

King Hussein School for Information Technology

Department of Computer Science

Operating Systems Lab – CS11355

Semester: 2023/2024

Week 11 Assignment



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| **Student Name** |  |
| **Student Univ. ID** |  |
| **Total Mark** | **/ 10** |

# Lab Exercises:

1. **Write python program which create TCP connection between server and client and do the following: (You need to use datetime, hashlib, random modules)**
   1. When the client connect to a server, it will send one of the following commands (‘time’, ‘md5 STRING’, ‘random’)
   2. The server will receive the command and based on the command will send back data to the user:
      1. Time: the server will send back the current time using the datetime module.
      2. MD5: the server will take the string along with the md5 word and calculate the MD5 value for it and then send the hash to the client.
      3. Random: the server will generate a random number between 1,100 and will send it back to the user.

1. **Check server.py and client.py code and answer the questions below.**

**# Client**

*from socket import \**

*s = socket(AF\_INET, SOCK\_DGRAM)*

*host = '127.0.0.1'*

*port = 1234*

*buf =1024*

*addr = (host,port)*

*req = input("Enter the filename and the line number needed separated by comma: \n")*

*#Example: req = 'book2.txt, 5'*

*s.sendto(req.encode('ascii'), addr)*

*print("Data requested.")*

*data, addr = s.recvfrom(buf)*

*print(data.decode())*

*s.close()*

**# Server**

*from socket import \**

*host = '127.0.0.1'*

*port = 1234*

*s = socket(AF\_INET,SOCK\_DGRAM)*

*s.bind((host,port))*

*addr = (host,port)*

*buf=1024*

*data,addr = s.recvfrom(buf)*

*data = data.decode()*

*data = data.split(',')*

*f = open(data[0],'r')*

*lines = f.readlines()*

*index = int(data[1]) - 1*

*s.sendto(lines[index].encode('ascii'), addr)*

*s.close()*

* 1 - What modification(s) can you do to the code #1 and code #2 to make the server and client use the TCP Protocol?
* 2 - Modify the server code to send an error to the client if the file requested does not exist.
* 3 - Modify the server code to send an error to the client if the line requested does not exist.
* 4 - Modify the client code to request the first line if the client didn't write a line number in their request. Example req = 'book2.txt'