

Socket Programming
OS Project - Phase # 2

يعد الغش مخالفة أكاديمية وفقا للوائح والقوانين المعمول بها في جامعة قطر، وقد تصل عقوبة هذه المخالفة في بعض الحالات إلى الفصل النهائي من الجامعة على الطلاب تجنب القيام أو المشاركة في أي عمل يخالف ميثاق النزاهة الأكاديمية وإجراءات الاختبارات المعمول بها بجامعة قطر.

Cheating is an academic violation according to Qatar University rules and regulations, and in some cases, it may result in final dismissal from the University. Students should not under any circumstances commit or participate in any cheating attempt or any act that violates student code of conduct.

It is the right of the instructor to test the student's understanding of the project in any way during the demo and discussion session. So, a project that is 100% working might be may be graded (-100%) due to student not being able to explain a functionality they have implemented.

Please read the previous instructions box carefully before start working in your project.

Develop a Multithreaded Client-Server Java application with the following specifications. Note that this project is based on Phase # 1.

Server.java

1. The server VM will be listening continuously to port 1300 to client connections.
2. The server will run the script Network.sh to test connection to both clients (Client VM1 and Client VM2). Note that the **Network.sh** shell scripts will run after any client is connected to the server.
3. Client VM1 and Client VM2 can request system information (system.sh) from Server VM. Server will send the info as a **file** to both clients based on a request.
 - I. **The clients can request the system info from the server every 5 minutes.**
 - II. **The client must display the content of the received file.**
4. The Server must keep track of client's request. **Note: You can use array list to store client's info in the server side.**
5. The server must display information about all connected clients.
6. Implement synchronization to prevent concurrent requests for system info from the server.

Client1.java

- Client 1 VM will run both scripts login.sh and check.sh
- The client must display the results of both shell scripts on the terminal.

Client2.java

- Client 2 VM will run both scripts search.sh and clientinfo.sh
- The client must display the results of both shell scripts on the terminal

Instructions & Deliverables:

- 1- In MS-Word document submit the following:
 - Cover page includes necessary details of the group members (Student Name, Student ID)
 - In a table format, specify each group member tasks and the contribution percentage into the project.
 - Copy of the output console view for each shell script.
- 2- Submit your work as one zipped file no later than **the below due date**

Submission - Due to 30 November, 2024

- Call the Zip file (StuentNAME1_StudentNAME2_StudentNAME3_StudentNAME4)
- 3- Add comments when necessary in your program.
 - 4- Copying and/or plagiarism (-100%).
 - 5- Program does not run (Errors) (-50%).
 - 6- In case of late submission, (-10%) for each day of delay (Max 3 days delay).
 - 7- A group of three to four students can work on the project.
 - 8- Team members are required to meet regularly for discussion and workload distribution.
 - 9- It is the right of the instructor to use any way of testing the student in the discussion and demo session, and according to that in some cases (100%) graded project may be down to (-100%) graded project.
 - 10- Discussion & Demo 50%. + Student Work 50%.