Diffie server:

import socket

s = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM)

print ("Socket successfully created")

port = 12345

s.bind(('', port))

print ("socket binded to %s" %(port))

s.listen(5)

print ("socket is listening")

b = 10

while True:

c, addr = s.accept()

#print ('Got connection from', addr)

cp = int(c.recv(1024).decode('ascii'))

cg = int(c.recv(1024).decode('ascii'))

ca = int(c.recv(1024).decode('ascii'))

#c.sendall(str.encode(f))

B = pow(cg,b)%cp

c.sendall(str.encode(str(B)))

bd = pow(ca,b)%cp

print(cp,cg,ca)

print(bd)

c.close()

Diffie clent:

import socket

import time

p = 19

g = 7

a = 8

s = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM)

port = 12345

s.connect(('127.0.0.1', port))

s.send(str.encode(str(p)))

time.sleep(1)

s.send(str.encode(str(g)))

time.sleep(1)

A = pow(g,a)%p

s.sendall(str.encode(str(A)))

sb = int(s.recv(1024).decode('ascii'))

print(sb)

ad = pow(sb,a) % p

print(ad)

s.close()

affine:

def encrypt(text,m,a):

result = ''

for i in range(len(text)):

char = text[i]

if char == ' ':

result += ' '

elif char.isupper():

result += chr((((ord(char)-65) \* m + a) % 26) + 65)

else:

result += chr((((ord(char)-97) \* m + a) % 26) + 97)

return result

def decrypt(text,a):

result =''

for i in range(26):

x = (a\*i) % 26

if x == 1:

ainv = x

print(x)

for k in range(len(text)):

char = text[k]

if char == ' ':

result += ' '

elif char.isupper():

result += chr(((ord(char)-65)-a\*ainv) %26 + 65)

else:

result += chr(((ord(char)-97)-a\*ainv) %26 + 97)

return result

text = 'AFFINE CIPHER'

m = 17

a = 20

s = encrypt(text,m,a)

print(decrypt(s,a))

transporition:

text = 'Geeks for Geeks'

n = 4

mat = []

key = '2314'

for i in range(n):

mat.append(list())

for i in range(len(text)):

mat[i%n].append(text[i])

print(mat)

result =''

for i in range(len(key)):

temp = ''.join(mat[int(key[i])-1])

result += temp

print(result)

RSA:

from decimal import Decimal

def gcd(a,b):

if b==0:

return a

else:

return gcd(b,a%b)

p = int(input('Enter the value of p = '))

q = int(input('Enter the value of q = '))

no = int(input('Enter the value of text = '))

n = p\*q

t = (p-1)\*(q-1)

for e in range(2,t):

if gcd(e,t)== 1:

break

for i in range(1,10):

x = 1 + i\*t

if x % e == 0:

d = int(x/e)

break

ctt = Decimal(0)

ctt =pow(no,e)

ct = ctt % n

dtt = Decimal(0)

dtt = pow(ct,d)

dt = dtt % n

print('n = '+str(n)+' e = '+str(e)+' t = '+str(t)+' d = '+str(d)+' ct = '+str(ct)+' dt = '+str(dt))