

Republic Arab Syrian

University Tishreen – Lattakia

Department of Communication and
electrical engineering

5 th , Network Programming : Homework No2



الجمهورية العربية السورية

الجامعة تشرين

كلية الهندسة الكهربائية والميكانيكية

قسم هندسة الاتصالات والإلكترونيات

السنة الخامسة: وظيفة ٢ برمجة شبكات

Name: _zeinab daood, Number: 2444, To GitHub: __no__ Submitted

Second Network programming Homework

Question 1: TCP Server/Client Quiz App with Multi-threading?

As an improvement to previous first homework, build a TCP server and client quiz application using Python. The server should handle multiple client connections simultaneously using multi-threading. The application should allow clients to connect, participate in a quiz, and receive their quiz scores upon completion

```
1 questions = [
2     "The Eiffel Tower was completed on March 31, 1887 " : "f" ,
3     "Lightning is seen before it is heard because light travels faster than sound " : "t" ,
4     "Vatican City is a country" : "t" ,
5     "Melbourne is the capital of Australia" : "t" ,
6     "Penicillin was discovered in Vietnam to treat malaria " : "f" ,
7     "Mount Fuji is the highest mountain in Japan " : "t" ,
8     "Broccoli contains more vitamin C than lemons " : "t" ,
9     "The skull is the strongest bone in the human body" : "f" ,
10    "Electric bulbs were invented by Thomas Edison " : "f" ,
11    "Google was initially named BackRub" : "t" ,
12    "The black box in the plane is black " : "f" ,
13    "Tomato is a fruit" : "t" ,
14    "Mercury's atmosphere consists of carbon dioxide " : "f" ,
15    "Depression is the leading cause of disability worldwide " : "t" ,
16    "Cleopatra was of Egyptian descent " : "f" ,
17    "The skull is the strongest bone in the human body" : "f" ,
18    "You can sneeze while sleeping " : "f" ,
19    "It is impossible to sneeze with your eyes open " : "t" ,
20    "Banana is blueberry " : "t" ,
21    "Scallops can not be seen" : "f"
22 ]
23
24
25
26 result = {}
27
28 def handle_request(sock, caddr):
29     cs.send(str(len(questions)).encode())
30     for question in questions:
31         cs.send(question.encode())
32         client_ans = cs.recv(10).decode().strip()
33         if client_ans.upper() == questions[question].upper():
34             result[caddr] = result.get(caddr, 0) + 1
35     score = result.get(caddr, 0)
36     cs.send(f"score: {score}/{len(questions)}\n".encode())
37     cs.close()
```

```
helloworld [C:\Users\DELL\PycharmProjects\helloworld] - C:\Users\DELL\Desktop\server_final.py - PyCharm
File Edit View Navigate Code Refactor Run Tools VCS Window Help
C:\Users\DELL\Desktop\server_final.py
server_final.py
client_final.py
27 cs.send(str(len(questions)).encode())
28 for question in questions:
29     cs.send(question.encode())
30     client_ans = cs.recv(1024).decode().strip()
31     if client_ans.upper() == questions[question].upper():
32         result[cadd] = result.get(cadd, 0) + 1
33     score = result.get(cadd, 0)
34     cs.send(f"Score: {score}/{len(questions)}\n".encode())
35     cs.close()
36
37 class handle_client_thread(threading.Thread):
38     def __init__(self, cs, cadd):
39         threading.Thread.__init__(self)
40         self.cs = cs
41         self.cadd = cadd
42
43     def run(self):
44         handle_request(self.cs, self.cadd)
45
46 ss = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
47 ss.bind(('127.0.0.1', 12345))
48 ss.listen(5)
49 print("Our Quiz Server is Ready for clients.")
50 while True:
```

Run: server_final x

C:\Users\DELL\AppData\Local\Programs\Python\Python310\python.exe C:\Users\DELL\Desktop\server_final.py

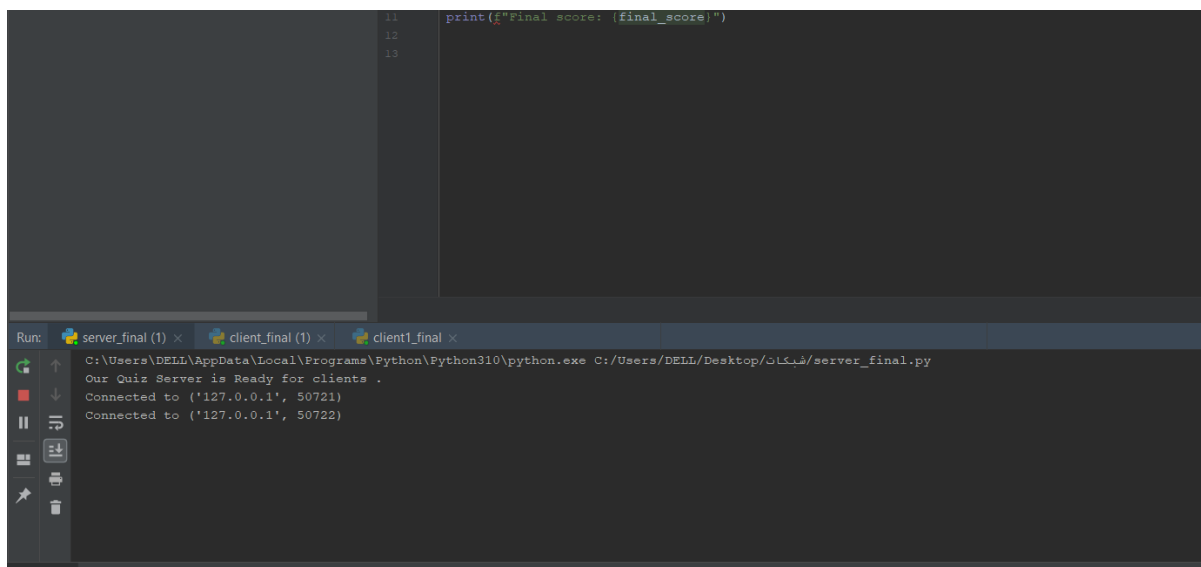
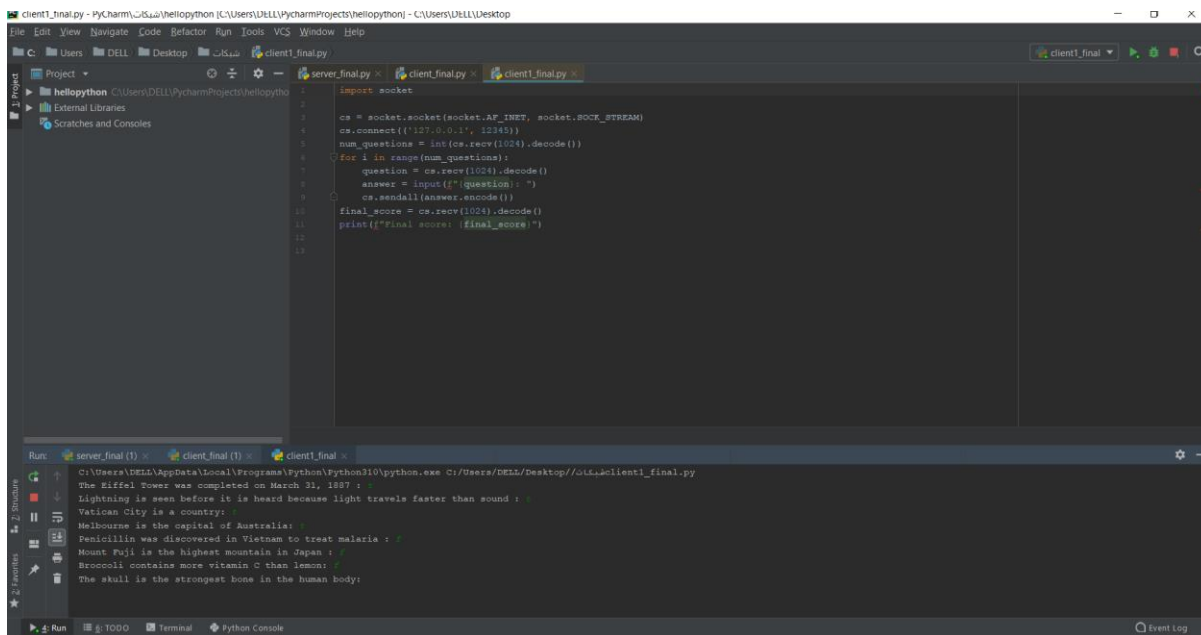
Our Quiz Server is Ready for clients.

```
helloworld [C:\Users\DELL\PycharmProjects\helloworld] - C:\Users\DELL\Desktop\client_final.py - PyCharm
File Edit View Navigate Code Refactor Run Tools VCS Window Help
C:\Users\DELL\Desktop\client_final.py
server_final.py
client_final.py
1 import socket
2
3 cs = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
4 cs.connect(('127.0.0.1', 12345))
5 num_questions = int(cs.recv(1024).decode())
6 for i in range(num_questions):
7     question = cs.recv(1024).decode()
8     answer = input(f"{question}: ")
9     cs.sendall(answer.encode())
10 final_score = cs.recv(1024).decode()
11 print(f"Final score: {final_score}")
12
13
```

Run: server_final x client_final x

actually a simple quiz game of 10 questions :
Depression is the leading cause of disability worldwide :
Cleopatra was of Egyptian descent :
You can sneeze while sleeping :
It is impossible to sneeze with your eyes open :
Banana is blueberry :
Scallops can not be seen :
Final score: Score: 9/19

Process finished with exit code 0



Question 2: Simple Website with Python Flask Framework

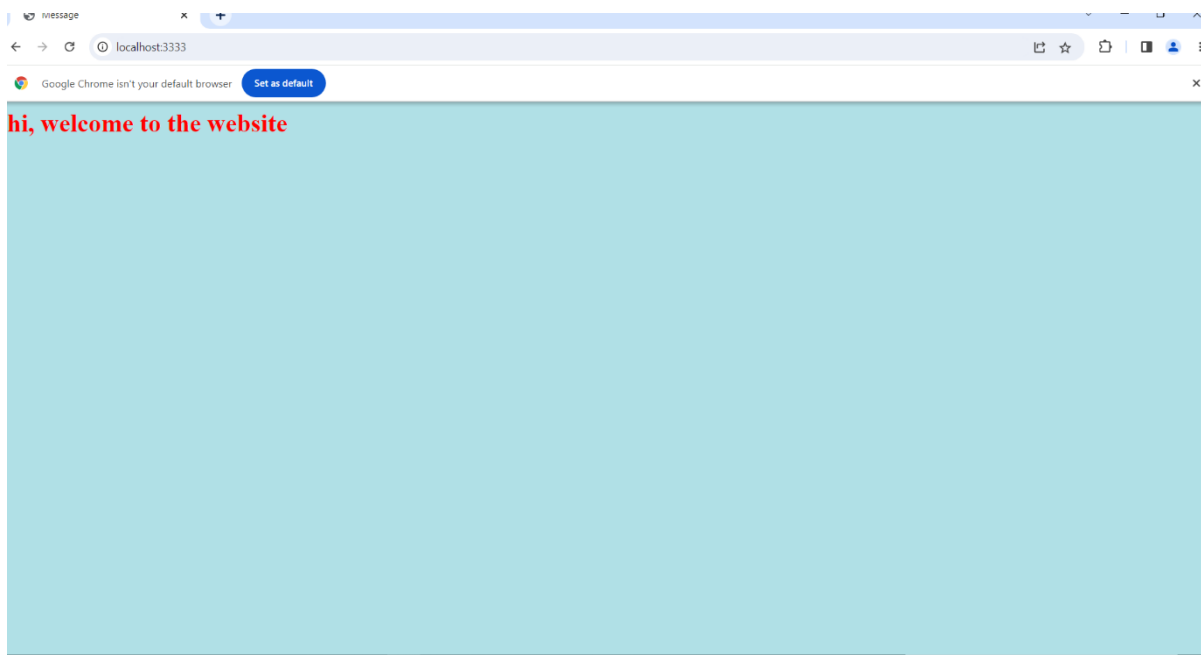
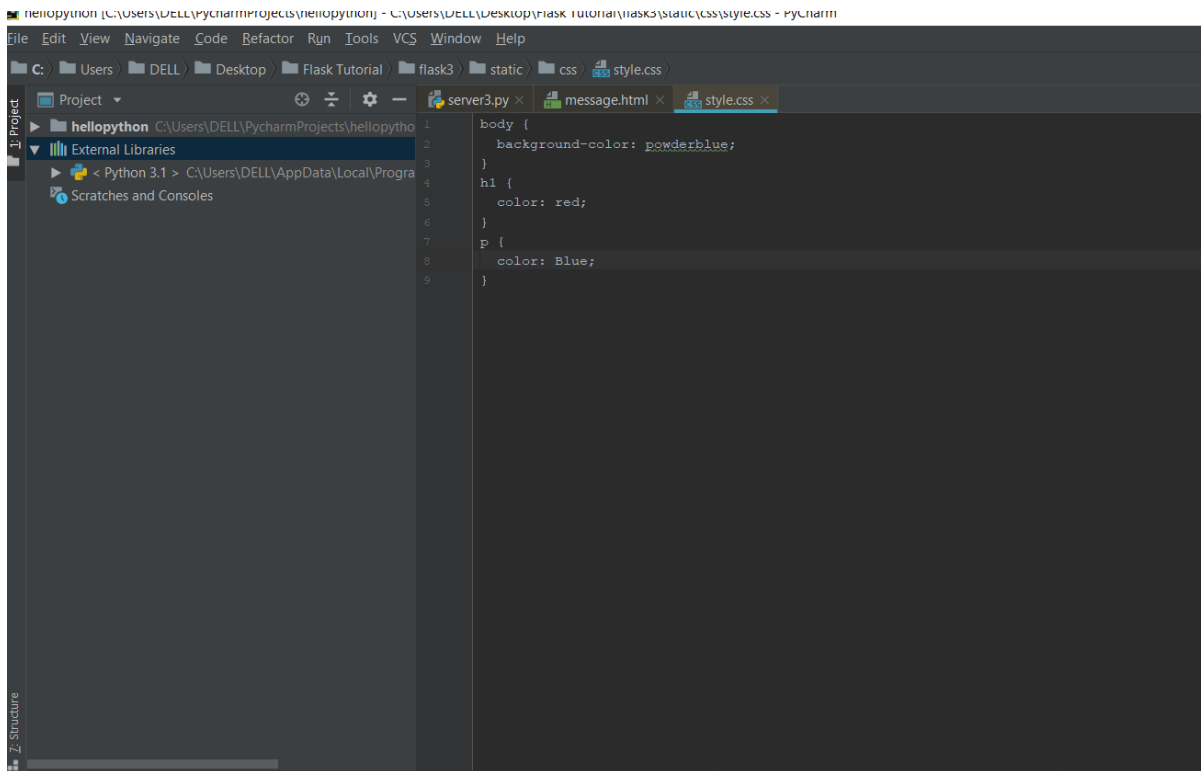
Create a simple website with multiple pages using Flask, HTML, CSS, and Bootstrap. The website should demonstrate your understanding of web design principles.

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
C:\Users\DELL\Desktop\Flask Tutorial\flask3\server3.py
Project
hellopython C:\Users\DELL\PycharmProjects\hellopython
External Libraries
Python 3.1 > C:\Users\DELL\AppData\Local\Programs\Python\Python31\python.exe
Scratches and Consoles
server3.py x message.html x style.css x
1 from flask import *
2
3 app = Flask(__name__)
4
5 @app.route("/")
6 def message():
7     return(render_template("message.html"))
8 @app.route("/info")
9 def info():
10    return(render_template("info.html"))
11 if __name__ == "__main__":
12    app.run(port=3333)
if __name__ == "__main__"
```

Run: server3 x

```
127.0.0.1 - - [21/Jun/2023 21:45:59] "GET /static/css/bootstrap.main.css HTTP/1.1" 404 -
127.0.0.1 - - [21/Jun/2023 21:46:00] "GET /favicon.ico HTTP/1.1" 404 -
Process finished with exit code -1
```

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
C:\Users\DELL\Desktop\Flask Tutorial\flask3\templates\message.html
Project
hellopython C:\Users\DELL\PycharmProjects\hellopython
External Libraries
Python 3.1 > C:\Users\DELL\AppData\Local\Programs\Python\Python31\python.exe
Scratches and Consoles
server3.py x message.html x style.css x
1 <html>
2 <head>
3     <title>Message</title>
4     <link rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}">
5     <link rel="stylesheet" href="{{ url_for('static', filename='css/bootstrap.main.css') }}">
6
7 </head>
8
9 <body>
10    <h1>hi, welcome to the website</h1>
11
12 </body>
13 </html>
html > head
```



العوائق التي ظهرت هي ان برنامج ال pycharm لا يحتوي على حزمة ال flask لذلك اتجهنا الى تنزيل الحزمة على البرنامج والاستفادة منها في فتح صفحة على المتصفح

