# How to write a chat program (two clients chat with each other) with UDP?

# Answer:

**1. Server:**

· Create a UDP socket.

· Bind to a port to listen for incoming messages.

· Maintain a list of connected clients, such as clients{}.

· Transfer messages from one client to another.

* Code:

import socket
  
  
sock = socket.socket(socket.AF\_INET, socket.SOCK\_DGRAM)
  
sock.bind(('', 9876))
  
  
clients = {} # 存储客户端地址
  
  
try:
  
 while True:
  
 data, address = sock.recvfrom(8192)
  
 if address not in clients:
  
 clients[address] = address # 记录新的客户端地址
  
 # 转发消息给其他客户端
  
 for client in clients:
  
 if client != address: # 不发送给发送方
  
 sock.sendto(data, client)
  
finally:
  
 sock.close()

**2. Client:**

· Create a UDP socket.

· Send messages to the server.

· Receive messages from the server.

* Code:

import socket
  
import threading
  
  
def receive\_messages(sock):
  
 while True:
  
 data, \_ = sock.recvfrom(8192)
  
 print("Received:", data.decode())
  
  
sock = socket.socket(socket.AF\_INET, socket.SOCK\_DGRAM)
  
sock.bind(('', 0)) # 自动分配端口
  
  
threading.Thread(target=receive\_messages, args=(sock,), daemon=True).start()
  
  
try:
  
 while True:
  
 msg = input("Enter message: ")
  
 sock.sendto(msg.encode(), ('localhost', 9876)) # 发送到服务器
  
finally:
  
 sock.close()