

CIS 121 Introduction to Programming
Problem Set 3 – sequential code and the if statement

1. Allow a user to enter a quantity of an item. If the quantity is greater than or equal to 1000, the unit price should be \$3.00. For quantities under 1000 the unit price is \$5.00. Compute extended price to be quantity x unit price. Compute tax to be 7% of the extended price. The total is computed as extended price plus the tax. Display the quantity, unit price, extended price, tax and total.

Input	Process	Output
Quantity of item	Read quantity from	Show quantity of
	Determine unit price	Show unit price
	If quantity \geq 1000, unit price is \$3	Show extended price
	Else, unit price is \$5	Show tax
	Compute the	Show total
	Extended price = quantity times unit	
	Compute tax	
	Tax = 7% of the extended price	
	Compute total	
	Total = Extended	

2. The program asks the user for an item and quantity. Determine the unit price of the item based on the chart below. Compute the extended price to be quantity x unit price. Display the item, unit price and extended price. Note: if the item entered is not A then assume the item is B. No need to check for B.

Item	Unit Price
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A	\$10.00
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B	\$20.00
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Input	Process	Output
Item (string)	Read item from	Show Item
Quantity (integer)	Read quantity from	Show unit price
	Determine unit	Show extended
	If item is "A", unit price is \$10	
	Else, (assume item is "B") unit price is	
	Compute extended	
	Extended price = quantity times unit	

3. Enter the number of books to order and cost per book. If the order total is over \$50.00 shipping is free. If the order total is \$50.00 or under charge \$25 shipping. Display the order total and shipping charge (note 0 should display for a free shipping charge).

Input	Process	Output
# of books (float)	Read the # of books to order for the user	Show order total
Cost per book (integer)	Read the cost per book from user	Show shipping charge
	Compute the order	
	Order total = Cost per book times # of	
	Determine the shipping charge	

	If order total > \$50, shipping charge is \$0	
	Else, shipping charge	
	Compute final total, (order total +	

4. The warrantee of an appliance depends on the cost of the appliance. For appliances over \$1,000 the warrantee cost is 10% of the price. For appliances \$1,000 or less the warrantee cost is 5% of the price. The user will enter the name and cost of an appliance. Display name and cost of appliance, the cost of the warrantee and the total (cost of the appliance + warranty).

Input	Process	Output
Appliance name (string)	Read the name of the appliance from user.	Show the name of appliance
Cost of appliance (floating)	Read the cost from appliance from user	Show appliance cost
	Determine warrantee	Show cost of
	If cost of appliance > \$1000 warranty cost = 10% of price	Show total cost
	Else, warrantee cost = 5% of price.	
	Compute total cost	
	Total cost = cost of appliance +	

5. Enter the user's last name, number of dependents and gross income. Compute adjusted gross income to be gross income minus dependents times \$12000. Next determine an income tax rate. Adjusted gross incomes over \$50,000 have a tax rate of 20%. Adjusted gross incomes \$50,000 or under have a tax rate of 10%.

Once you determine the tax rate, compute income tax to be adjusted gross income times tax rate. If the income tax is less than 0, set the income tax to \$100.

Display last name, gross income, number of dependents, adjusted gross income, and income tax.

Input	Process	Output
User Last name	Read user Last name	Show last name
# of dependents	Read # of dependents	Show # of
Gross income (float)	Read gross income	Show gross income
	Compute adjusted gross income	Show adjusted gross income
		Show income tax
	Determine income	
	If adjusted gross income > \$50000, tax	
	Else, tax rate = 10%	
	Compute income tax	
	Income tax = adjusted gross	
	If income tax < 0, set income tax to \$100	

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