Homework Wan Huzaifah bin Wan Azhar

Answer:



TCPServer.py

import socket

from datetime import datetime

HOST = '127.0.0.1'

PORT = 64444

with socket.socket(socket.AF\_INET, socket.SOCK\_STREAM) as s:

s.bind((HOST, PORT))

s.listen()

conn, addr = s.accept()

with conn:

print('Connected by', addr)

while True:

data = conn.recv(1024)

if not data:

break

now = datetime.now()

today = now.strftime("%d/%m/%Y %H:%M:%S").encode()

conn.sendall(today)

TCPClient.py

import socket

HOST = '127.0.0.1'

PORT = 64444

with socket.socket(socket.AF\_INET, socket.SOCK\_STREAM) as s:

s.connect((HOST, PORT))

s.sendall(b'Hellowww')

data = s.recv(1024)

print('Received, today\'s date: ', repr(data))



* See TCPClient – Multi.py and TCPServer – Multi.py
* Running TCPServer – Multi.py and several TCPClient – Multi.py will return date on each TCPClient request.



* See TCPClientWeb.py and TCPServerWeb.py
* TCPServerWeb.py will open html ‘files’ requested by TCPClientWeb.py and return its contents to TCPClientWeb.py’



* Using Python, it is not as hard as there are many asynchronous libraries that can help with the task.
* See TCPServerAsync.py and TCPClientAsync.py



* See TCPServerAsyncSignal.py, TCPClientSignalClearCache.py and TCPClientAsync.py
* Running TCPServerAsyncSignal.py and then TCPClientAsync.py will save the contents of the file to the server cache.
* This can be proved by running TCPClientAsync.py again which will return the message “Cache exist”
* Running TCPClientSignalClearCache.py will clear the cache of the server, as indicated by the message “Clearing cache!”
* Running TCPClientAsync.py will prove that the cache is now empty as it has been cleared.



* It is worth it for big file such as HTML. If a client requested the file, another client will not be blocked from requesting file.
* In this modern, there are also many library that can helps making async event-based system easier, like I demonstrated in Python.
* TCPServerAsync.py and TCPClientAsync.py already implemented the experiment.
* Each calls by TCPClientAsync, if not done asynchronously will block the event loop by three seconds.
* However, TCPClientAsync can be run multiple times without any of them blocking.