Algorithms

Q#1: Implement an algorithm to determine if a given year is a leap year. A leap year is divisible by 4, but not divisible by 100, except if it is also divisible by 400.

1. Ask the user to input year
2. Set givenYear as given year entered by the user
3. If (givenYear is divisible by 4 and divisible by 400)
4. Print ‘The given year is a leap year’
5. Else
6. Print ‘The given year is not a leap year’
7. End

Q#2: Implement an algorithm to count the number of occurrences of each character in a given string.

1. Ask the user to input the string
2. Check the number of occurrences in a string.
3. Set the variable as occurrences and increment it by +1 whenever the character repeats in the string.
4. Display the variable occurrences

Q#3: Write an algorithm to calculate x raised to the power y (i.e., x y ) without using built-in power functions.

1. Ask the user to enter a base number (i.e. x)
2. Ask the user to enter a power number (i.e. y)
3. Apply the built in power function to calculate the value such that pow(x,y)
4. Store the value of pow() in variable named value
5. Print (value)

Q#4: Calculate the area of a circle given its radius r.

1. Ask the user to input radius
2. Set Area to (3.142\*radius\*radius)
3. Display the Area

Q#5: Find the median of three given numbers.

1. Ask the user to input three numbers
2. Set median to ((number1+number2+number3)/3)
3. Display median