CIS 121 Introduction to Programming

Problem Set – Nested If and compound relational conditions. For each problem create an IPO chart and c++ code file.

1. The input to the problem is quantity of widgets and customer status. You set the price based upon quantity and status using the table below. Your program should determine the price to charge based on the schedule below. Calculate the extended price. Calculate tax at 7%. Display the extended price, tax amount and total.

Quantity Status Price

>10000 A $10

>10000 B $12

5000 to 10000 C $20

5000 to 10000 D $22

Below 5000 Any $30

|  |  |  |
| --- | --- | --- |
| Input | Process | Output |
| quantity\_widgets | if >10000 && A = 10 | extended\_price |
| customer\_status | else if >10000 && B = 12 | final\_price |
|  | so on and so forth | tax\_amount |
|  | go through a 7% tax |  |
|  |  |  |

1. Enter a part number of the following (10, 99, 55, 70, 50). Also enter the quantity. Determine the cost per unit using the table below. Then calculate the total cost. Display the part number, cost per unit and total.

**Part Quantity Cost Per Unit**

* + - 1. > 1000 1.00

1. > 500 2.00

All others All others 5.00

|  |  |  |
| --- | --- | --- |
| Input | Process | Output |
| number | If number == 10 && quantity > 1000 then cost\_per\_unit = 1.00 | Total\_cost |
| quantity | So on and so fort | number |
|  |  | Cost\_per\_unit |
|  |  | Final\_total |
|  |  |  |

1. Allow the user to enter number of concert tickets and location code (H, L). The price per ticket depends on the volume and location (see below). Display the number of tickets, price per ticket and the total cost.

Volume is greater than 25 or location is H cost per ticket is $30.00

Volume is greater than 10 (10 to 24) or location is L cost per ticket is $40.00

All other quantities or locations are $50.00

|  |  |  |
| --- | --- | --- |
| Input | Process | Output |
| num\_tickets | If number of tickets > 25 OR location == H then price = 30 | Num\_tickets |
| Location\_code | Else if number of tickets between 10–24 OR location == L then price = 40 | Price\_per\_ticket |
|  | Else then price = 50 | Total\_cost |
|  | Calculate total cost = number of tickets × price |  |
|  |  |  |

1. Allow the user to enter equipment code of a rental and a code indicating half day or full day. Determine the cost of the rental. Display the rental cost

Equipment Code Day Cost

A F 10.00

A H 15.00

B F 20.00

B H 35.00

C H 40.00

C F 45.00

All others All others 50.00

|  |  |  |
| --- | --- | --- |
| Input | Process | Output |
| Equipment\_code | If equipment\_code == A && day\_code == f then cost = 10.00 | Cost\_of\_rental |
| Day\_code | So on and so forth |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. You need to display the gross salary for an employee. They input a job code and Hours. First, determine the rate of pay based on job code and hours (see table below). Next, compute gross pay (hrs \* rate). No overtime pay.

Job Code Hours Rate of Pay

L > 40 50.00

L <=40 40.00

J >60 100.00

J <=60 75.00

A >40 25.00

A <=40 20.00

|  |  |  |
| --- | --- | --- |
| Input | Process | Output |
| Job\_code | If job code == L && hours > 40 then pay\_rate = 50.00 | Pay\_rate |
| hours | So on and so forth | gross |
|  | Gross = hours \* pay\_rate |  |
|  |  |  |
|  |  |  |