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 of widgets	If quantity is greater than 10000 and status is A then price = 10	extended price
customer status	Else if quantity is greater than 10000 and status is B then price = 12	tax amount, total
	Else if quantity is between 5000 and 10000 and status is C then price = 20	
	Else if quantity is between 5000 and 10000 and status is D then price = 22	
	Else price = 30	
	Extended price = quantity times price	
	Tax = extended price times 0.07	
	Total = extended price plus tax	

2. 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**

10	> 1000	1.00
99	> 500	2.00
All others	All others	5.00

Input	**Process**	**Output**
part number	If part is 10 and quantity is greater than 1000 then cost per unit = 1.00	part number
quantity	Else if part is 99 and quantity is greater than 500 then cost per unit = 2.00	cost per unit
	Else cost per unit = 5.00	total cost
	Total cost = quantity times cost per unit	

3. 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**
number of tickets,	If volume is greater than 25 or location is H then price per ticket = 30.00	number of tickets
location code (H or L)	Else if volume is greater than 10 or location is L then price per ticket = 40.00	price per ticket

	Else price per ticket = 50.00	total cost
	Total = number of tickets times price per ticket	

4. 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 (A, B, C, or other)	If equipment code is A and rental is F then cost = 10	rental cost
rental day code (H or F)	If equipment code is A and rental is H then cost = 15	
	If equipment code is B and rental is F then cost = 20	
	i f equipment code is B and rental is H then cost = 35	
	If equipment code is C and rental is H then cost = 40	
	If equipment code is C and rental is F then cost = 45	
	Else cost = 50	

5. 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 (L, J, A)	If job code is L and hours are greater than 40 then rate = 50	gross pay
hours worked	Else if job code is L and hours are less than or equal to 40 then rate = 40	
	If job code is J and hours are greater than 60 then rate = 100	
	Else if job code is J and hours are less than or equal to 60 then rate = 75	
	If job code is A and hours are greater than 40 then rate = 25	
	Else if job code is A and hours are less than or equal to 40 then rate = 20	
	Gross pay = hours times rate	