الجمهورية العربية السورية

اللاذقية- جامعة تشرين

كلية الهندسة الكهربائية والميكانيكية

قسم هندسة الاتصالات والالكترونيات

السنة الخامسة: وظيفة ٢ برمجة شبكات

الطالب : حسن علي شما

الرقم الجامعي : 2642

المشرف : د. مهند عيسى

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.

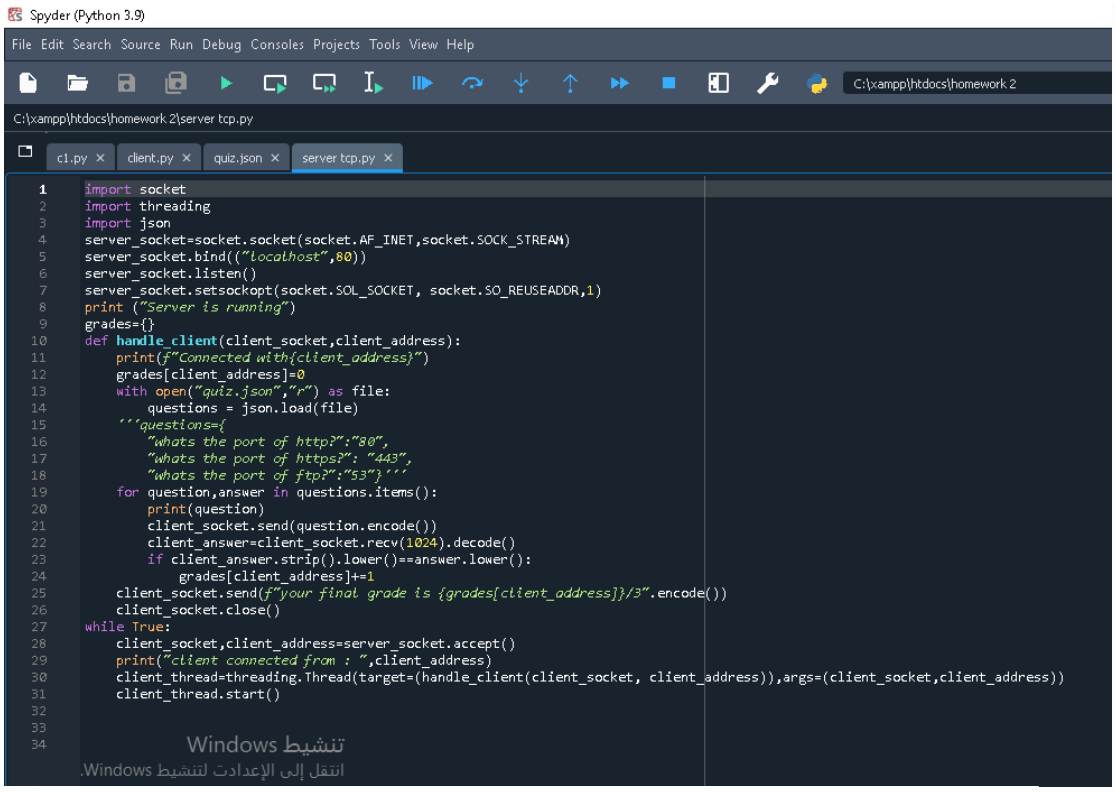
Guidelines:

- Use Python's socket module “don’t use 3thd-party packages”.
- Implement multi-threading to handle multiple client connections concurrently.
- Store the quiz questions and correct answers on the server side.

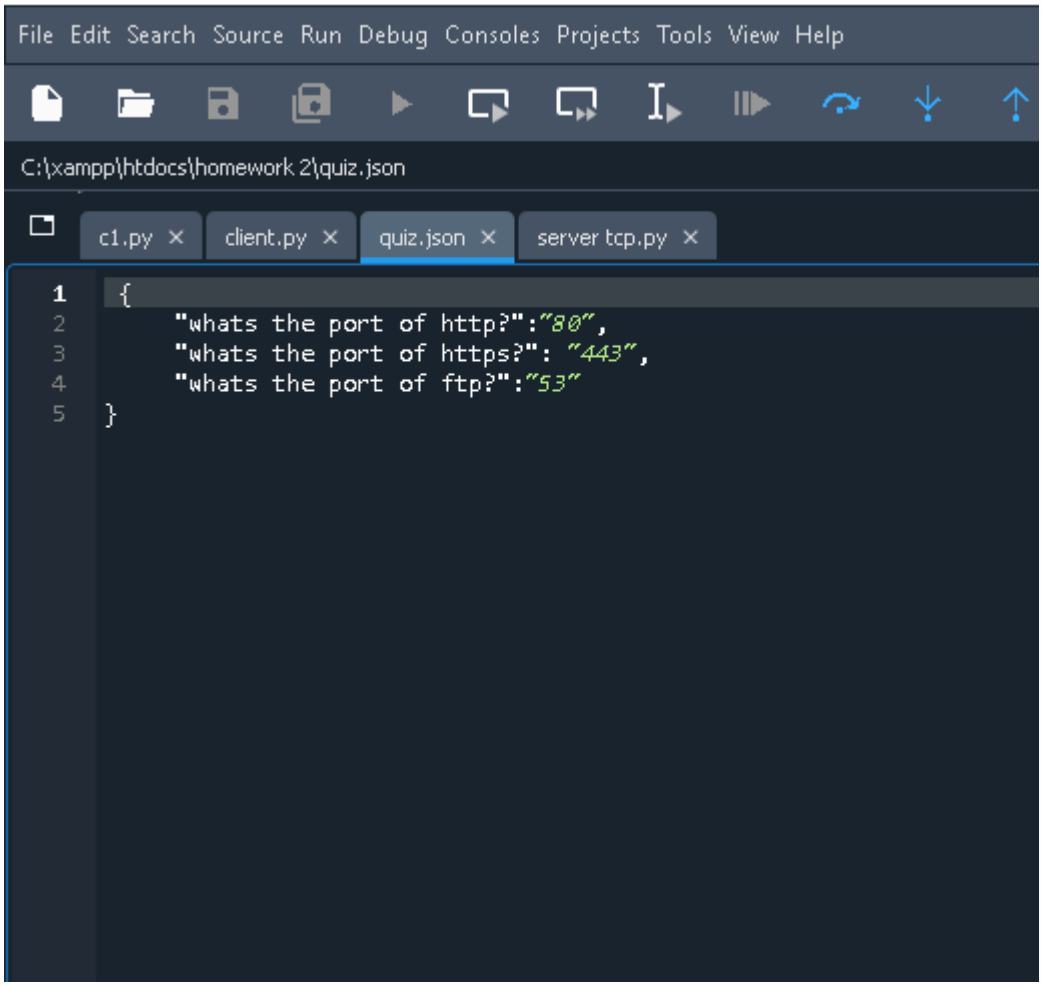
Notes:

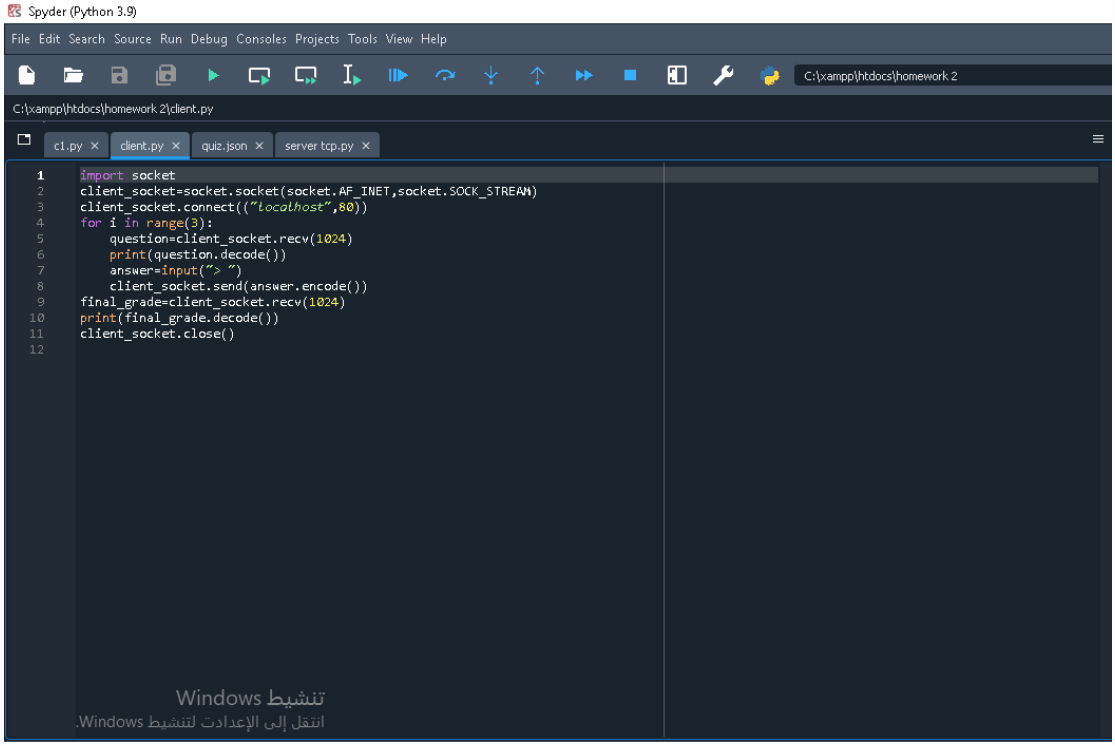
- Write brief report describing the design choices you made and any challenges faced during implementation.
- You can make a TCP Server/Client of your choice, such as Bank ATM, Chat application, or any other appropriate application that fulfil all requirements.

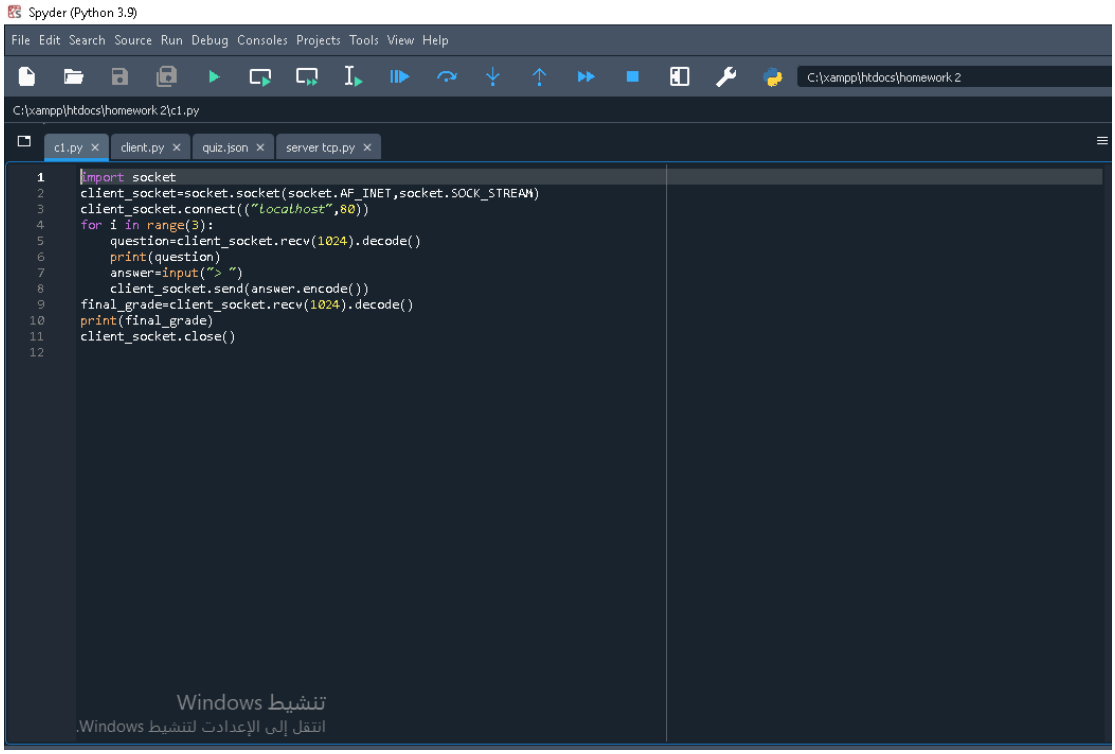
Spyder (Python 3.9)



Spyder (Python 3.9)




Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\xampp\htdocs\homework 2
C:\xampp\htdocs\homework 2\client.py
c1.py
client.py
quiz.json
server tcp.py
import socket
client_socket=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
client_socket.connect(("localhost",80))
for i in range(3):
question=client_socket.recv(1024)
print(question.decode())
answer=input("> ")
client_socket.send(answer.encode())
final_grade=client_socket.recv(1024)
print(final_grade.decode())
client_socket.close()
تنشيط Windows
.انتقل إلى الإعدادات لتنشيط Windows


Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\xampp\htdocs\homework 2
C:\xampp\htdocs\homework 2\c1.py
c1.py
client.py
quiz.json
server tcp.py
import socket
client_socket=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
client_socket.connect(("localhost",80))
for i in range(3):
question=client_socket.recv(1024).decode()
print(question)
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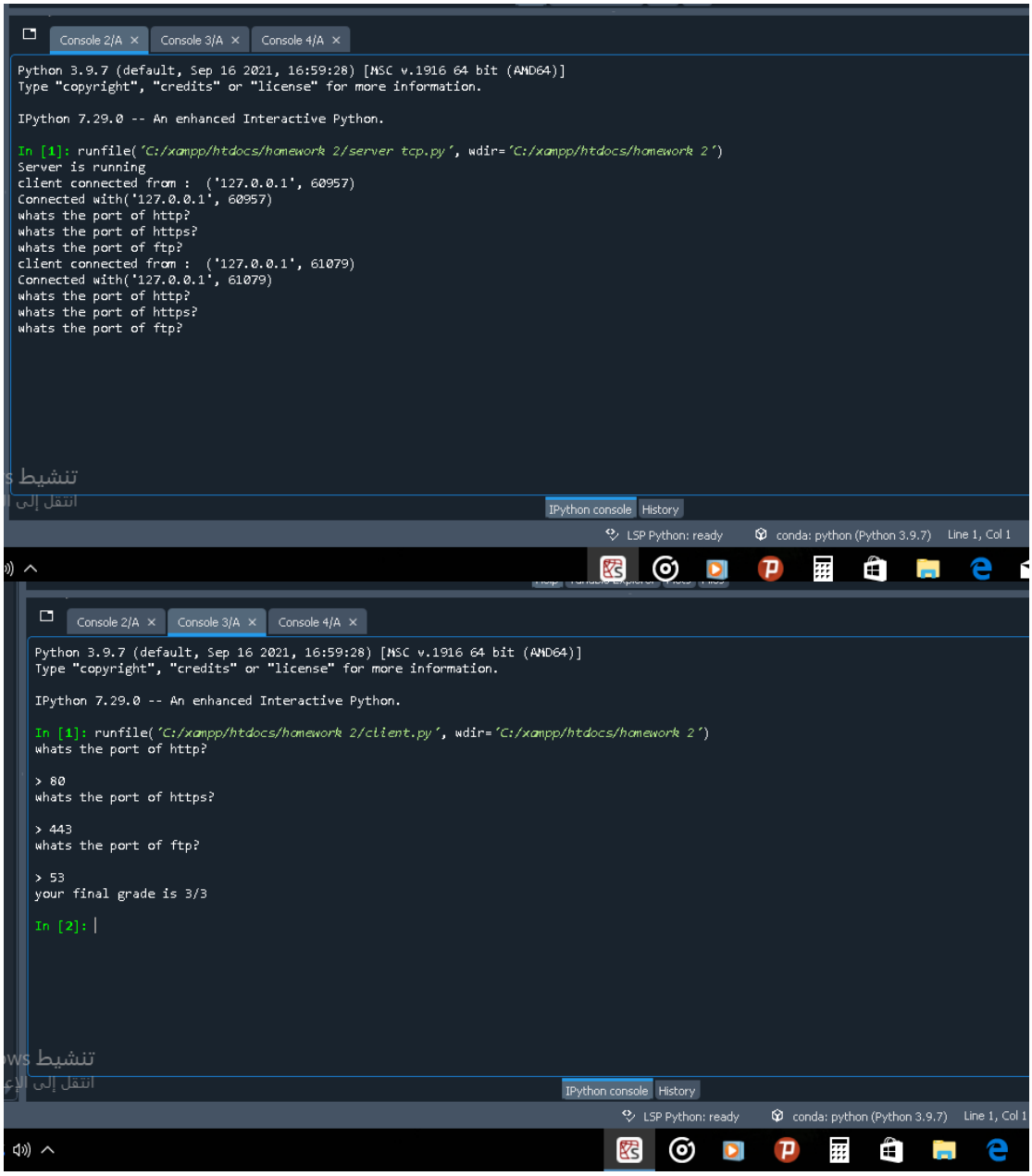
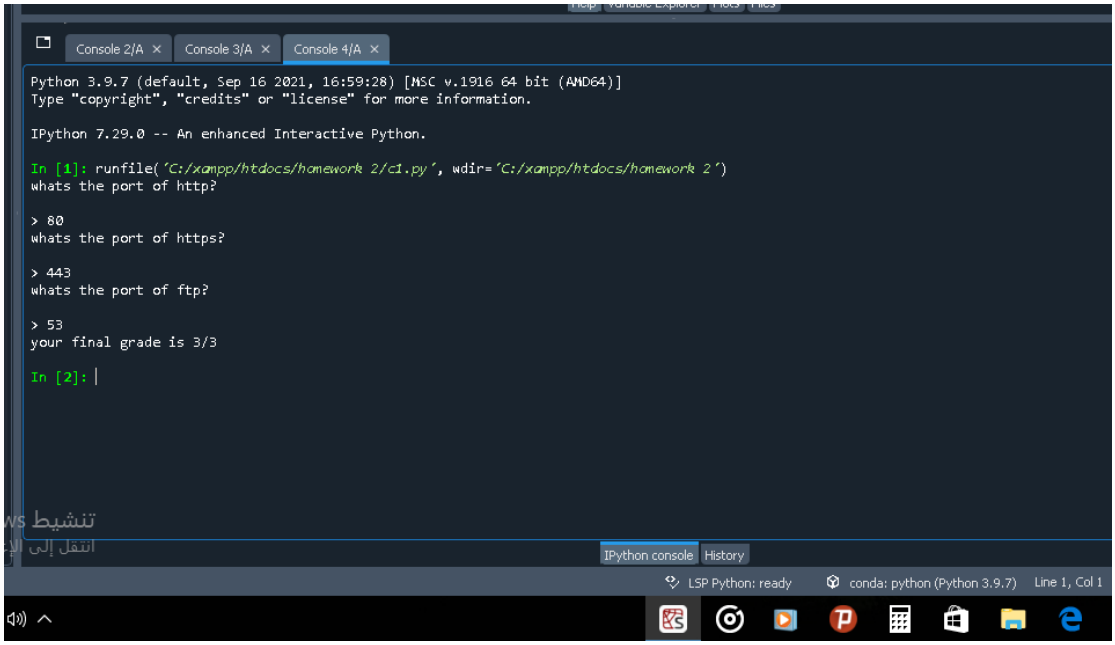

Console 2/A
Console 3/A
Console 4/A
Python 3.9.7 (default, Sep 16 2021, 16:59:28) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.
IPython 7.29.0 -- An enhanced Interactive Python.
In [1]: runfile('C:/xampp/htdocs/homework 2/server tcp.py', wdir='C:/xampp/htdocs/homework 2')
Server is running
client connected from : ('127.0.0.1', 60957)
Connected with('127.0.0.1', 60957)
whats the port of http?
whats the port of https?
whats the port of ftp?
client connected from : ('127.0.0.1', 61079)
Connected with('127.0.0.1', 61079)
whats the port of http?
whats the port of https?
whats the port of ftp?
IPython console
History
LSP Python: ready
conda: python (Python 3.9.7)
Line 1, Col 1
Console 2/A
Console 3/A
Console 4/A
Python 3.9.7 (default, Sep 16 2021, 16:59:28) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.
IPython 7.29.0 -- An enhanced Interactive Python.
In [1]: runfile('C:/xampp/htdocs/homework 2/client.py', wdir='C:/xampp/htdocs/homework 2')
whats the port of http?
> 80
whats the port of https?
> 443
whats the port of ftp?
> 53
your final grade is 3/3
In [2]:
IPython console
History
LSP Python: ready
conda: python (Python 3.9.7)
Line 1, Col 1



Question 2: Simple Website with Python Flask Framework

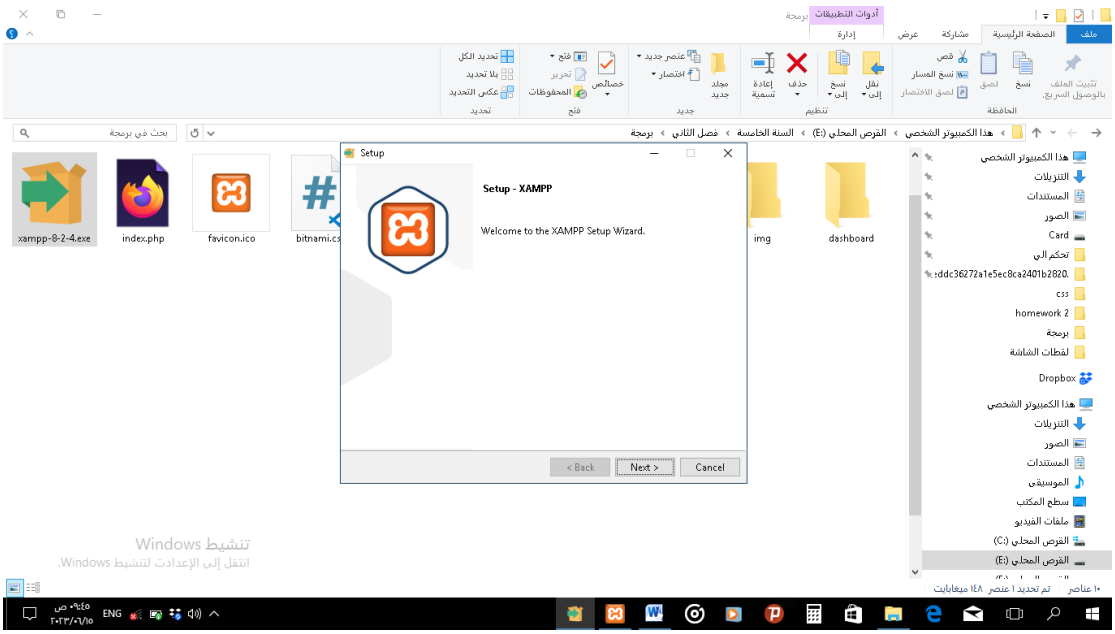
Create a simple website with multiple pages using Flask, HTML, CSS, and Bootstrap. The website should demonstrate your understanding of web design principles.

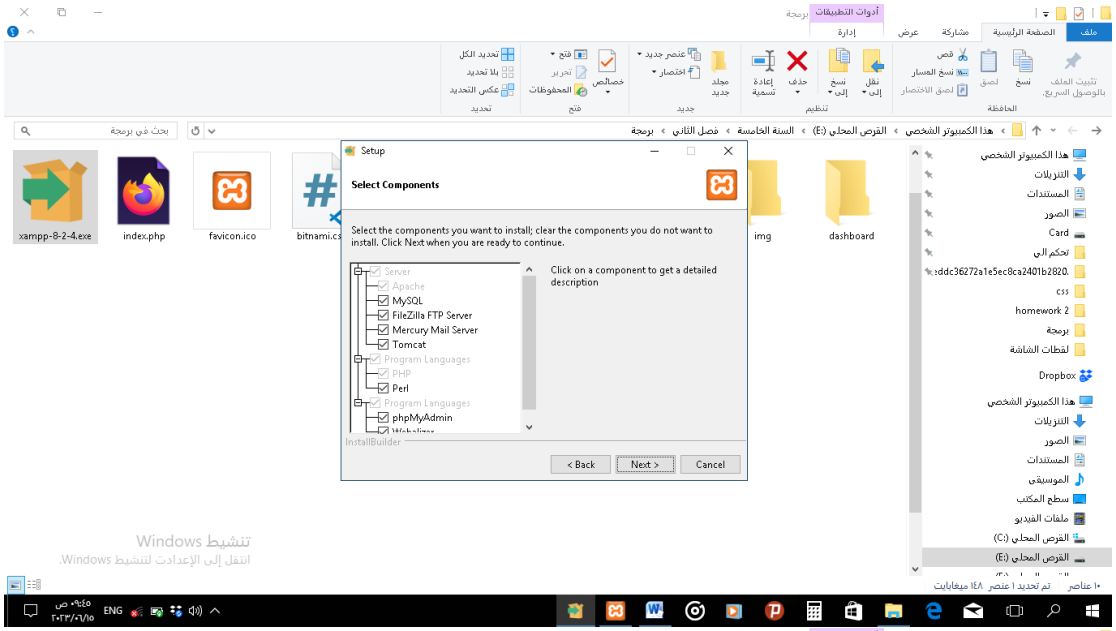
Requirements:

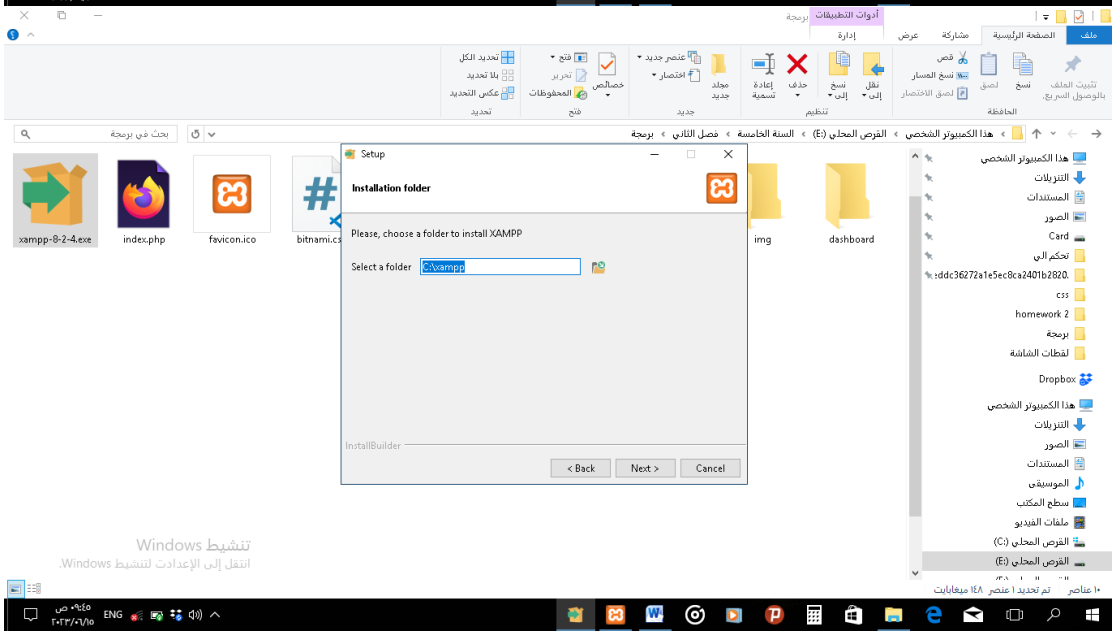
A. Set up a local web server using XAMPP, IIS, or Python's built-in server (using Flask).
B. Apply CSS and Bootstrap to style the website and make it visually appealing.
C. Ensure that the website is responsive and displays correctly on different screen sizes.
D. Implement basic server-side functionality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

الحل :

أولا : نقوم بثبيت حزمة الخادم xampp

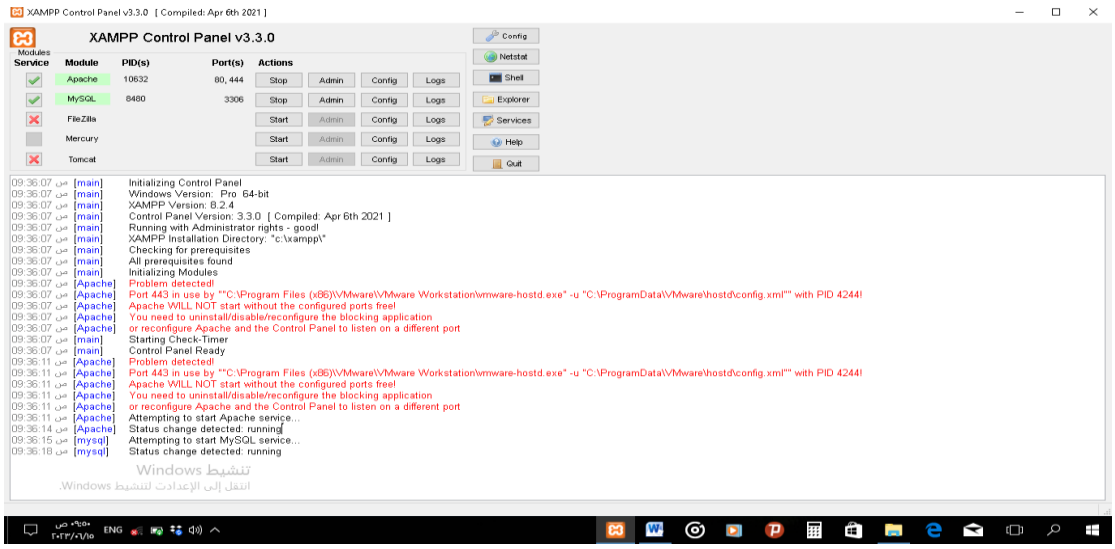



Setup
Select Components
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Server
Apache
MySQL
FileZilla FTP Server
Mercury Mail Server
Tomcat
Program Languages
PHP
Perl
Program Languages
phpMyAdmin
Click on a component to get a detailed description
InstallBuilder
< Back
Next >
Cancel
xampp-8-2-4.exe
index.php
favicon.ico
img
dashboard


Setup
Installation folder
Please, choose a folder to install XAMPP
Select a folder
C:\xampp
InstallBuilder
< Back
Next >
Cancel
xampp-8-2-4.exe
index.php
favicon.ico
img
dashboard

ثم نقوم بفتح ال **Xampp-control**

ونضغط على **start** لكل من **Apache,MySQL**



وبذلك يكون قد بدا بالعمل خادم **Xampp**

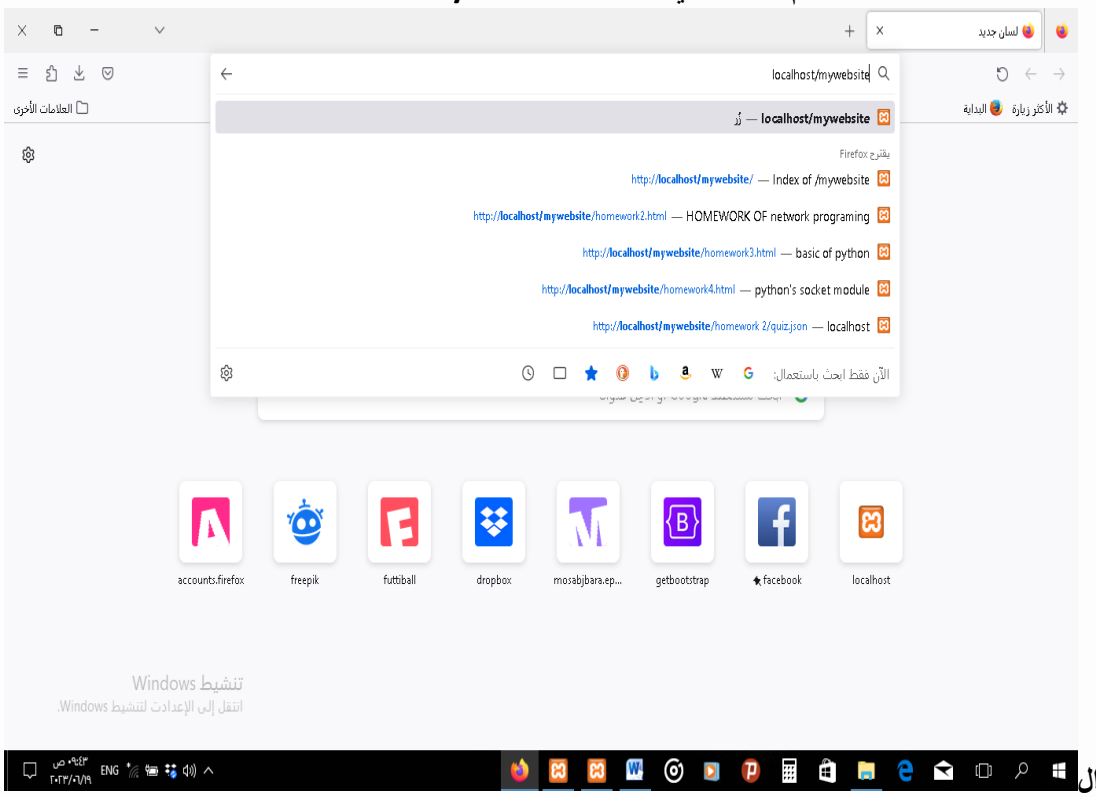
ثانيا: نفتح ملف داخل ال **Xampp** يدعى **htdocs**

ننشئ ملف فارغ

ونقوم بحفظ ملف **Html** بداخله

ثالثا: نفتح المتصفح وندخل في البحث الرابط التالي

اسم الملف الذي حفظ فيه مل**Localhost/html**



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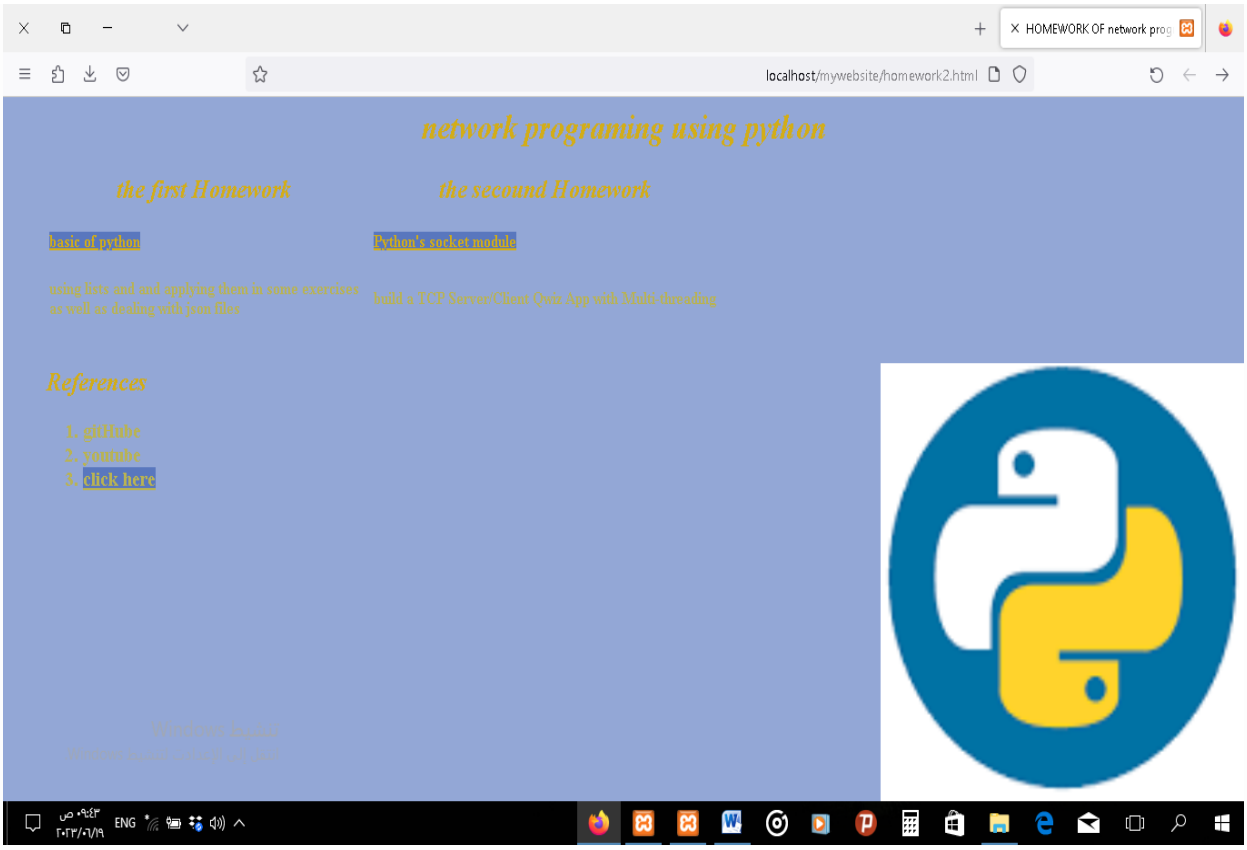


```
<html>
<head>
<title>HOMEWORK OF network programing</title>
<link rel="stylesheet"href="css/homework2.css">

</head>
<body>
    <h1>network programing using python</h1>
<ol><table>
    <tr>
        <th><h2>the first Homework</h2></th>
        <th>                </th>
        <th>                </th>
        <th>                </th>
        <th><h2>the secound Homework</h2></th>
    </tr>

    <tr>
        <td><h4><a href="homework3.html">basic of python</a></h4></td>
        <td>                </td>
        <td>                </td>
        <td>                </td>
        <td><h4><a href="homework4.html">Python's socket module</a></h4
></td>
```

```
    </tr>
     <tr>
        <td><h4>using lists and and applying them in some exercises<br>
as well as dealing with json files  </h4></td>
        <td>                </td>
        <td>                </td>
        <td>                </td>
        <td><h4>build a TCP Server/Client Qwiz App with Multi-
threading</h4></td>
    </tr>
</table></ol>
<ol><h2>References</h2>
<ol><h3>
    <li>gitHube</li>
    <li>youtube</li>
    <li><a id="tt" href="Introduction-to-Programming-using-
Python.pdf">click here</a></li>

</h3></ol></ol>
</body>
</html>
```