1. WAP to find roots of quadractic equation.

INPUT

```
a = int(input("enter value of a="))
b = int(input("enter value of b="))
c = int(input("enter value of c="))
d = ((b**2)-4*a*c)*0.5
x1 = -b+d/2*a
x2 = -b-d/2*a
if d > 0:
    print("roots are real", x1 , x2)
else:
     print("roots are imaginary", x1 , x2)
```

output:1

```
enter value of a=1
enter value of b=2
enter value of c=3
roots are imaginary -4.0 , 0.0
```

output:2

```
enter value of a= 1
enter value of b=-5
enter value of c= 5
roots are real 6.25 , 3.75
```

2. WAP to accept a number ‘n’ to compute the following:

a. Check if ‘n’ prime number.

```
number = int(input("enter a number="))
if number>1:
    for i in range(2,int(number/2)+1):
        if (number%i)==0:
            print(number , "is not prime number")
            break
        else:
            print(number , "is a prime number")
```

output:- 1
enter a number=5
5 is a prime number

output:- 2
enter a number=10
10 is not prime number

## B. Generate all prime number till ‘n’

```
number= int(input("enter a number="))
print("All prime number upto", number,"are:")
for x in range(2,number+1):
   i =2
   for i in range (2,x):
      if(x%i == 0):
         i = x
         break;
   if(i!=x):
     print(x , end=" ")
```

OUTPUT:

```
enter a number=50
All prime number upto 50 are:
3 5 7 11 13 17 19 23 29 31 37 41 43 47
```

C. Generate first ‘n’ prime number

```
prime = 0
def primenumber(x):
     if x>=2:
        for y in range (2,x):
           if not(x%y):
              return False
   else:
        return True
   for i in range(int(input("enter number you wish to check:"))):
                 if primenumber(i):
                    prime+=1
                    print(i)
print("we found " + str(prime) + "prime numbers")
```

OUTPUT:

```
enter number you wish to check:8
2
3
5
7          we found 4 prime numbers
```

d. calculate sum of first ‘n’ natural number.

```
n = int(input("enter a number="))
sum_2 = 0
while (n>0):
    sum_2 = sum_2 + n
    n = n-1
print("Sum of first n natural number is ", sum_2)
```

OUTPUT:

```
enter a number=10
Sum of first n natural number is  55
```

3. WAP to create a pyramid of character '*' and a reverse pyramid.

```
n = int(input("enter the number of row"))
for i in range(n):
    for j  in range(n-i-1):
        print(" " , end="")
    for j in range (i+1):
        print("*" , end=" ")
    print( )

for i in range(n):
    for j in range(i+1):
        print(" " ,end="")
    for j in range (n-i-1):
        print("*" , end=" ")
    print()
```

OUTPUT:

```
enter the number of row 7
      *
     * *
    * * *
   * * * *
  * * * * *
 * * * * * *
* * * * * * *
 * * * * * *
  * * * * *
   * * * *
    * * *
     * *
      *
```

4. WAP that accepts a character and perform the following:

A. Print whether that character is a or numeric digit or a special character.
B. If character is a letter , print whether the letter is uppercase or lowercase.
C. If character is numeric digit, print its name in text.

```
character = input("Enter a chracter=")
if (character>='a' and character <= 'z'):
    print("given character" , character , "is lowercase letter")
elif(character>='A' and character <='Z'):
    print("given character " ,character , "is a uppercase letter")
elif (character >= '0' and character<='9'):
    print("given character ", character , "is a digit")
    n = int(character)
    dict = {0:'zero' , 1:'one',2:'two', 3:'three' ,4:'four', 5:'five', 6:'six', 7:'seven', 8:'eight', 9:'nine'}
    print(dict[n])
else:
    print("given character ", character , "is a Special character")
```

## OUTPUT:

Enter a chracter=r

given character  r is a lowercase letter

Enter a chracter=R

given character  R is a uppercase letter

Enter a chracter=6

given character  6 is a digit

six

Enter a chracter=@

given character  @ is a Special character

5. WAP to perform following operation in string

a. Find the frequecy of a character in a string.

```
string = "hello welcome to python"
character input("enter a character: ")
f=0
for i in string:
    if i character:
        f+=1
print("frequency of", character, 'is', f)
```

Output

```
enter a character e
Frequency of e is 3
```

b. Replace a character by another character in a string.

```
string ="hello welcome to python"
print(string.replace("h","t"))
```

Output

```
tello welcome to pytton
```

## c. Remove the first occurance of a character in a string.

```
string= "hello welcome to python"
print(string[1:len(string)])
```

## Output

```
ello welcome to python
```

## d.Remove all occurrences of a charcter from a string.

```
string = 'hello welcome to python'
        print(string[:0])
```

6.WAP to swap the first n character in a string.

```
input1 = input("enter first string: ")
input2 = input("enter second string: ")
n1 = int(input("enter no of character which is to be
swap:"))
n = input1[ :n1]
m = input2[ :n1]
if n1 <= min(len(input1),len(input2)):
 print(input1.replace(n,m))
else:
 print(input2.replace(m,n))
```

## output:

```
enter first string: hello world
enter second string: my world
enter no of character which is to be swap:5
my wo world
```

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