Compound Relational Operators and Nested Selection Logic Assignment.

1. Develop Florgorithm and code for this problem. You are to determine service level awards for length of service working for an organization (see table below). Write a function that receives years of service and returns the service award. Display service level award.

Years of Service Service Award

>10 1,000

5 to 10 500.00

All other 100.00

def funaward(yos):

if yos > 10:

award = 1000

else:

if yos >= 5:

award = 500

else:

award = 100

return award

# Main

print("Enter years of service", end='', flush=True)

yos = float(input())

award = funaward(yos)

print("Award Amount is $" + str(award))

1. Develop psuedocode and code for this problem. The problem is to allow the user to enter a quantity of items ordered. The price is determined by a quantity the order (see table below). They will be given a better price for the higher the quantity they order. Use a function that receives the quantity and returns the unit price. Then calculate extended price using the price from the function. Display quantity ordered, unit price and extended price.

Volume Pricing Table

Quantity Unit Price

More than 1000 8.00

500 to 1000 10.00

All other (0 to 499) 12.00

1. Develop pseudocode and code for this problem. The users will enter employee last name, job code and years of service. You will determine a bonus based on these two data items (see table below). Use a function to determine the employee’s bonus. The function should receive the job code and years of service and return the bonus amount. Display employee last name and bonus.

Bonus Table

Job Code Years of Service Bonus

A >10 10,000

A 5 years to 10 years 8,000

B >15 9,000

All other All other 5,000

1. Develop pseudocode and code for this problem. You are developing a program that provide CD interest rates based on the term. Terms of 5 or 10 years receive 2% rate. Terms of 1, 2, 3 receive 1%. All other terms receive .5% The user will enter the term and a function will be used to determine the interest rate. Display term and interest rate.

Examples.

1. Develop a program to determine the interest rate on a money market account. The rate is dependent on the amount in the account. Use a function that receives the amount and returns the interest rate. See table below. Calculate the simple interest for one year (amount x rate). Display amount , interest rate and interest amount for year 1.

Money Market Interest Rate Table

Amount Interest Rate

>10,000 3%

5,000 to 10,000 2%

All other 1%

1. You are to develop a program that determine interest rate based on amount and term. Use a function that receives the amount and term and returns the interest rate (see table below). Display the amount, term and interest rate.

Interest Rate Table

Amount Term(Yrs) Rate

>10,000 10 or more 5%

5,000 to 10,000 5 or more 4%

All other All other 2%

|  |  |  |
| --- | --- | --- |
| Input | Process | Output |
|  |  |  |
| amount | Fun\_IR(amount, term)  If amount>10000 and term>=10  IR=0.05  Elseif amount>=5000 and term>=5  IR=0.04  Else  IR=0.02  Return IR | Amount  Term  IR |
| term |  |  |
|  | Display amount, term, IR |  |
|  |  |  |
|  |  |  |
|  |  |  |

def fun\_IR(amount, term):  
 if float(amount) >=10000 and float(term) >=10:  
 IR = 0.05  
 elif float(amount) >= 5000 and float(term) >=5:  
 IR = 0.04  
 else:  
 IR = 0.02  
  
 return IR  
  
 amount = input(**"Enter amount to invest"**)  
 term = input(**"Enter term in years"**)  
  
 *#calling statement* IR = fun\_IR(amount, term)  
  
 print(**"Interest Rate"**, IR\*100, **"%"**)