قسم هندسة الاتصالات ولالكترونيات

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جامعة تشرين

الرقم الجامعي : 1348

السنة الخامسة

Second 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.

Requirements:

A. The server should be able to handle multiple client connections concurrently.
B. The quiz should consist of a set of pre-defined questions stored on the server.
C. Each client should connect to the server and receive the quiz questions.
D. Clients should send their answers to the server.
E. The server should keep track of the scores for each client.
F. At the end of the quiz, the server should send the final scores to each client.

Socket Client code

```
import socket
ClientMultiSocket = socket.socket()
host = '127.0.0.1'
port = 3000
print('Please Enter Your Name: ')
try:
    ClientMultiSocket.connect((host, port))
except socket.error as e:
    print(str(e))
res = ClientMultiSocket.recv(1024)
while True:
    Input = input()
    ClientMultiSocket.send(str.encode(Input))
    res = ClientMultiSocket.recv(1024)
    print(res.decode('utf-8'))
ClientMultiSocket.close()
```

Sockets Server code

```
import socket
import os
import Questions
from _thread import *

ServerSideSocket = socket.socket()
# عنوان السيرفر
host = '127.0.0.1'
# بورت الاستماع
port = 3000
# عدد الاتصالات التي تم اجراؤها
ThreadCount = 0
try:
    # محاولة فتح سوكت
    ServerSideSocket.bind((host, port))
except socket.error as e:
    # خطأ أثناء محاولة الاستماع للسوكت
    print(str(e))
    # في حال الاتصال اطبع أن السوكت تستمتع وتنتظر اتصالا
print('Socket is listening..')
# عدد الاتصالات المسموحة في نفس الوقت
ServerSideSocket.listen(5)
# تابع الإرسال والاستقبال والذي يقوم بجلب الاسئلة وحساب عدد الاجابات الصحيحة
def multi_threaded_client(connection):
    # ارسل للمستخدم عبارة قم بادخل السمك
    connection.send(str.encode('Server is working: Please Enter Your Name:'))
    # قم بانتظار جواب المستخدم
    name =connection.recv(2048)
    # قم بارسال رسالة التعليمات باختيار الجواب الصحيح
    connection.send(str.encode(( Welcome '+name.decode('utf-8')+' select the
correct answer a or b Or c or d, Press Enter to start')))
    # قم بتعريف متحول من كلاس الاسئلة
    qlist =  Questions.QuestionsList.question
    # يشير الى رقم السؤال الحالي
    counter = 0
    # العلامة التي قام الطالب بتحصيلها
    mark = 0
    # قم بالمرور على جميع الاسئلة بالتتالي
    while counter< len(qlist):
        # ارسل السؤال للمستخدم
        connection.send(str.encode(qlist[counter].question))
        # انتظر الجواب
        data = connection.recv(2048)
        # قم بتخزين جواب المستخدم
        qlist[counter].userAnswer = data.decode('utf-8')
        if not data:
```

```
            break
        # إذا كان الجواب صحيحا قم بزيادة عدد الاجوبة الصحيحة
        if qlist[counter].userAnswer == qlist[counter].answer:
            mark = mark+1
        # انتقل للسؤال التالي
        counter = counter+1
    counter =0
    correctanswers =""
    while counter< len(qlist):
        correctanswers = correctanswers +"\ncorrect answer: "+
qlist[counter].answer+" your answer is: "+qlist[counter].userAnswer
        counter =counter+1
    # اطبع علامة الطالب الكلية بعد انتهاء الحلقة
    correctanswers =correctanswers+('\nyour mark is: '+str(mark)
+"/"+str(counter))
    connection.sendall(str.encode(correctanswers))
    # أغلق الاتصال
    connection.close()

# الاستماع حتى يأتي اتصال جديد وفي حال جاء اتصال قم بتحويله لبورت جديد واطرح الاسئلة عليه
while True:
    Client, address = ServerSideSocket.accept()
    print('Connected to: ' + address[0] + ':' + str(address[1]))
    start_new_thread(multi_threaded_client, (Client, ))
    ThreadCount += 1
    print('Thread Number: ' + str(ThreadCount))
ServerSideSocket.close()
```

Questions code

```
class Question:
    def __init__(self, question, answer,userAnswer):
        self.question=question
        self.answer=answer
        self.userAnswer=userAnswer

class QuestionsList:
    question = [Question("select the even number:
a.3  b.2  c.9   d.11","b","")
               ,Question("select the odd number:
a.3  b.2  c.6   d.13","a","")
               ,Question("select the biggest number:
a.3  b.2  c.6   d.13","d","")
               ,Question("select the smallest number: a.8  b.0  c.-
5   d.13","c","")]
```

تشغيل Client

```
Please Enter Your Name:
Mhd Al-Nasser
 Welcome Mhd Al-Nasser select the correct answer a or b Or c or d, Press Enter to start

select the even number: a.3  b.2  c.9   d.11
b
select the odd number: a.3  b.2  c.6  d.13
a
select the biggest number: a.3  b.2  c.6  d.13
d
select the smallest number: a.8  b.0  c.-5  d.13
d

correct answer: b your answer is: b
correct answer: a your answer is: a
correct answer: d your answer is: d
correct answer: c your answer is: d
your mark is: 3/4
```

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.

Requirements:

A. Set up a local web server using XAMPP, IIS, or Python's built-in server (using Flask).
B. Apply CSS and Bootstrap to style the website and make it visually appealing.
C. Ensure that the website is responsive and displays correctly on different screen sizes.
D. Implement basic server-side functionality using Flask to handle website features.

My website code

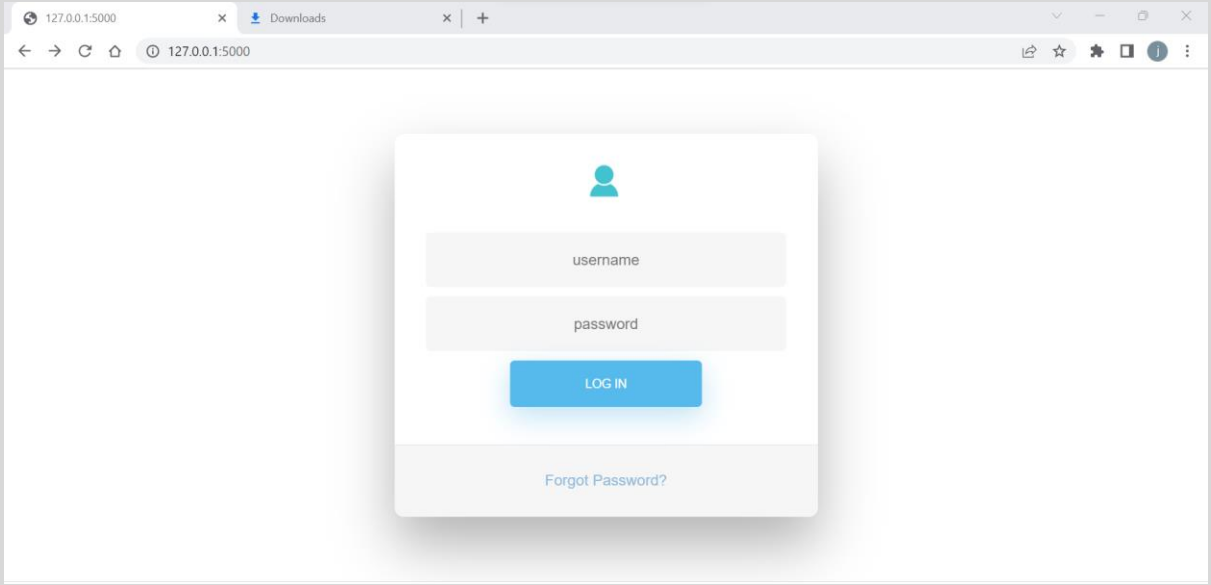
```python
from flask import Flask, render_template, request,redirect,url_for
import os
app = Flask(__name__)

# تحديد مسار الصفحة الرئيسية
@app.route('/')
def login():
    # إذا كانت كلمة المرور خطأ أهر رسالة الكلمة خطأ
    try:
        message = request.args['messages']
        return render_template('login.html',message=message)
    except :
        # إذا كانت صحيحة قم بالتحويل للصفحة الرئيسية
        return render_template('login.html',message="")
```

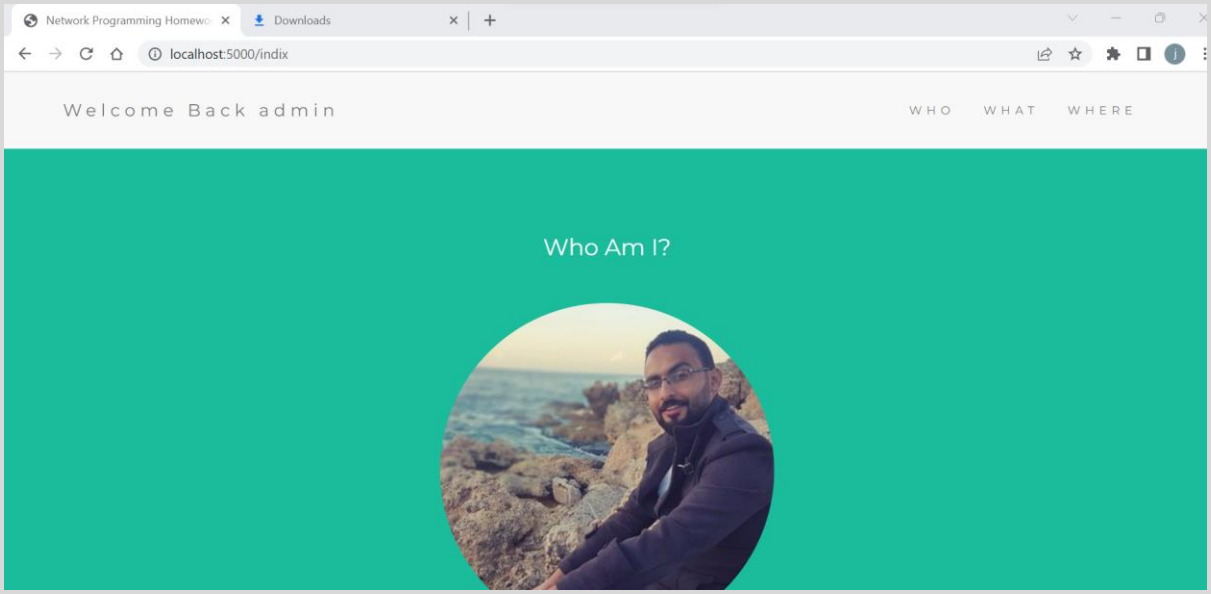
```python
# الصفحة الرئيسية
@app.route('/indix',methods = ['POST', 'GET'])
def main():
    # اقرء كلمة السر والمستخدم
    username = request.form["username"]
    password =request.form["login"]
    # تأكد من صحتهم إذا صح قم بالتوجيه لصفحة الأدمن
    if (username =='admin' and password=='admin'):
        return render_template("main.html",result = username)
    else:
        # إذا خطأ قم بإعادة التوجيه لصفحة الدخول مع إظهار رسالة خطأ في كلمة السر
        return redirect(url_for('login', messages="Wrong Password"))

# ابدأ الموقع
if __name__ == '__main__':
    app.run()
```

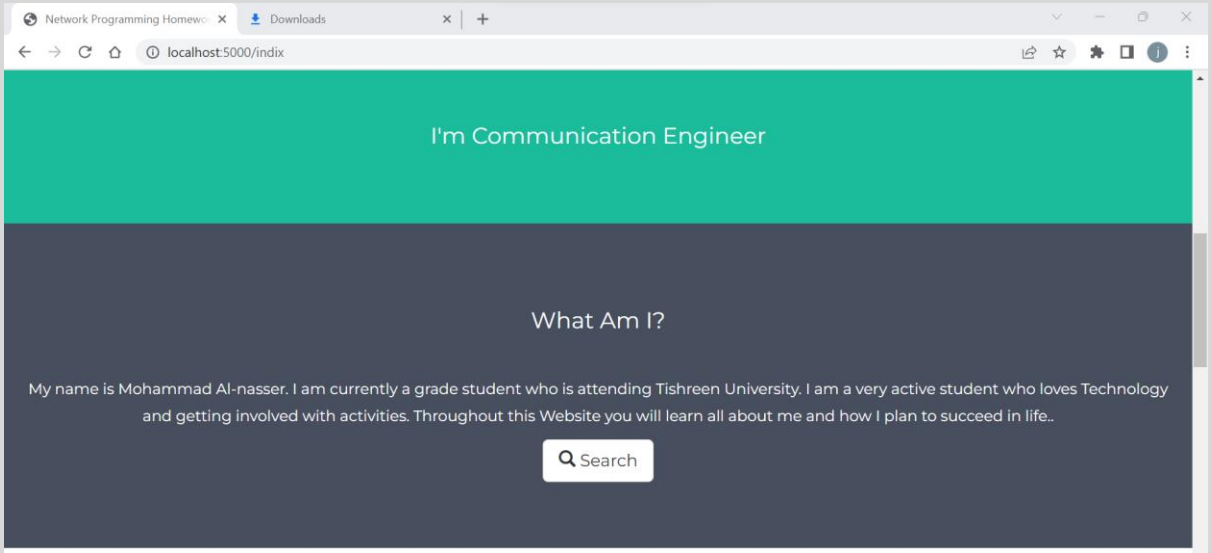
ملفات css and html and wep site page مرفقة بملف مضغوط

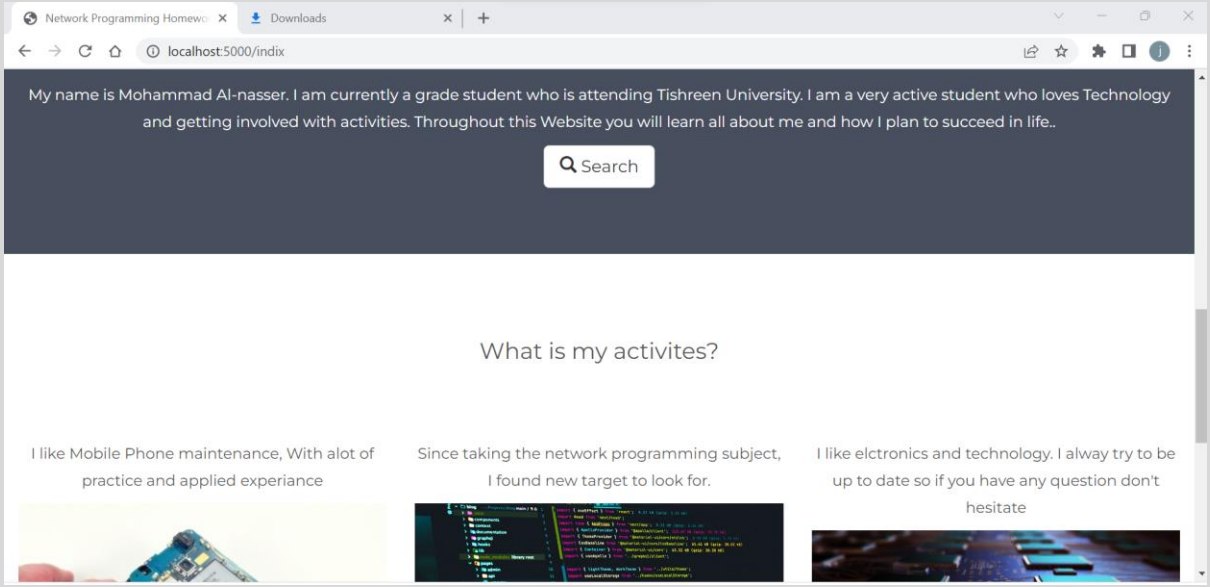
Flask-WebSite	6/20/2023 1:34 PM	WinRAR أرشيف	5 KB

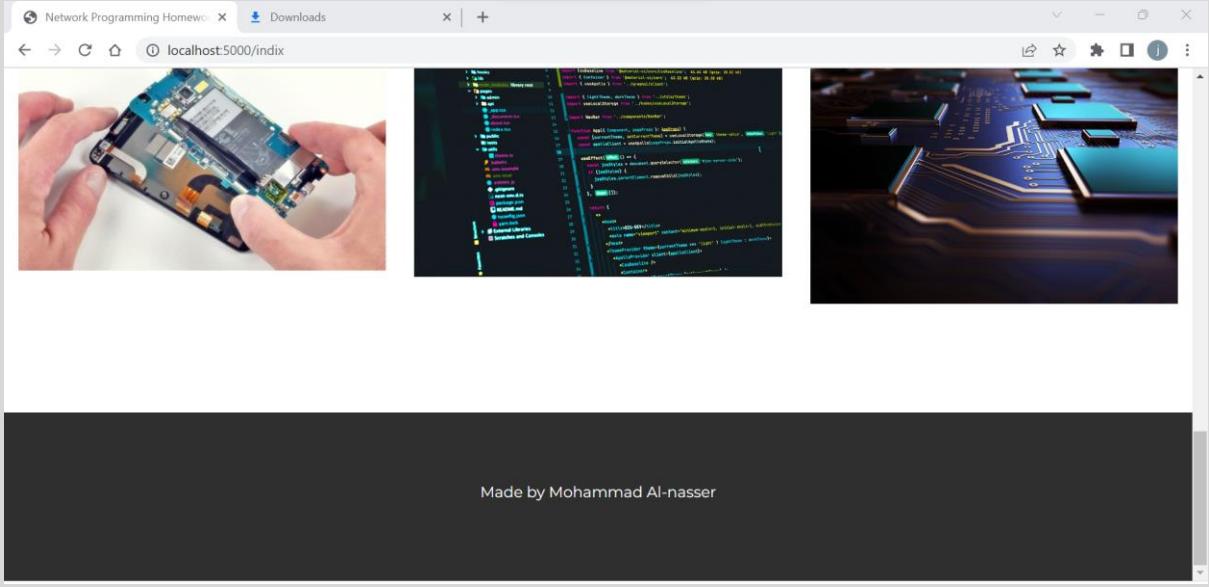
static	6/20/2023 1:42 PM	File folder	
templates	6/20/2023 1:42 PM	File folder	
mnWebsite	6/20/2023 1:40 PM	Python Source File	2 KB


127.0.0.1:5000
Downloads
127.0.0.1:5000
username
password
LOG IN
Forgot Password?


Network Programming Homewo
Downloads
localhost:5000/indix
Welcome Back admin
WHO
WHAT
WHERE
Who Am I?


Network Programming Homewo
Downloads
localhost:5000/indix
I'm Communication Engineer
What Am I?
My name is Mohammad Al-nasser. I am currently a grade student who is attending Tishreen University. I am a very active student who loves Technology and getting involved with activities. Throughout this Website you will learn all about me and how I plan to succeed in life..
Search


Network Programming Homewo
Downloads
localhost:5000/indix
My name is Mohammad Al-nasser. I am currently a grade student who is attending Tishreen University. I am a very active student who loves Technology and getting involved with activities. Throughout this Website you will learn all about me and how I plan to succeed in life..
Search
What is my activites?
I like Mobile Phone maintenance, With alot of practice and applied experiance
Since taking the network programming subject, I found new target to look for.
I like elctronics and technology. I alway try to be up to date so if you have any question don't hesitate


Network Programming Homewo
Downloads
localhost:5000/indix
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