

LP 5

Name : Disha Chavan

Roll no. : 43212

Batch : P-10

Problem Statement : Implement Berkeley Algorithm for Clock Synchronization

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In [3]: # Python program imitating a client process

from timeit import default_timer as timer
from dateutil import parser
import threading
import datetime
import socket
import time

'''
Client thread function used to send time at client side
'''

def startSendingTime(slave_client):

    while True:
        # Provide server with clock time at the client
        slave_client.send(str(datetime.datetime.now()).encode())
        print("Recent time sent successfully", end = "\n\n")
        time.sleep(5)

'''
Client Thread function used to receive synchronized time
'''

def startReceivingTime(slave_client):

    while True:
        # Receive data from the server
        Synchronized_time = parser.parse(slave_client.recv(1024).decode())
        print("Synchronized time at the client is: " + str(Synchronized_time), end = '

'''

Function used to Synchronize client process time
'''

def initiateSlaveClient(port = 8080):
    slave_client = socket.socket()
    # Connect to the clock server on local computer
    slave_client.connect(('127.0.0.1', port))
```

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# Start sending time to server
print("Starting to receive time from server\n")
send_time_thread = threading.Thread(target = startSendingTime, args = (slave_client,))
send_time_thread.start()

# Start receiving synchronized from server
print("Starting to receiving synchronized time from server\n")
receive_time_thread = threading.Thread(target = startReceivingTime, args = (slave_client,))
receive_time_thread.start()

# Driver function
if __name__ == "__main__":
    # Initialize the slave/client
    initiateSlaveClient(port = 8080)

```

Starting to receive time from server

Starting to receiving synchronized time from server

Recent time sent successfully

```

Exception in thread Thread-10 (startReceivingTime):
Traceback (most recent call last):
  File "C:\Users\Disha Chavan\AppData\Local\Programs\Python\Python310\lib\threading.py", line 1009, in _bootstrap_inner
    self.run()
  File "C:\Users\Disha Chavan\AppData\Local\Programs\Python\Python310\lib\threading.py", line 946, in run
    self._target(*self._args, **self._kwargs)
  File "C:\Users\Disha Chavan\AppData\Local\Temp\ipykernel_5192\3273555360.py", line 30, in startReceivingTime
NameError: name 'parse' is not defined. Did you mean: 'parser'?

```

Recent time sent successfully

Recent time sent successfully

Recent time sent successfully

Recent time sent successfully

Recent time sent successfully

Recent time sent successfully

Recent time sent successfully

Recent time sent successfully

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In []: