Program Socket programming using TCP/UDP

CODE:

Client code--

```
Import socket
SERVER = "127.0.0.1"
PORT = 8080
client = socket.socket(socket.AF_INET,socket.SOCK_STREAM)
client.connect((SERVER, PORT))
print("input Example : 4 + 5")
print('For trigo function use the format- number operand another any number \n');
print("Type 'Over' to terminate")
while True:
        inp = input("Enter the operation in \ the form operand operator operand: ")
        if inp == "Over":
                break
        client.send(inp.encode())
        answer = client.recv(1024)
        print("Answer is "+answer.decode())
client.close()
```

Server code--

```
import math
import socket
LOCALHOST = "127.0.0.1"
PORT = 8080

server = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
server.bind((LOCALHOST, PORT))
server.listen(1)
```

```
print("Server started")
print("Waiting for client request..")

clientConnection, clientAddress = server.accept()
print("Connected client:", clientAddress)

while True:
        data = clientConnection.recv(1024)
        msg = data.decode()

        if msg == 'Over':
                print("Connection is Over")
                break

        print("Equation is received")
        result = 0
        operation_list = msg.split()
        oprnd1 = float(operation_list[0])
        operation = operation_list[1]

        if operation == "+":
                oprnd2 = float(operation_list[2])
                result = oprnd1 + oprnd2
        elif operation == "-":
                oprnd2 = float(operation_list[2])
                result = oprnd1 - oprnd2
        elif operation == "/":
                oprnd2 = float(operation_list[2])
                if oprnd2 != 0:
```

```
                result = oprnd1 / oprnd2
            else:
                result = "Division by zero error"
        elif operation == "*":
            oprnd2 = float(operation_list[2])
            result = oprnd1 * oprnd2
        elif operation == "sin":
            result = math.sin(oprnd1)
        elif operation == "cos":
            result = math.cos(oprnd1)
        elif operation == "tan":
            result = math.tan(oprnd1)
        elif operation == "arcsin":
            result = math.asin(oprnd1)
        elif operation == "arccos":
            result = math.acos(oprnd1)
        elif operation == "arctan":
            result = math.atan(oprnd1)
        elif operation == "sqrt":
            result = math.sqrt(oprnd1)

print("Send the result to client")
output = str(result)
clientConnection.send(output.encode())
clientConnection.close()
```

OUTPUT:

Server:

Server started

Waiting for client request..

Connected client: ('127.0.0.1', 54818)

Equation is received

Send the result to client

Equation is received

Send the result to client

Equation is received

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Send the result to client

Client :

input Example : 4 + 5

For trigo function use the format- number operand another any number

Type 'Over' to terminate

Enter the operation in \ the form operand operator operand: 1 + 5

Answer is 6.0

Enter the operation in \ the form operand operator operand: 20 / 2

Answer is 10.0

Enter the operation in \ the form operand operator operand: 2 * 4

Answer is 8.0

Enter the operation in \ the form operand operator operand: 0 cos 0

Answer is 1.0

Enter the operation in \ the form operand operator operand: 0 sin 0

Answer is 0.0

Enter the operation in \ the form operand operator operand: 45 tan 0

Answer is 1.6197751905438615

Enter the operation in \ the form operand operator operand: 1 arcsin 0

Answer is 1.5707963267948966

Enter the operation in \ the form operand operator operand: 3.14 sin 0

Answer is 0.0015926529164868282

Enter the operation in \ the form operand operator operand: 25 sqrt 1

Answer is 5.0

Enter the operation in \ the form operand operator operand: Over