**CIS 106 – Problem Set 8 – IPO Charts**

Prepare an IPO chart for each problem. Then write the code for each. Save the IPO within this document and upload it to your repository. After the code is complete upload the files (.py) to your repository. Paste the link to your repository into the assignment completion link in Blackboard.

1. Allow the user to enter a quantity and price, use Ctl+z to stop. Use a function to compute the total (quantity times price). The function should be passed the quantity and price and then return the total. In the function, provide a 10% discount if the total is over $10,0000.00. Display quantity, price and total. Sum and display the extended price.

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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
|  | **ComputeExtendedPrice** (QTY, UnitPrice)  ExtendedPrice = QTY \* UnitPrice  DiscountAmount = ExtendedPrice \* 0.1 if ExtendedPrice > 10000.0 else 0.0  ExtendedPrice = ExtendedPrice - DiscountAmount  return ExtendedPrice |  |
| QTY |  | ExtendedPrice |
| UnitPrice | **Main**  TotalExtendedPrice = 0.0  Do you want to compute the extended price? (Yes or No)?  While (Yes)  Input QTY, Price  ExtendedPrice = ComputeExtendedPrice (QTY, UnitPrice)  display QTY,UnitPrice, ExtendedPrice  TotalExtendedPrice = TotalExtendedPrice + ExtendedPrice  Do you want to compute the extended price? (Yes or No)? | QTY  UnitPrice  ExtendedPrice |
|  |  |  |
|  | display TotalExtendedPrice | TotalExtendedPrice |
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1. Enter players last name, number of hits and at bats at the keyboard, use Ctl+z to stop. Use a function to compute batting average. Pass the hits and at bats to the function. The function should return batting average. Display last name and batting average. Give a count of the number of players entered.

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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
|  | **ComputeBattingAverages** (PlayerHits, PlayerAtBats)  PlayerBattingAverage = PlayerHits / PlayerAtBats  return PlayerBattingAverage |  |
| PlayerLastName |  | PlayerBattingAverage |
| PlayerHits  PlayerAtBats | **Main**  NumberPlayers = 0  Do you want to compute the player's batting average? (Yes or No)?  While (Yes)  Input PlayerHits, PlayerAtBats  PlayerBattingAverage = ComputeBattingAverage(PlayerHits, PlayerAtBats)  display PlayerLastName, BattingAverage  NumberPlayers = NumberPlayers + 1  Do you want to compute another player's batting average? (Yes or No)? | PlayerLastName  BattingAverage |
|  |  |  |
|  | display NumberPlayers | NumberPlayers |
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1. Enter the destination city, miles travelled, and gallons used for a trip, use Ctl+z to stop. Use a function to compute miles per gallon. Pass miles travelled and gallons used to the function. The function should return miles per gallon. Count the number of entries made (number of trips) Display destination city, miles, and mpg. Display the number of entries made at the end.

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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
|  | **ComputeMPG (Miles, Gallons)**  MPG = Miles / Gallons  return MPG |  |
|  |  | MPG |
| DestinationCity  Miles  Gallons | **Main**  TripsNumber = 0  Do you want to compute the MPG of a trip? (Y/N)  While (Y)  Input DestinationCity, Miles, Gallons  ComputeMPG(Miles, Gallons)  display DestinationCity, Miles, MPG  TripsNumber = TripsNumber + 1  Do you want to compute the MPG of another trip? (Y/N) | DestinationCity  Miles  MPG |
|  |  |  |
|  | display TripsNumber | TripsNumber |
|  |  |  |
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1. Allow the employee to enter the last name, job code and hours worked, use Ctl+z to stop. Use a function to determine the pay rate. Pass to this function the job code and it should return rate of pay. Use Job code L is $25/hr, A is $30/hr and J is $50/hr for respective pay rates. Compute the gross pay. Give time and a half for overtime. Display last name and gross pay. Sum and display total of all gross pay.

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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
|  | **ComputePayRate (JobCode)**  if JobCode == "L":  PayRate = 25  Else if JobCode == "A":  PayRate = 30  Else if JobCode == "J":  PayRate = 50  return PayRate | PayRate |
|  |  |  |
| EmployeeLastName  HoursWorked  JobCode | **Main**  TotalGrossPays = 0.0  Do you want to compute an employee's gross pay? (Y/N) While (Y)  Input EmployeeLastName, HoursWorked, JobCode  ComputePayRate(input("Enter Job Code: "))  GrossPay = HoursWorked \* PayRate  display EmployeeLastName, GrossPay  TotalGrossPays = TotalGrossPays + GrossPay  Do you want to compute another employee's gross pay? (Y/N) | EmployeeLastName  GrossPay |
|  |  |  |
|  | display TotalGrossPays | TotalGrossPays |
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1. Allow the user to enter student last name, credit hours and district code, use Ctl+z to stop. Use a function to compute tuition owed. Charge In district (code of I) $250 per credit hour. Out of district (code of O) is $550 per credit hour. The function should receive credit hours and district code and return tuition owed. Display student name and tuition owed. Sum and display total of all tuition owed.

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| **INPUTS** | **PROCESSES** | **OUTPUTS** |
|  | **ComputeTuition (CreditHours, DistrictCode)**  if DistrictCode == "I":  Tuition = CreditHours \* 250  Else if DistrictCode =="O":  Tuition = CreditHours \* 550  return Tuition | Tuition |
|  |  |  |
| StudentLastName  CreditHours  DistrictCode | **Main**  TotalTuition = 0.0  Do you want to compute a student's tuition? (Y/N)  While (Y)  Input StudentLastName, DistrictCode  ComputeTuition(CreditHours, DistrictCode)  display StudentLastName, Tuition  TotalTuition = TotalTuition + Tuition  Do you want to compute another student's tuition? (Y/N) | StudentLastName  Tuition |
|  |  |  |
|  | display TotalTuition | TotalTuition |
|  |  |  |
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