**Python Advance Programming Assignment-04**

**1. In mathematics, the Fibonacci numbers, commonly denoted Fn, form a sequence, called the Fibonacci sequence, such that each number is the sum of the two preceding ones, starting from 0 and 1:**

The beginning of the sequence is this:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, ...

The function fastFib(num) returns the fibonacci number Fn, of the given num as an argument.

Examples

fib\_fast(5) ➞ 5

fib\_fast(10) ➞ 55

fib\_fast(20) ➞ 6765

fib\_fast(50) ➞ 12586269025

In [7]:

**def** fib\_fast(num):

a**=**0

b**=**1

**for** i **in** range(num):

a,b**=**b,a**+**b

**return** a

In [8]:

fib\_fast(5)

Out[8]:

5

In [9]:

fib\_fast(10)

Out[9]:

55

In [10]:

fib\_fast(20)

Out[10]:

6765

In [11]:

fib\_fast(50)

Out[11]:

12586269025

**2. Create a function that takes a strings characters as ASCII and returns each characters hexadecimal value as a string.**

Examples

convert\_to\_hex("hello world") ➞ "68 65 6c 6c 6f 20 77 6f 72 6c 64"

convert\_to\_hex("Big Boi") ➞ "42 69 67 20 42 6f 69"

convert\_to\_hex("Marty Poppinson") ➞ "4d 61 72 74 79 20 50 6f 70 70 69 6e 73 6f 6e"

In [73]:

**def** convert\_to\_hex(string):

string**=**''**.**join(string**.**split())

string**=**[i **for** i **in** string]

l**=**[]

**for** i **in** string:

i**=**ord(i)

i**=**hex(i)

l**.**append(i**.**split('x')[1])

**return** ' '**.**join(l)

In [74]:

convert\_to\_hex('hello world')

Out[74]:

'68 65 6c 6c 6f 77 6f 72 6c 64'

In [75]:

convert\_to\_hex("Big Boi")

Out[75]:

'42 69 67 42 6f 69'

In [76]:

convert\_to\_hex("Marty Poppinson")

Out[76]:

'4d 61 72 74 79 50 6f 70 70 69 6e 73 6f 6e'

**3. Someone has attempted to censor my strings by replacing every vowel with a *, l*k*th*s. Luckily, I've been able to find the vowels that were removed.**

Given a censored string and a string of the censored vowels, return the original uncensored string.

Example

uncensor("Wh*r* d*d my v*w*ls g*?", "eeioeo") ➞ "Where did my vowels go?"

uncensor("abcd", "") ➞ "abcd"

uncensor("*PP*RC*S*", "UEAE") ➞ "UPPERCASE"

In [98]:

x**=**"\*PP\*RC\*S\*"

y**=**"UEAE"

**def** uncensor(string1,string2):

**for** i **in** range(len(string2)):

string1**=**string1**.**replace('\*',string2[i],1)

**return** string1

In [99]:

uncensor("Wh\*r\* d\*d my v\*w\*ls g\*?", "eeioeo")

Out[99]:

'Where did my vowels go?'

In [100]:

uncensor("abcd", "")

Out[100]:

'abcd'

In [101]:

uncensor("\*PP\*RC\*S\*", "UEAE")

Out[101]:

'UPPERCASE'

**4. Write a function that takes an IP address and returns the domain name using PTR DNS records.**

Example

get\_domain("8.8.8.8") ➞ "dns.google"

get\_domain("8.8.4.4") ➞ "dns.google"

**5. Create a function that takes an integer n and returns the factorial of factorials. See below examples for a better understanding:**

Examples

fact\_of\_fact(4) ➞ 288 4! *3!*2! \* 1! = 288

fact\_of\_fact(5) ➞ 34560

fact\_of\_fact(6) ➞ 24883200

In [130]:

**def** fact\_of\_fact(number):

fact**=**1

**for** i **in** range(number,0,**-**1):

fact**=**fact**\***mid(i)

**return** fact

**def** mid(num):

fact2**=**1

**for** j **in** range(num,0,**-**1):

fact2**=**fact2**\***j

**return** fact2

In [132]:

fact\_of\_fact(4)

Out[132]:

288

In [133]:

fact\_of\_fact(5)

Out[133]:

34560

In [134]:

fact\_of\_fact(6)

Out[134]:

24883200

In [ ]: