

COMP2322 Computer Networking  
**Lab 4 Report: Socket Programming**  
ZHOU Siyu

## Question 1

Output is:

socket successfully created

the socket has successfully connected to google

```
C:\Users\zoezh\Documents\socketprogramming>python GoogleClient.py
socket successfully created
the socket has successfully connected to google
```

## Question 2

Output for TCPServer.py is:

socket successfully created

socket binded to 12345

socket is listening

got connection from ('127.0.0.1', 58024)

```
C:\Users\zoezh\Documents\socketprogramming>python TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 58024)
```

from server: thank you for connecting

```
C:\Users\zoezh\Documents\socketprogramming>python TCPClient.py
from server: thank you for connecting
```

### Question 3

Server code:

```
# import the socket library
import socket

# create a socket object
serverSocket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
print ("socket successfully created")

serverPort = 12345 # reserve a port = 12345 on your computer
serverSocket.bind(('', serverPort)) # bind to the port
print ("socket binded to %s" %(serverPort))

serverSocket.listen(5) # put the socket into listening mode
print ("socket is listening")

while True:
    connectionSocket, addr = serverSocket.accept() # establish connection with client
    print ('got connection from', addr)

    print("Server socket:", serverSocket.getsockname())# print the server socket
    print("Client socket:", connectionSocket.getpeername())# print the client socket

    sentence = 'thank you for connecting' # send message to the client
    connectionSocket.send(sentence.encode()) #send byte type

    connectionSocket.close() # close the connect ion with the client
    break
```

Client Code:

```
# import the socket library
import socket

clientSocket = socket.socket(socket.AF_INET, socket.SOCK_STREAM) #create a socket object

# define the server's name and port
serverName = '127.0.0.1'
serverPort = 12345

# client connect to server
clientPort = 34655
clientSocket.bind(('', clientPort))
clientSocket.connect((serverName, serverPort))

sentence = clientSocket.recv(1024).decode()#receive data from server, get decoded string
print ("from server:", sentence)

clientSocket.close() # close the connection
```

Output:

```
C:\Users\zoezh\OneDrive\Documents\socketprogramming>python Q3_TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 34655)
Server socket: ('0.0.0.0', 12345)
Client socket: ('127.0.0.1', 34655)
```

```
C:\Users\zoezh\OneDrive\Documents\socketprogramming>python Q3_TCPClient.py
from server: thank you for connecting
```

#### Question 4

Server code:

```
# 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

serverSocket.bind(('', serverPort)) # bind to the port
print ("socket binded to %s" %(serverPort))

serverSocket.listen(5) # put the socket into listening mode
print ("socket is listening")

while True:
    connectionSocket, addr = serverSocket.accept() # establish connection with client
    print ('got connection from', addr)

    pw = connectionSocket.recv(1024).decode() # decode from client
    if (pw == "4655"):
        sentence = "Your password is correct!"
    else:
        sentence = "Your password is incorrect!"
    # send message to the client
    connectionSocket.send(sentence.encode()) # send byte type to client

    connectionSocket.close() # close the connection with the client
    break
```

Client code:

```
# import the socket library
import socket

clientSocket = socket.socket(socket.AF_INET, socket.SOCK_STREAM) #create socket object

# define the server's name and port
serverName = '127.0.0.1'
serverPort = 12345

clientSocket.connect((serverName, serverPort))

password = input("Please input password:") # password = 4655
clientSocket.send(str(password).encode()) # send password to server to processing

sentence = clientSocket.recv(1024).decode()#receive data from server, get decoded string
print ("from server:", sentence)

clientSocket.close() # close the connection
```

Output:

```
C:\Users\zoezh\OneDrive\Documents\socketprogramming>python Q4_TCPServer.py
socket successfully created
socket binded to 12345
socket is listening
got connection from ('127.0.0.1', 55568)
```

```
C:\Users\zoezh\OneDrive\Documents\socketprogramming>python Q4_TCPClient.py
Please input password:4655
from server: Your password is correct!
```