**SOCKET PROGRAMMING**

**1)calculator**

**Client file:**

import socket # Import socket module

import sys

import ipaddress

s = socket.socket() # Create a socket object

try:

host = input() # Reading IP Address

port =3000 # Reading port number

s.connect((host, port)) # Connecting to server

print("The IP address of the server is:", host)

print("The port number of the server is:", port)

while(True):

equ=input("Please give me your equation (Ex: 2+2) or Q to quit: ")

s.send(equ.encode())

result = s.recv(1024).decode()

if result == "Quit":

print("Closing client connection, goodbye")

break

elif result == "ZeroDiv":

print("You can't divide by 0, try again")

elif result == "MathError":

print("There is an error with your math, try again")

elif result == "SyntaxError":

print("There is a syntax error, please try again")

elif result == "NameError":

print("You did not enter an equation, try again")

else:

print("The answer is:", result)

s.close # Close the socket when done

except (IndexError, ValueError):

print("You did not specify an IP address and port number")

**Server file:**

import socket

import sys

s = socket.socket()

host = socket.gethostname()

port = 3000

s.bind((host, port))

s.listen(5)

print("Server is up and running")

while True:

c, addr = s.accept()

print('Got connection from', addr)

while True:

try:

equation=c.recv(1024).decode()

if equation == "Q" or equation == "q" or equation == "Quit" or equation == "quit" or equation == "quit()":

c.send("Quit".encode())

break

else:

print("You gave me the equation:", equation)

result = eval(equation)

c.send(str(result).encode())

except (ZeroDivisionError):

c.send("ZeroDiv".encode())

except (ArithmeticError):

c.send("MathError".encode())

except (SyntaxError):

c.send("SyntaxError".encode())

except (NameError):

c.send("NameError".encode())

c.close()

**2)Writing to a file(data\_log.txt)**

**Client File:**

import socket

s = socket.socket()

port=3000

host = socket.gethostname()

s.connect((host,port))

while True:

print(s.recv(1024).decode())

opt = int(input(':'))

s.send(opt.to\_bytes(2, 'little'))

vals = input('Enter two values:\n')

if(len(vals.split())==2):

s.send(vals.encode())

print("Answer --> ",end=" ")

print(int.from\_bytes(s.recv(1024), 'little',signed =True))

else:

print("Invalid Input!!\n")

endd = input('Do you want to end?(y/n)')

s.send(endd.encode())

if(endd=='y'):

break

elif(endd=='n'):

pass

s.close()

**Server file:**

import socket

import sys

s = socket.socket()

host = socket.gethostname()

port=3000

s.connect((host,port))

s.listen(5)

print("Server is up and running")

while True:

c, addr = s.accept()

print('Got connection from', addr)

t = s.recv(1024).decode()

print(t)

f = open('data\_log.txt', "w+")

f.write(t)

s.send('Data Written Successfully!!'.encode())

f.close()

endd = input("Want to end: (y/n)\n ")

if(endd=='y'):

break

else:

continue

s.close()