CIS 121 Introduction to Programming
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	If quantity ≥ 1000, then unit price = 3	quantity
	Else, unit price = 5	Unit price
	Extended price = quantity × unit price	Extended price
	Tax = 7% of extended price Total = extended price + tax	Tax Tital

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.

Item	Unit Price
A	$10.00
B	$20.00

Input	process	output
Item A, b	If item = A THEN unit price = 10	Display item Unit price Extended price
quantity	If item = B THEN unit price = 20	
	Extended price = quantity x unit price	

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

Number of books	Total cost=number of books x cost per book	Order total
Cost per books	If total > 50 THEN shipping = 0	Shipping charge
	Everything else is shipping = 25	

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	If cost is > 1000 THEN warranty = 10% of cost	Appliance name cost
cost	Else, warranty = 5% of cost Total= cost +warranty	Warranty Tital

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
Last name	Adjusted gross income = gross income − (dependents × 12,000)	Last name,
Number of dependents	If adjusted gross > 50,000 then tax rate = 20% if anything Else THEN tax rate = 10%	, gross income number of dependents
Gross income	Income tax = adjusted gross × tax rate If income tax< 0 THEN income tax = 100	adjusted gross income, INCOME TAX

Example Programs - In class

1. Input a student's last name and GPA, display the last name, GPA and a message of "Well Done" when the GPA is greater than or equal to 4.0. When the GPA is less than 4.0 display a message "Good Effort".

2. Allow a user to enter the meal cost. For meals over $25 compute a tip to be 20% of the meal. For meals $25 or under, give a $3.00 tip. Compute the total to be cost of meal plus the tip. Display the meal cost, tip and total.

3. The user enters the type of gasoline of either "regular" or "premium". The user will also enter the gallons of gas purchased. Premium gas costs $2.75 and regular costs $2.25 per gallon. Compute the total to be gallons purchased times cost per gallon. Display type of gas, gallons purchased, cost per gallon and total.

4. Allow a user to enter the base, height and hypotenuse of a triangle. Display a message, "Is a Right Angle" when the hypotenuse is equal to the square root of the sum of the squares of the base and height. Display "not a Right Angle" if this is not the case.

5. Allow the user to enter two numbers. If the first number is greater than the second number display a message "Is Greater" otherwise display a message "Is Not Greater".