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COMPUTER SCIENCE

PRACTICAL RECORD

PYTHON PROGRAMS

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Class: **XI-C**

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PROGRAM NO : 1

DATE :

PROGRAM TO INPUT A WELCOMEMESSSAGE

AIM:

To write a Python program to input and display the welcome message.

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 :Enter the input and display a welcome message.

Step 5 : Print the result.

Step 6 : Stop.

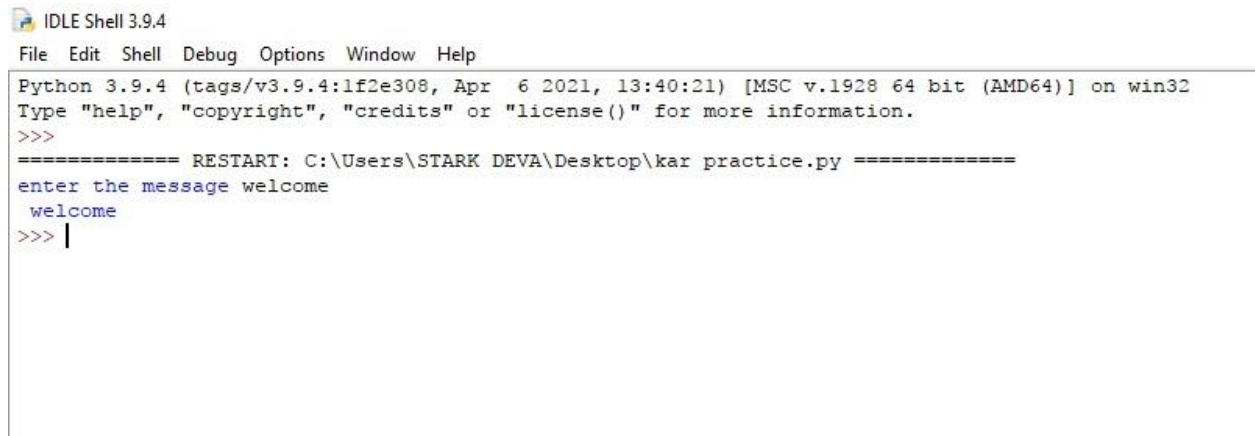
PROGRAM CODE:

Input welcome message

```
a=input('enter the message')
```

```
print(a)
```

OUTPUT:



```
IDLE Shell 3.9.4
File Edit Shell Debug Options Window Help
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====
enter the message welcome
welcome
>>> |
```

PROGRAM NO : 2

DATE :

**PROGRAM TO INPUT TWO NUMBERS AND
DISPLAY LARGER, SMALLER NUMBER**

AIM:

To write a Python program to input and display the larger and smaller number.

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to input two numbers and display larger, smaller number

Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

#input two numbers and display larger and smaller numbers:

```
a=float(input("enter the value of a"))
```

```
b=float(input('enter the value of b'))
```

```
if a>b:
```

```
print(a,'is greatest number',b,'is the least number')
```

```
else:
```

```
print(b,'is greatest number',a,'is the least number')
```

OUTPUT:

 IDLE Shell 3.9.4

File Edit Shell Debug Options Window Help

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====

enter the value of a 12

enter the value of b 27

27.0 is greatest number 12.0 is the least number

>>> |

PROGRAM NO :3

DATE :

**PROGRAM TO INPUT THREE NUMBERS AND
DISPLAY THE LARGEST AND SMALLEST NUMBER**

AIM:

To write a Python program to input three numbers and display largest and smallest number.

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to input three numbers and display largest, smallest number.

Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

#input three numbers display largest and smallest number:

```
x=float(input('enter the value of x: '))
```

```
y=float(input('enter the value of y: '))
```

```
z=float(input('enter the value of z: '))
```

```
if x>y and x>z:
```

```
if y>z:
```

```
print(x,'>',y,'>',z)
```

```
print(x,'is the largest number',z,'is the smallest number')
```



```
else:
    print(x,'>',z,'>',y)
    print(x,'is the largest number',y,'is the smallest number')
    elif y>z and y>x:
        if z>x:
            print(y,'>',z,'>',x)
            print(y,'is the largest number',x,'is the smallest number')
        else:
            print(y,'>',x,'>',z)
            print(y,'is the largest number',z,'is the smallest number')
        else:
            if y>x:
                print(z,'>',y,'>',x)
                print(z,'is the largest number',x,'is the smallest number')
            else:
                print(z,'>',x,'>',y)
                print(z,'is the largest number',y,'is the smallest number')
```

OUTPUT:

```
IDLE Shell 3.9.4
File Edit Shell Debug Options Window Help
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr  6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====
enter the value of x: 343
enter the value of y: 216
enter the value of z: 5675
5675.0 > 343.0 > 216.0
5675.0 is the largest number 216.0 is the smallest number
>>> |
```

PROGRAM NO :4

DATE :

PROGRAM TO GENERATE PATTERNS USING NESTED

LOOPS

AIM:

To write a Python program to generate patterns using nested loops

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to generate patterns using nested loops

Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

#4.generate the patterns using nested loops:

```
#a.for i in range(1,6):
```

```
    for j in range(1,i+1):
```

```
        print("*",end="")
```

```
    print()
```

```
#b. for i in range(6,0,-1):
```

```
    for j in range(1,i+1):
```

```
        print(j,end="")
```

```
    print()
```

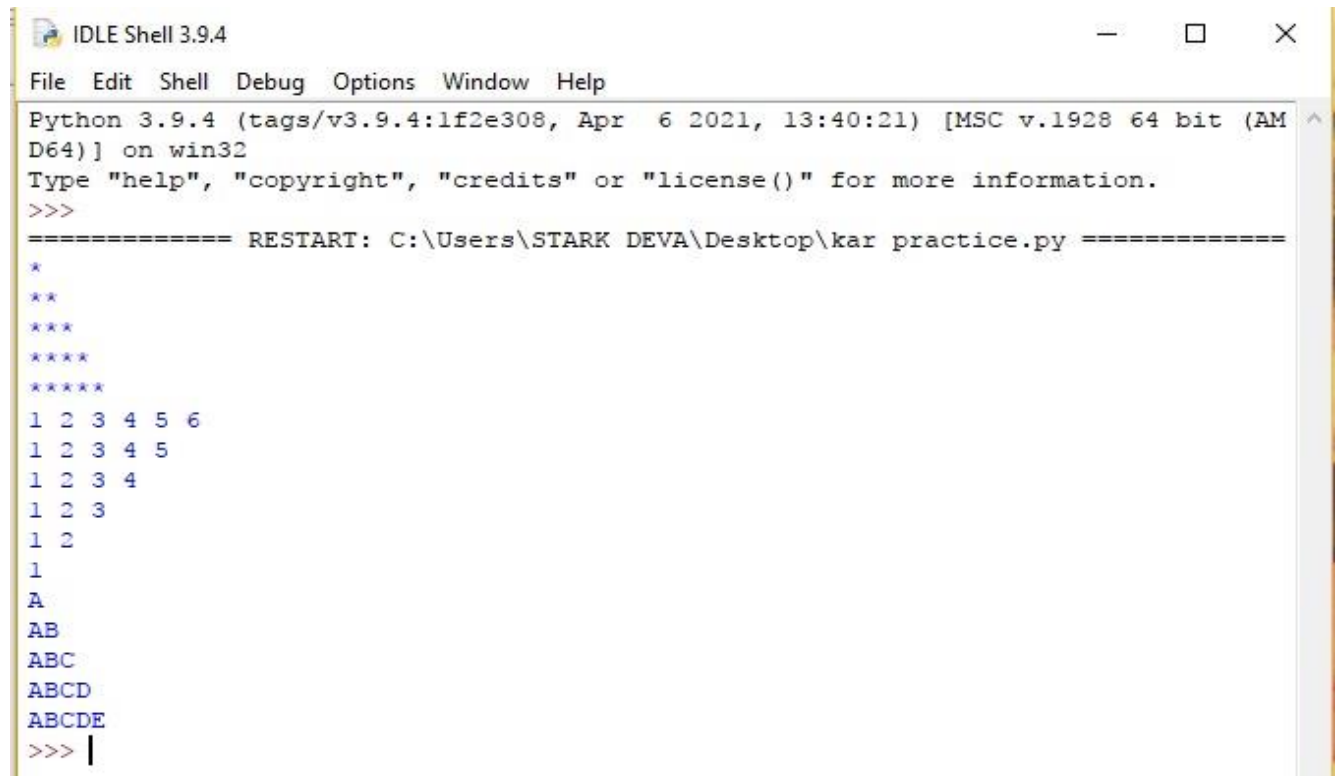
```
#c. for i in range(1,6):
```

```
    for j in range(65,65+i):
```

```
        print(chr(j),end="")
```

```
    print()
```

OUTPUT:



```
IDLE Shell 3.9.4
File Edit Shell Debug Options Window Help
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr  6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====
*
**
***
****
*****
1 2 3 4 5 6
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
A
AB
ABC
ABCD
ABCDE
>>> |
```

PROGRAM NO :5

DATE :

**PROGRAM TO INPUT THE VALUE OF N AND X AND
PRINT THE SUM OF FOLLOWING SERIES:**

AIM:

To write a Python program to print the sum of following series

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to input the value of n and x and print the sum of following series.

Step 5 :

Print the result.

Step 6 : Stop.

PROGRAM CODE:

#5.write a program to input the value of n and x and print the sum of following series:

#a.1+x+x²+x³+...+xⁿ

```
x=int(input('enter the value of x'))
```

```
n=int(input('enter the value of n'))
```

```
s=0
```

```
for i in range(n+1):
```

```
    s+=x**i
```

```
print('the sum of the series of 1+x+x2+x3+...+xn is ',s)
```

#b. $1-x+(x^2)-(x^3)+(x^4)-...(x^n)$

```
x=int(input('enter the value of x'))
```

```
n=int(input('enter the value of n'))
```

```
a=+1
```

```
s=0
```

```
for z in range(n+1):
```

```
term=(x**z)*a
```

```
    s+=term
```

```
a*=-1
```

```
print('the sum of the series  $1-x+x^2-x^3+...x^n$  is',s)
```

#c. $x+(x^2)/2-(x^3)/3+(x^4)/4-...+(x^n)/n$

```
x= int(input('enter the value of x'))
```

```
n= int(input('enter the value of n'))
```

```
sign = +1
```

```
a=x
```

```
s=x
```

```
for i in range(1,n+1):
```

```
    s+=(x**i)/n
```

```
    sign*=-1
```

```
print('sum of the series  $x+x^2/2+x^3/3+...+x^n/n$  is',s)
```

#d. $x + x/2! + x/3! + \dots + x/n!$

```
x= int(input('enter the value of x'))
```

```
n= int(input('enter the value of n'))
```

```
s = x
```

```
sign = +1
```

```
for a in range(2,n+1):
```

```
    f=1
```

```
    for i in range(1,a+1):
```

```
        f*=i
```


```
        s +=term
```

```
    term = ((x**a)*sign)/f
```

```
    sign *=-1
```

```
print('the sum of the series  $x + x/2! + x/3! + \dots + x/n!$  is',s)
```

OUTPUT:

 IDLE Shell 3.9.4

File Edit Shell Debug Options Window Help

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====

enter the value of x 2

enter the value of n 12

the sum of the series of $1+x+x^2+x^3+\dots+x^n$ is 8191

enter the value of x 13

enter the value of n 9

the sum of the series $1-x+x^2-x^3+\dots+x^n$ is -9847035132

enter the value of x 12

enter the value of n 6

sum of the series $x+x^{2/2}+x^{3/3}+\dots+x^n/n$ is 542918.0

enter the value of x 2

enter the value of n 15

the sum of the series $x+x/2!+x/3!+\dots+x/n!$ is -21208998741.13532

>>> |

PROGRAM NO :6

DATE :

**PROGRAM TODETERMINE PERFECT NUMBER, AMSTRONG
NUMBER OR PALINDROME**

AIM:

To write a Python program to determineperfect number, amstrong number or palindrome.

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 :program to determineperfect number, amstrong number or palindrome.

Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

#6.a.palindrome number(on reversing the digit,we get same number)

```
num=int(input('enter a number'))
```

```
wnum=num
```

```
rev=0
```

```
while (wnum>0):
```

```
dig=wnum%10
```

```
rev=rev*10+dig
```

```
wnum=wnum//10
```

```
if num==rev:
    print('the number you have entered is a polindrome number')
else:
    print('the number you have entered is not a polindrome number')
```

#b.to check whether a number is amstrong number or not.

```
num=int(input('enter the value of the number'))
summ=0
temp=num
while temp>0:
    digit=temp%10
    summ+=digit**3
    temp//=10
if num==summ:
    print(num,' is an amstrong number')
else:
    print(num,' is not a amstrong number')
```

#c.to check whether a number is a perfect number or not:

```
n=int(input('enter the value of n'))
```

```
summ=0
```

```
for i in range(1,n):
```

```
if (n%i==0):
```

```
    summ=summ+i
```

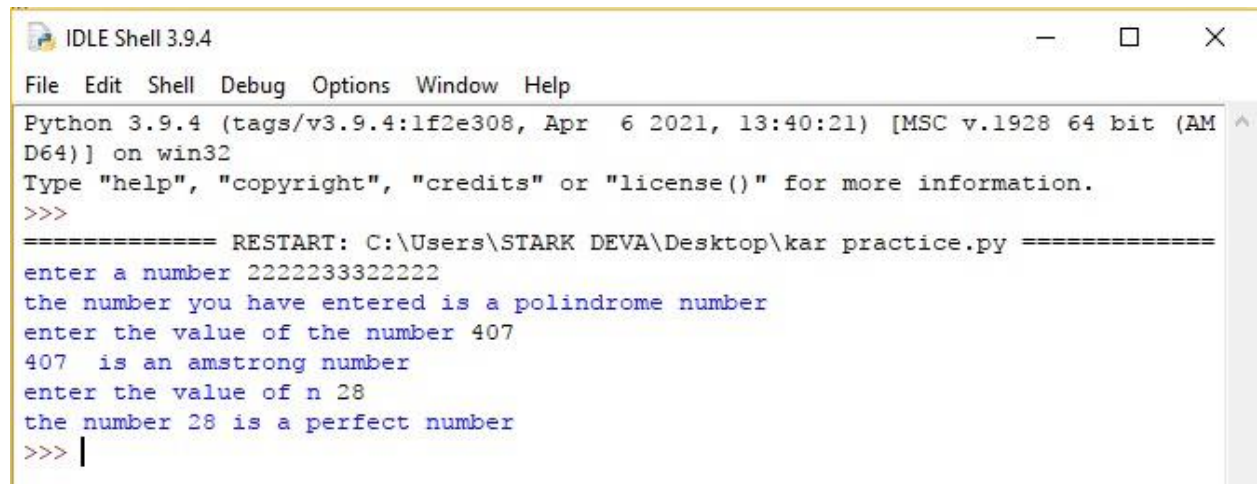
```
if summ==n:
```

```
    print('the number',n,'is a perfect number')
```

```
else:
```

```
    print('the number',n,'is not a perfect number')
```

OUTPUT:



```
IDLE Shell 3.9.4
File Edit Shell Debug Options Window Help
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====
enter a number 2222233322222
the number you have entered is a polindrome number
enter the value of the number 407
407 is an amstrong number
enter the value of n 28
the number 28 is a perfect number
>>> |
```

PROGRAM NO :7

DATE :

**PROGRAM TO INSERT A NUMBER AND
CHECK WHETHER IT IS A PRIME NUMBER OR NOT**

AIM:

To write a Python program to insert a number and check whether it is a prime number or not

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to insert a number and check whether it is a prime number or not
Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

Insert a number and check whether it is a prime number or not

```
n=int(input('enter the value of a number'))
```

```
for i in range(2,n):
```

```
    if n%i==0:
```

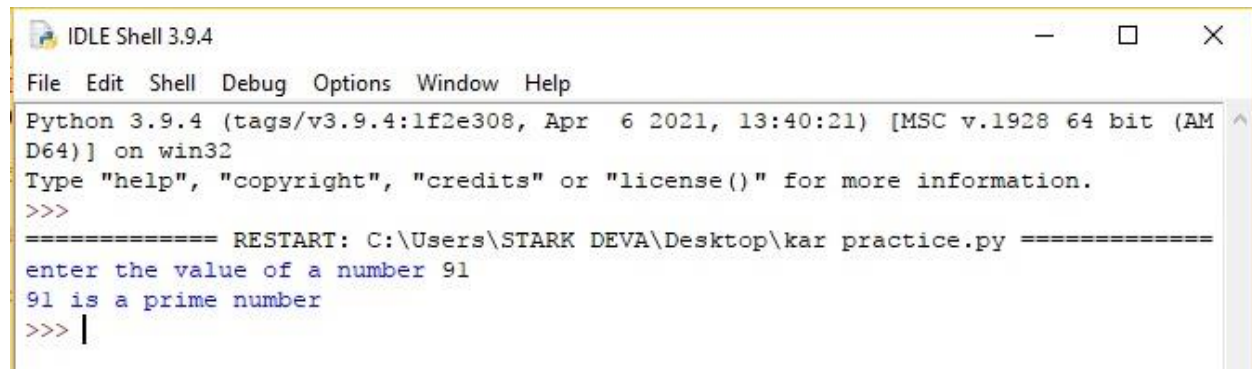
```
        print(n,'is a composite number')
```

```
    else:
```

```
        print(n,'is a prime number')
```

```
        break
```

OUTPUT:

A screenshot of the IDLE Shell 3.9.4 window. The window has a title bar with the text 'IDLE Shell 3.9.4' and standard window controls (minimize, maximize, close). Below the title bar is a menu bar with the following items: File, Edit, Shell, Debug, Options, Window, and Help. The main text area contains the following text:

```
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====
enter the value of a number 91
91 is a prime number
>>> |
```

PROGRAM NO :8

DATE :

PROGRAM TO DISPLAY FABINNACCI SERIES

AIM:

To write a Python program to display fibonacci series

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to display fibonacci series

Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

```
# fibonacci series
```

```
i=int(input('enter the limit'))
```

```
x=0
```

```
y=1
```

```
z=1
```

```
print('fibonacci series\n')
```

```
print(x,y,end="")
```

```
while z<=i:
```

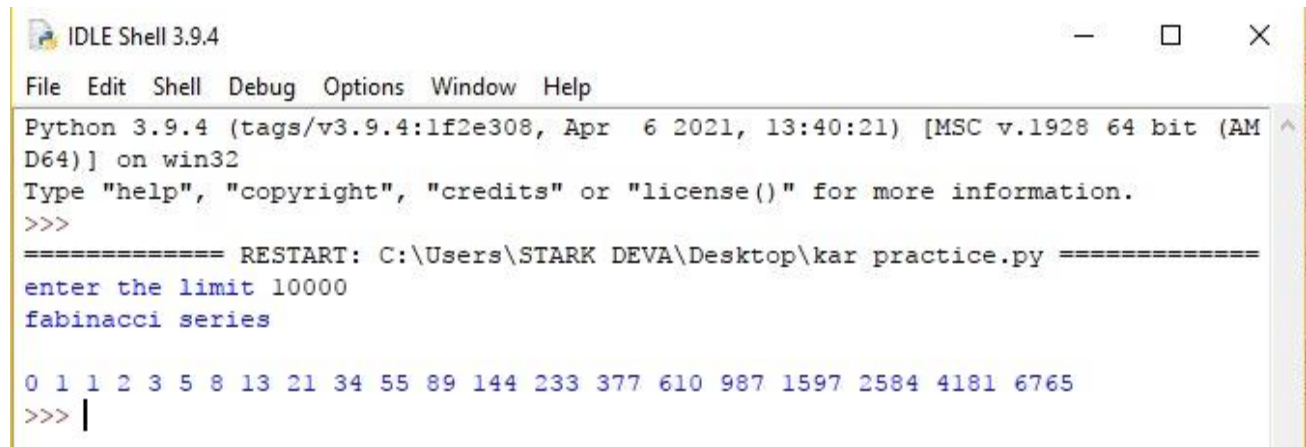
```
print(z,end="")
```

```
    x=y
```

```
    y=z
```

```
    z=x+y
```

OUTPUT:



```
IDLE Shell 3.9.4
File Edit Shell Debug Options Window Help
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====
enter the limit 10000
fabonacci series
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765
>>> |
```


PROGRAM NO :9

DATE :

**PROGRAM TO COMPUTE THE GREATEST COMMON DIVISOR AND
LEAST COMMON MULTIPLE OF TWO INTEGERS.**

AIM:

To write a Python program to compute the greatest common divisor and least common multiple of two integers.

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to compute the greatest common divisor and least common multiple of two integers.

Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

input two integers and findhcf and lcm

```
a=int(input('enter a number'))
```

```
b=int(input('enter the other number'))
```

```
if a>b:
```

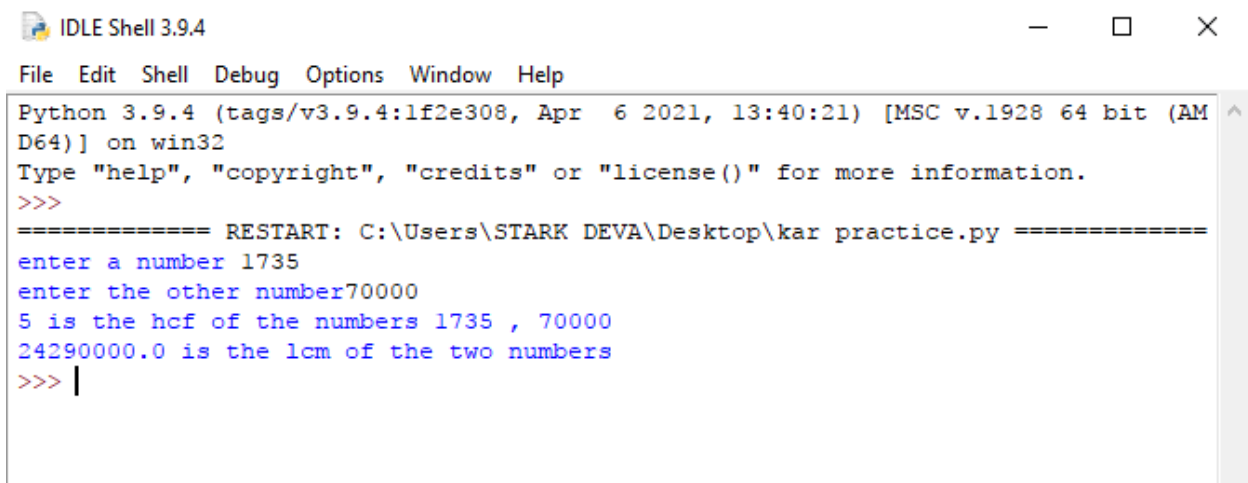
```
    smallnum=b
```

```
else:
```

```
    smallnum=a
```

```
for i in range(2,smallnum):  
    if a%i==0 and b%i==0:  
        print(i,'is the hcf of the numbers',a,',',b)  
        hcf=i  
lcm=(a*b)/hcf  
int(lcm)  
print(lcm,'is the lcm of the two numbers')
```

OUTPUT:



```
IDLE Shell 3.9.4  
File Edit Shell Debug Options Window Help  
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====  
enter a number 1735  
enter the other number 70000  
5 is the hcf of the numbers 1735 , 70000  
24290000.0 is the lcm of the two numbers  
>>> |
```

PROGRAM NO :10

DATE :

**PROGRAM TO COUNT AND DISPLAY NUMBER OF VOWELS,
CONSONANT, UPPERCASE AND LOWERCASE CHARACTER IN THE
STRING.**

AIM:

To write a Python program to count and display number of vowels, consonant, uppercase and lowercase character in the string.

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to count and display number of vowels, consonant, uppercase and lowercase character in the string.

Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

#input a line and check number of consonant,vowels,in uppercase and lowercase.

```
vowel='aeiou'
```

```
consonant='bcdfghjklmnpqrstvwxyz'
```


```
lowercount=uppercount=vowelcount=consonantcount=0
```

```
line=input('enter any sentence')#I am a Mad 420.
```

```
n=len(line)
```

```
for i in line:
    if i.islower() :
        lowercount+=1
    elif i.isupper() :
        uppercount+=1
for i in line:
    if i in vowel:
        vowelcount+=1
    elif i in consonant:
        consonantcount+=1
print('number of letter in uppercase are',uppercount)
print('number of letter in lowercase are',lowercount)
print('number of vowels are',vowelcount)
print('number of constants are',consonantcount)
```

OUTPUT:

 IDLE Shell 3.9.4

File Edit Shell Debug Options Window Help

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====

enter any sentence It displays the number of letters in lowercase,UPPERCASE,vowels and consonent

number of letter in uppercase are 10

number of letter in lowercase are 56

number of vowels are 19

number of constants are 37

>>> |

PROGRAM NO :11

DATE :

**PROGRAM TO DISPLAY TO CHECK WHETHER A WORD IS
PALINDROME OR NOT, CONVERT THE CASE OF
CHARACTERS INTO THE STRING**

AIM:

To write a Python program to.

PROGRAM ALGORITHM:

Step 1 : Start.

Step 2 : Get input number from the user.

Step 3 : Call user defined function by passing the number as an argument.

Step 4 : program to input a string and display whether it is a palindrome or not, convert the case of characters into the string. Step 5 : Print the result.

Step 6 : Stop.

PROGRAM CODE:

to check whether a word is polindrome or not,convert the case of characters into the string.

```
string=input("enter a word to check whether it is a palindrome or not")
```

```
n=len(string)
```

```
mid=n/2
```

```
if mid%2!=0:
```

```
mid+=1
```

```
else:
```

```
mid=n/2
```

```
a=int(mid)
```

```
rev=-1
for i in range(a):
    if string[a]==string[rev]:
        a+=1
        rev-=1
    elif string[a]!=string[rev]:
        print(string,'is not a palindrome word')
        break
    else :
        (string,'is a palindrome word')
a=string.upper()
b=string.lower()
print(a,' is the upper case of the word',end="")
print(b,' is the lower case of the word',end="")
```

OUTPUT:

```
IDLE Shell 3.9.4
File Edit Shell Debug Options Window Help
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr  6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\STARK DEVA\Desktop\kar practice.py =====
enter a word to check whether it is a palindrome or not wowowowow
wowowowow is not a palindrome word
WOWOWOWOW is the upper case of the word wowowowow is the lower case of the word
>>> |
```