CIS 106 – Loops Part 2

Do the code for each of the following problems.

1. Allow the user to enter a principle amount and interest rate repeatedly (need a loop to control the program execution). Compute the annual interest (principle x rate). Compute ending balance to be principle (beginning balance + interest). Display year, beginning balance and ending balance for each of the 5 years. Display the accumulated interest for the 5 years. Note: the new balance by year (this will be the principle for the following year. Format the output. (DONE)

Example:

Enter principle amount: 10000.00

Enter interest rate: 0.10

Year Beginning Ending
Balance Balance

1. $10,000.00 $11,000.00
2. $11,000.00 $12,100.00
3. $12,100.00 $13,310.00
4. $13,310.00 $14,641.00
5. $14,641.00 $16,105.00

Total interest earned: $6,156.00

2. Fibonacci sequence is a sequence of natural order. The sequence is:

   1, 1, 2, 3, 5, 8 etc

   Use of for loop compute and display first 20 numbers in the sequence. Hint: start with 1 ,

   1. (DONE)

3. Create a text file that contains employee last name and salary. Read in this data. Determine the bonus rate based on the chart below. Use that rate to compute bonus. For each line display the employee last name, salary and bonus. After the loop display the sum of all bonuses paid out.

Salary Bonus Rate
100,000.00 and up 20%

50,000.00 15%

All other salaries 10%

Example file (create your own data with at least 5 lines:

Adams

50000.00

Baker

75000.00

Smith

45000.00

Etc

Input Salary Lastname	Process Get Lastname Get salary	Output
Data1.txt	Adams 50000.00 Baker 75000.00 Smith 45000.00 Christian 30000.00 John 15000.00	All the data text that is input into the Dcode

Dcode	F = open(“Data1.txt”, “r”) Lastname = f.readline() S = f.readline If s >= 100000.00: B = .20 Elif s == 50000.00 B = .15 Else: B = .10 Totalb = b Print(b) Print(totalb)	Last name Salary
Display	Display lastname Display bonus Display salary	

4. Create a text file with item, quantity and price. Read through the file one line at a time. Compute the extended price (quantity x price). For each line display the item, quantity, price and extended price. After the loop display the sum of all the extended prices, the count of the number of orders and the average order.

Example Data File

Widget

10

50

Hammer

2

10

Saw

4

8

Etc

Input	Process Count = 0	Output
Data1.txt	Widget 10 50 Hammer 2 10 Saw 4 8 Screwdriver 3 5 Paper 10 1	Data text that gets input into dcode
dcode	F = open(“Data1.txt”, “r”) Item = f.readline While item =! “ “: Q = f.readline Count = Q If Q =! “ ”: P = f.readline Avg = count / 5 Eprice = P * Q	Item Quantity Price Extended price Avg Count
Display	Display count Display Q Display P Display Eprice Display avg Display count	

5. Create a text file with student last name, district code (I or O) and number of credits taken. Compute tuition owed (credits taken x cost per credit). Cost per credit for in district students (district code I) is 250.00. Out of district students pay 500.00 per credit. For each line display student last name, credits taken and tuition owed. After the loop display sum of all tuition owed and the number of students.

Example file

Jones

I

12

Adams

I

10

Baker

O

12

Smith

O

16

Inputs	Process C = 0 Totaltuition = 0	Outputs
Last name	Get lastname	

Dcode	While not at end Get Dcode, credits If Dcode = 'I' Costpercredit = 250 Else Costpercredit = 500 Tuition = costpercredit * credit C = c + 1 Totaltuition = totaltuition + tuition Display tuition, credits, Get next lastname	Lastname Credit Tuition Totaltution
Credits		
	Display totaltuition Display C	