Comp 2322 Computer Networking

Lab 4: Socket Programming

Due time: 11:59pm, March 25, 2024, Monday

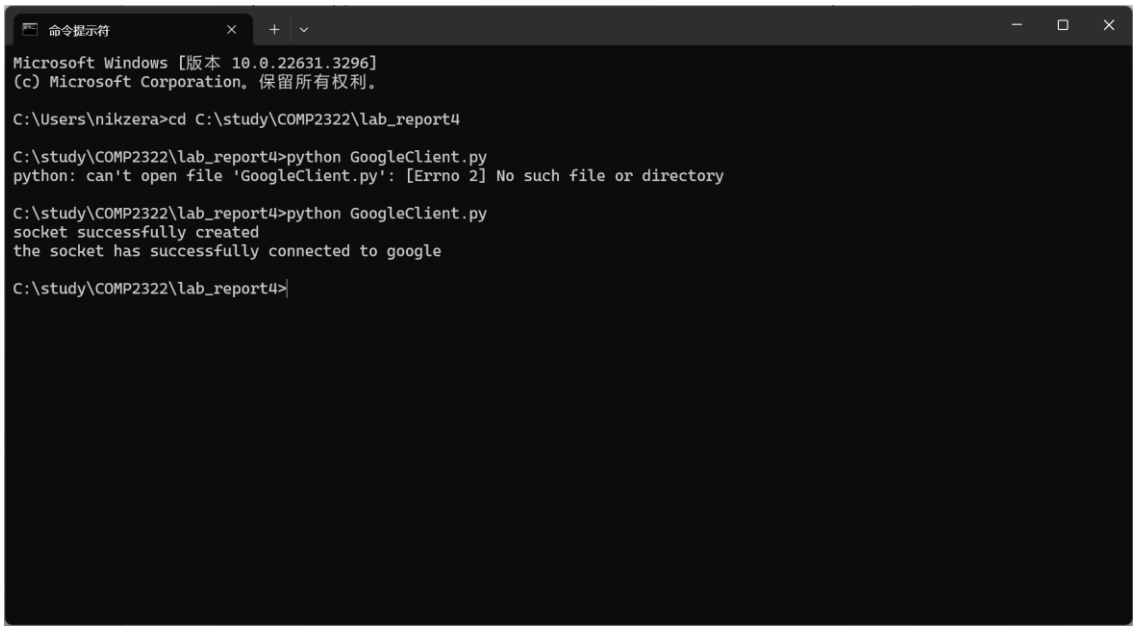
Total marks: 8 points

HE YIYANG

22100143D

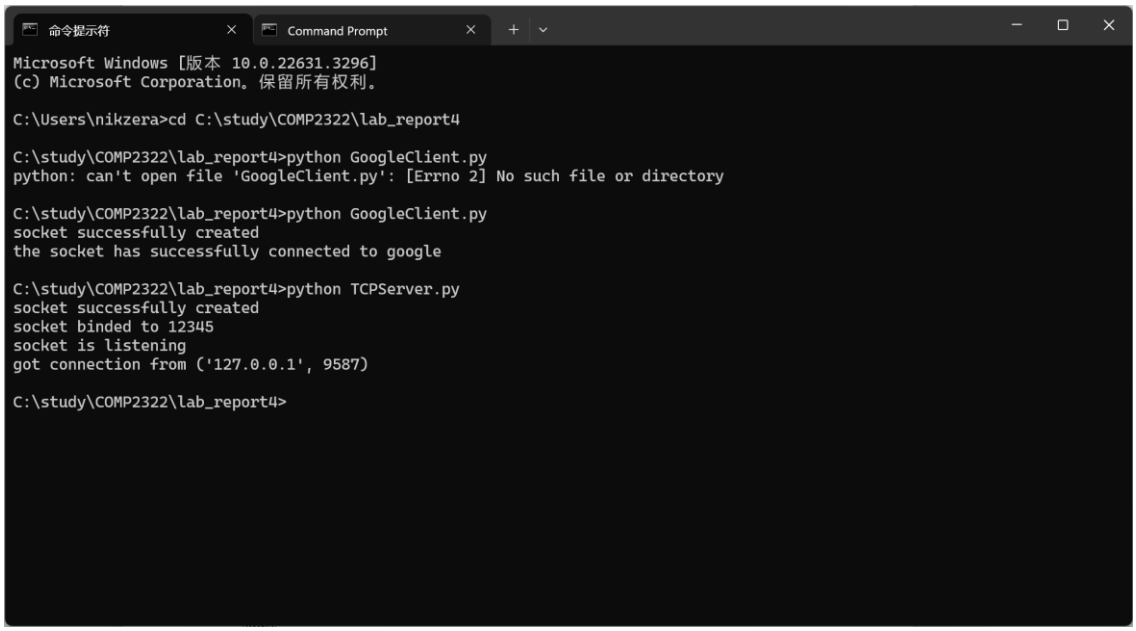
Q1.

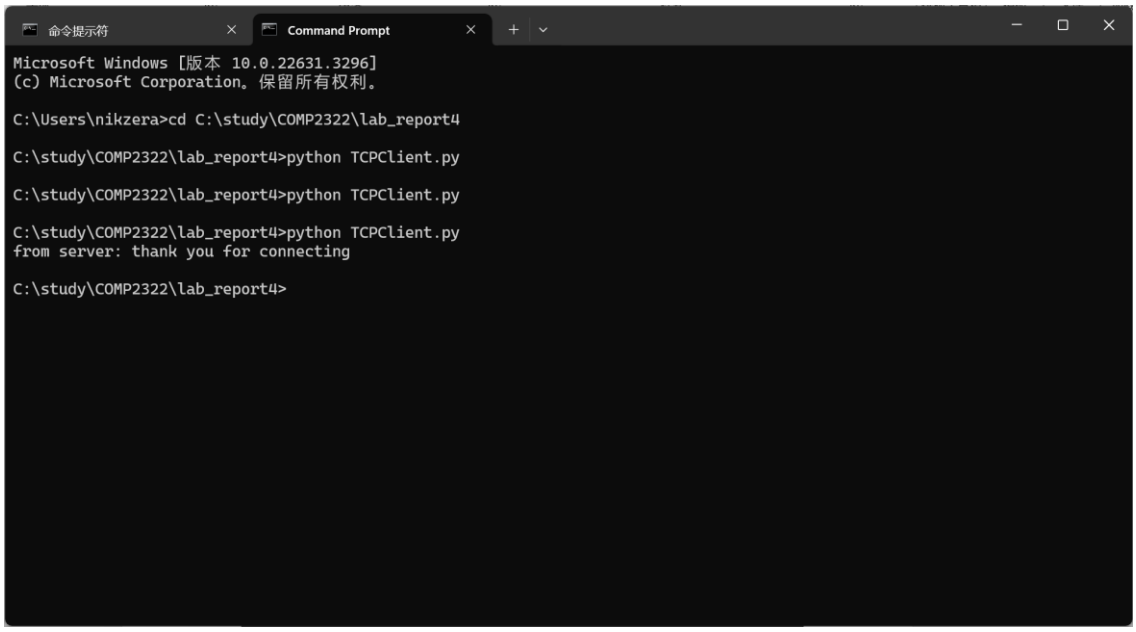
Running result:



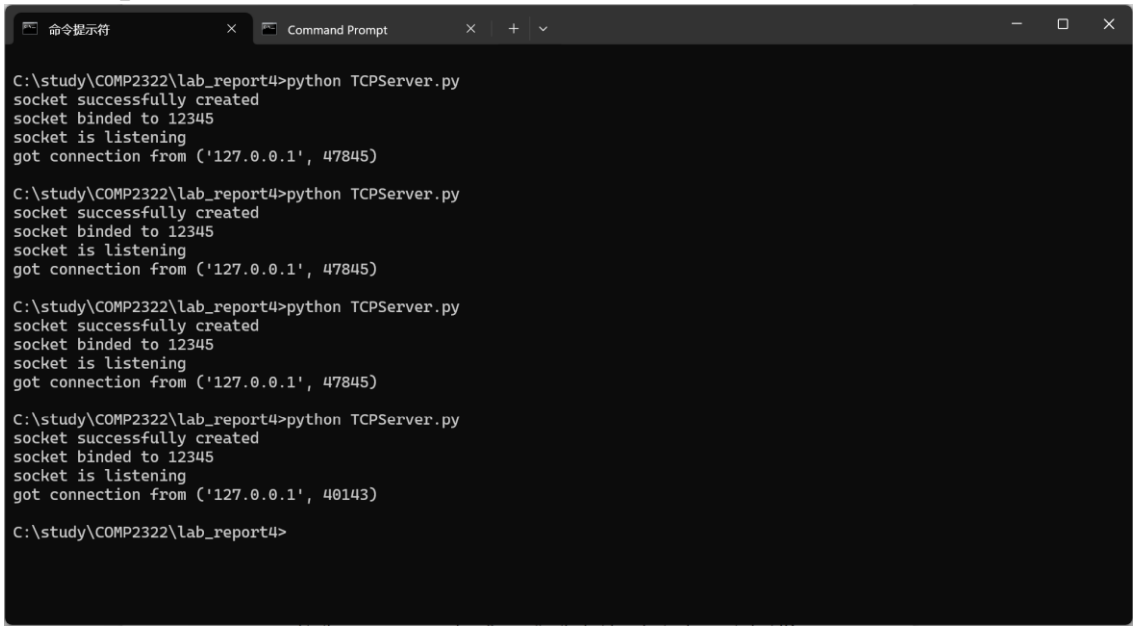
Q2.

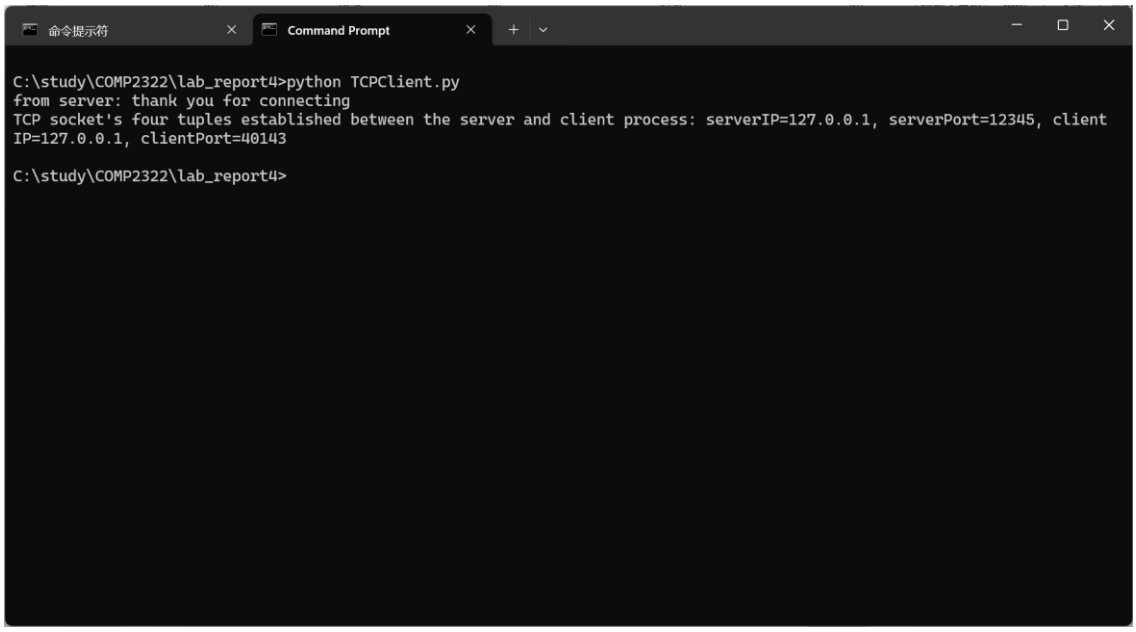
Running result:

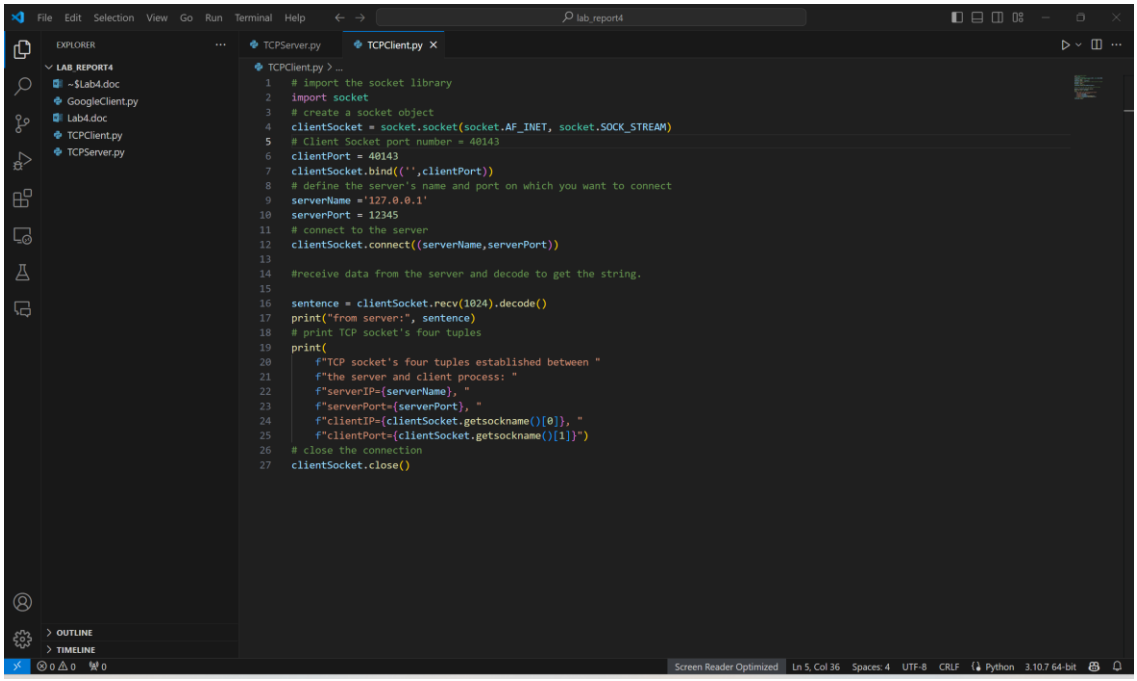




Q3.
Socket port number = 40143



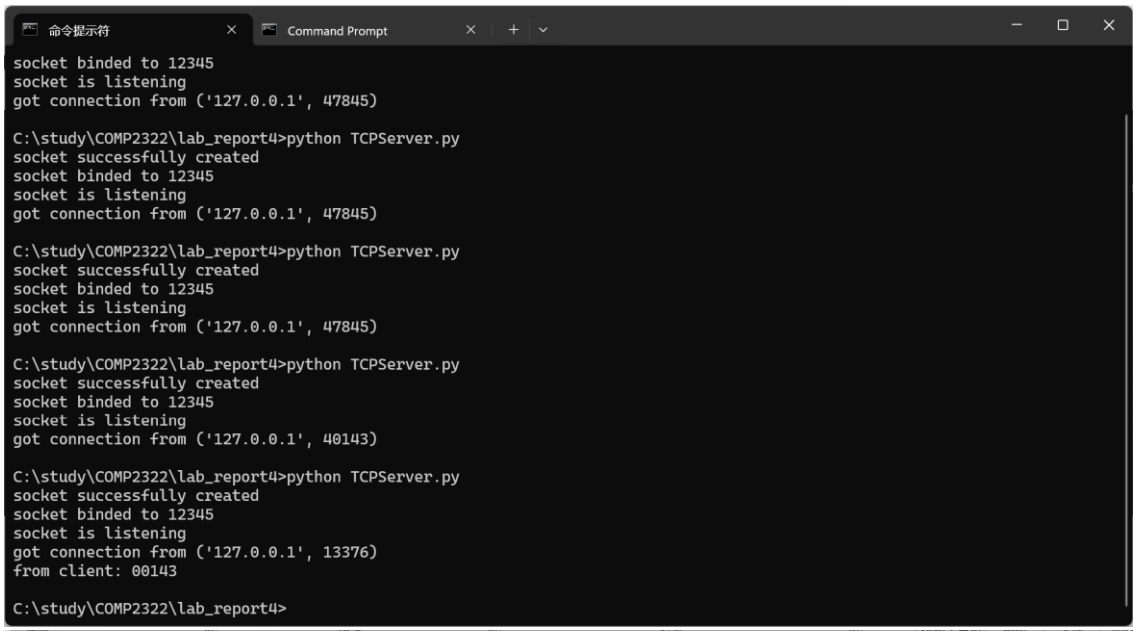


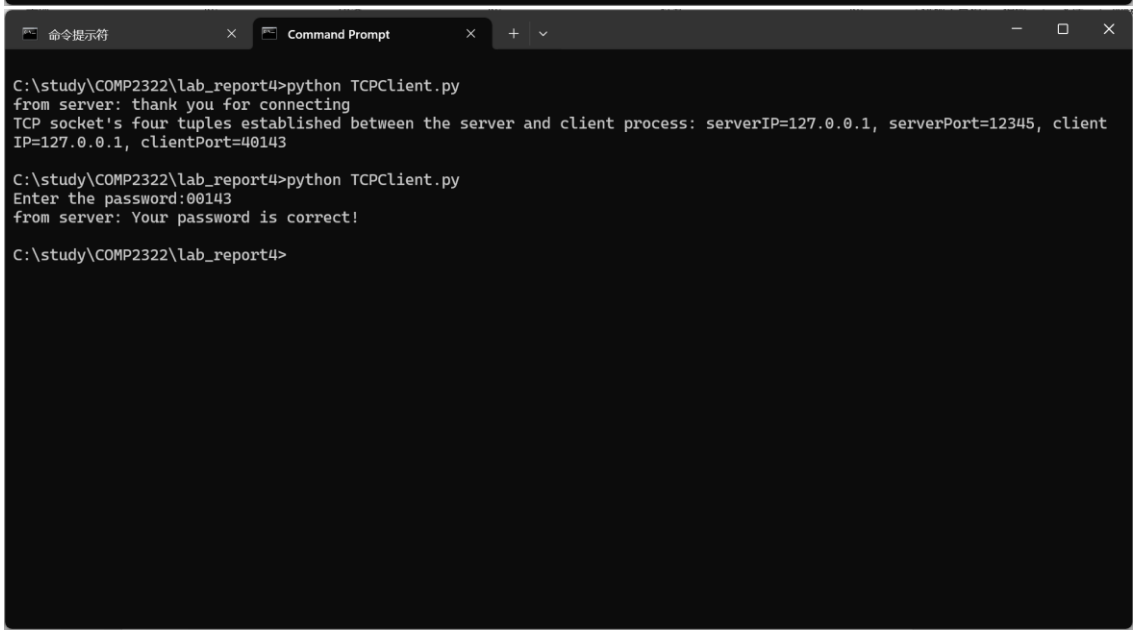


Q4.

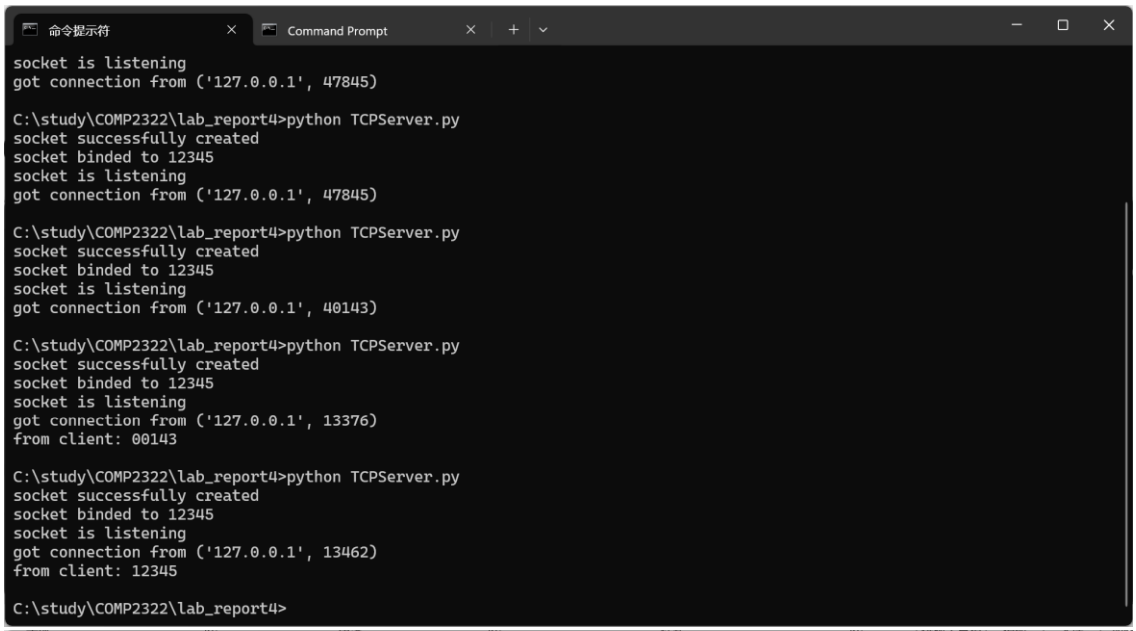
Password = 00143

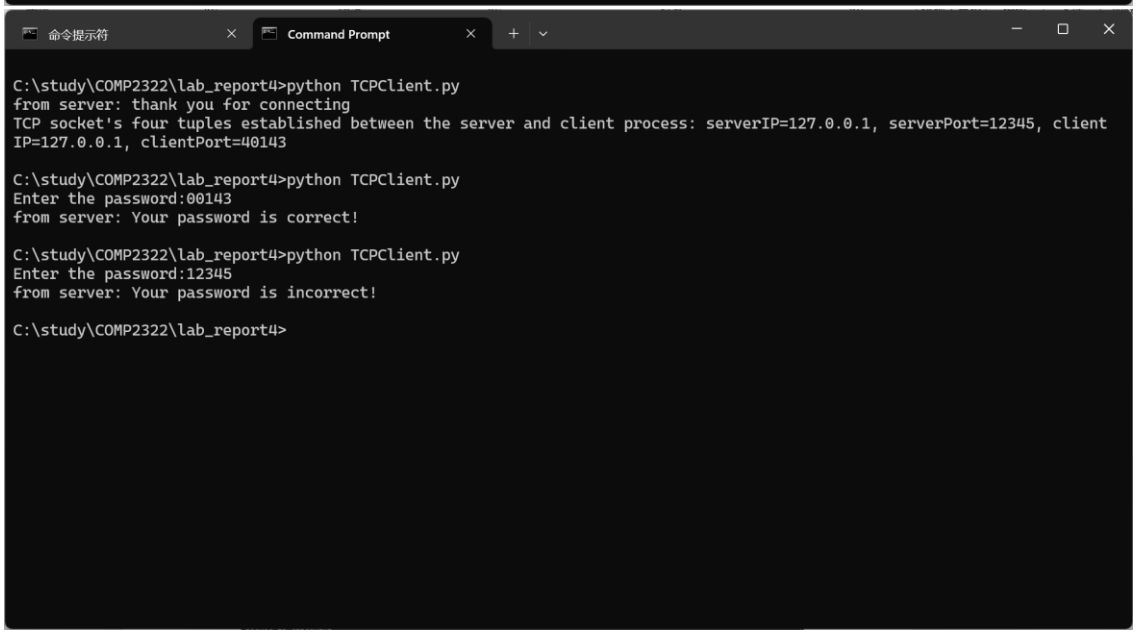
Correct:


命令提示符
Command Prompt
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 47845)
C:\study\COMP2322\lab_report4>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 47845)
C:\study\COMP2322\lab_report4>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 47845)
C:\study\COMP2322\lab_report4>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 40143)
C:\study\COMP2322\lab_report4>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 13376)
from client: 00143
C:\study\COMP2322\lab_report4>

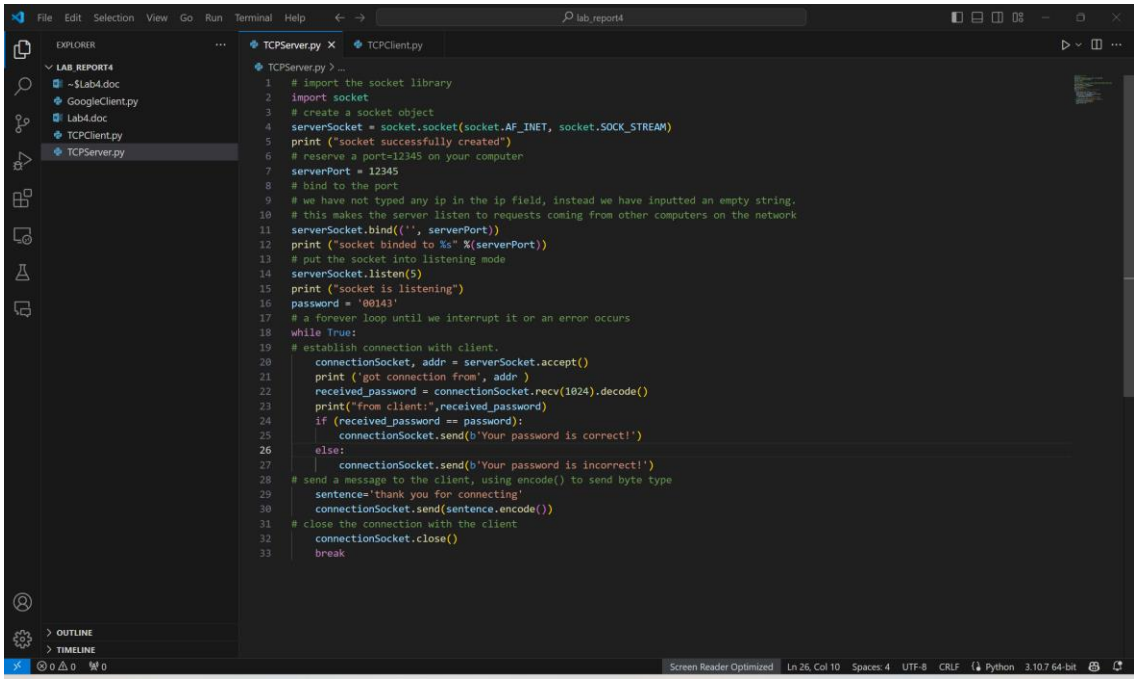

命令提示符
Command Prompt
C:\study\COMP2322\lab_report4>python TCPClient.py
from server: thank you for connecting
TCP socket's four tuples established between the server and client process: serverIP=127.0.0.1, serverPort=12345, client IP=127.0.0.1, clientPort=40143
C:\study\COMP2322\lab_report4>python TCPClient.py
Enter the password:00143
from server: Your password is correct!
C:\study\COMP2322\lab_report4>

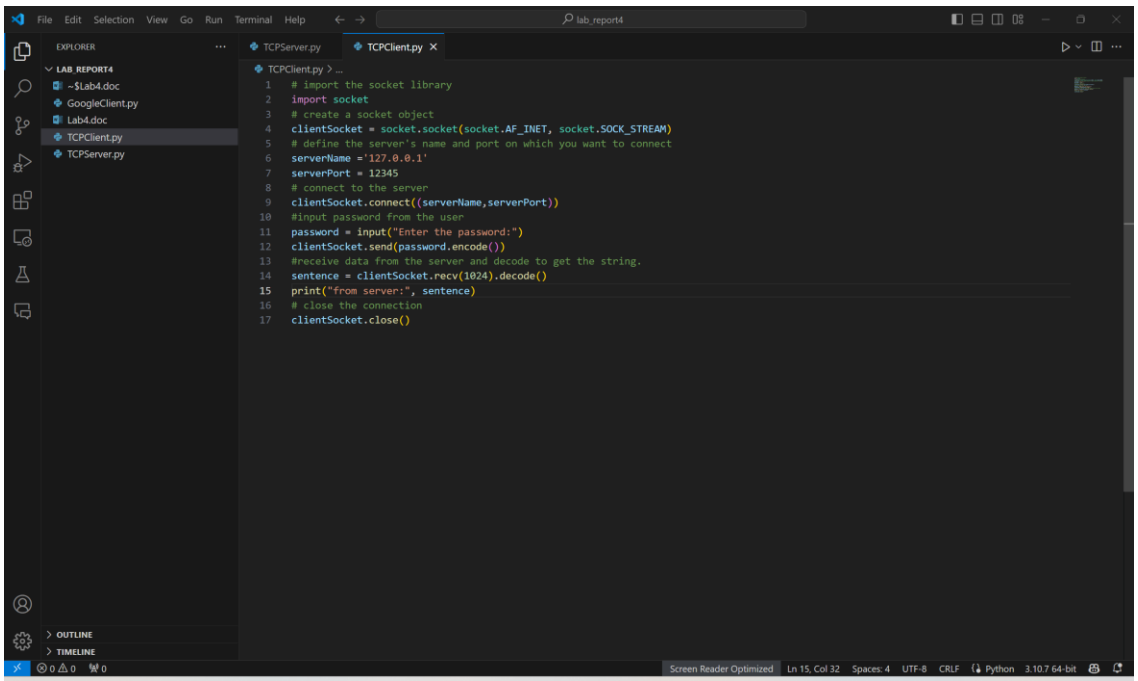
Incorrect:


命令提示符
Command Prompt
socket is listening
got connection from ('127.0.0.1', 47845)
C:\study\COMP2322\lab_report4>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 47845)
C:\study\COMP2322\lab_report4>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 40143)
C:\study\COMP2322\lab_report4>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 13376)
from client: 00143
C:\study\COMP2322\lab_report4>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 13462)
from client: 12345
C:\study\COMP2322\lab_report4>


命令提示符
Command Prompt
C:\study\COMP2322\lab_report4>python TCPClient.py
from server: thank you for connecting
TCP socket's four tuples established between the server and client process: serverIP=127.0.0.1, serverPort=12345, client IP=127.0.0.1, clientPort=40143
C:\study\COMP2322\lab_report4>python TCPClient.py
Enter the password:00143
from server: Your password is correct!
C:\study\COMP2322\lab_report4>python TCPClient.py
Enter the password:12345
from server: Your password is incorrect!
C:\study\COMP2322\lab_report4>

Code:


File Edit Selection View Go Run Terminal Help
lab_report4
EXPLORER
LAB_REPORT4
~$Lab4.doc
GoogleClient.py
Lab4.doc
TCPClient.py
TCPServer.py
TCPServer.py
TCPClient.py
TCPServer.py > ...
# import the socket library
import socket
# create a socket object
serverSocket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
print ("socket successfully created")
# reserve a port=12345 on your computer
serverPort = 12345
# bind to the port
# we have not typed any ip in the ip field, instead we have inputted an empty string.
# this makes the server listen to requests coming from other computers on the network
serverSocket.bind(('', serverPort))
print ("socket binded to %s" %(serverPort))
# put the socket into listening mode
serverSocket.listen(5)
print ("socket is listening")
password = '00143'
# a forever loop until we interrupt it or an error occurs
while True:
# establish connection with client.
connectionSocket, addr = serverSocket.accept()
print ('got connection from', addr)
received_password = connectionSocket.recv(1024).decode()
print("from client:",received_password)
if (received_password == password):
connectionSocket.send(b'Your password is correct!')
else:
connectionSocket.send(b'Your password is incorrect!')
# send a message to the client, using encode() to send byte type
sentence='thank you for connecting'
connectionSocket.send(sentence.encode())
# close the connection with the client
connectionSocket.close()
break
OUTLINE
TIMELINE
Screen Reader Optimized
Ln 26, Col 10
Spaces: 4
UTF-8
CRLF
Python
3.10.7 64-bit


File Edit Selection View Go Run Terminal Help
lab_report4
EXPLORER
LAB_REPORT4
~$Lab4.doc
GoogleClient.py
Lab4.doc
TCPClient.py
TCPServer.py
TCPServer.py
TCPClient.py
TCPClient.py > ...
# import the socket library
import socket
# create a socket object
clientSocket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
# define the server's name and port on which you want to connect
serverName ='127.0.0.1'
serverPort = 12345
# connect to the server
clientSocket.connect((serverName,serverPort))
#input password from the user
password = input("Enter the password:")
clientSocket.send(password.encode())
#receive data from the server and decode to get the string.
sentence = clientSocket.recv(1024).decode()
print("from server:", sentence)
# close the connection
clientSocket.close()
OUTLINE
TIMELINE
Screen Reader Optimized
Ln 15, Col 32
Spaces: 4
UTF-8
CRLF
Python
3.10.7 64-bit