**Implement an algorithm to count the number of occurrences of each character in a given string.**  
1. Ask the user to enter a string

2. Breakdown the string in each character.  
3- store each character in a variable.  
4. Make a variable of count and set to 1

5. if the subsequent character differs from the previous character repeat step 3  
6- else if the variable are the same increment the value of count for that variable.  
7-repeat the step until last character of string is evaluated.  
8- display each value of count for each corresponding character of user

**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 user to enter a year
2. Check if the year is divisible by 400:

-If true, the year is a leap year, go step 5

-If false, proceed to the next step.

3- Check if the year is divisible by 100:

-If true, the year is not a leap year, go to step 6

-If false, proceed to the next step.

4- Check if the year is divisible by 4:

-If true, the year is a leap year, go to step 5

-If false, the year is not a leap year, go step 6

5- print year is leap year

6- print year is not a leap year

**Write an algorithm to find median of three numbers.**

1-Take input of three numbers a,b,c from user.

2- If a>b:

-If a<c then median is a, go to Step 4

-if b>c then median is b. Go to Step 5

-Otherwise median is c, go to Step 6

3- if b>=a:

-if b<c then median is b, go 5k step 5

-if a>c then median is a, go step 4

-otherwise median is c. Go to Step 6

4- print median is a

5- print median is b

6-print median is c,

**Calculate the area of a circle given its radius r.**  
1- ask the user to enter radius r  
2- set the value of pi to 3.142  
3- calculate area using the formula pi\*r\*r  
4- store the result in variable ‘area’  
5-dsiplay the area.

**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 two numbers x and y  
2- multiply the number x by itself the number of times stored in the y and store it in the variable ‘valuye’  
3- if user enters y equal; to zero then answer is equal to one.  
4- display the result stored in ‘value’.