Charts**

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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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
| Quantity  Price  discountRate | **compute\_discount** (quantity, price, discountRate)  Extendedprice = quantity \* price  discountAmount = extendedprice \* discountRate  discountedPrice = extendedprice – discountAmount  Return: discountAmount, discountedPrice | Quantity  Price |
|  | **Main**  Call function: compute\_discount (quantity, price, discountRate)  Input: Quantity, Price, discountRate  Display: Quantity, Price, discountAmount, discountedPrice | discountAmount  discountedPrice |

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

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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
| lastname  exam1  exam2  exam3 | **Exam\_average** (exam1, exam 2, exam3)  Exampoints = exam1 + exam2 + exam3  Total = 300  Average = (exampoints / total) \* 100  Return: exampoints, average | lastname |
|  | **Main**  Call function: exam\_average (exam1, exam 2, exam3)  Input: lastname, exam1, exam 2, exam3  Display: lastname, exampoints, average | exampoints  average |

1. Produce a sales report. Input the salesperson’s last name and sales. Write a function that computes 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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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
| lastname  salesamount | **salesForecast** (salesamount)  CommissionRate = 0.0  If salesamount > 100,000: CommissionRate = 0.10  Else If salesamount <= 100,000: CommissionRate = 0.05  Commission = salesamount \* CommissionRate  nextyearSales = salesamount \* 1.05  Return: Commission, nextyearSales | lastname |
|  | **Main**  Call function: salesForecast (salesamount)  Input: salesamount  Display: lastname, Commission, nextyearSales | Commission  nextyearSales |

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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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
| lastname  gamescore1  gamescore2  gamescore3  handicap | **computeBowlingAverage** (gamescore1, gamescore2, gamescore3, handicap)  sum = gamescore 1 + gamescore2 + gamescore3  Average = sum / 3  handicapAverage = (sum + handicap) / 3  Return: Commission, nextyearCommission | lastname |
|  | **Main**  Call function: computeBowlingAverage (gamescore1, gamescore2, gamescore3, handicap)  Input: lastname, gamescore1, gamescore2, gamescore3, handicap  Display: lastname, Average, handicapAverage | Average  handicapAverage |

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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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
| quantity  price | **computeTotal** (quantity, price)  global total  total = quantity \* price  global tax  tax = total \* 0.07  Return: |  |
|  | **Main**  total = 0.0  tax = 0.0  Call function: computeTotal (quantity, price)  Input: quantity, price  Display: total, tax | total  tax |