Networking Assignment

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The course of networking requires developing a program that communicate with other programs over the network.
The students may team up in groups of up to 2 students (no exceptions).

Description:

Each group need to provide the implementation of a program that can run in 2 different instances (client id 1 and client id 2). It should be possible to run 2 instances of the program (run the same code on two different machines) which will communicate with each other.
The teacher will provide the IP address and Port number of the server to connect.
The first instance of the program (client id 1) should request establishing a connection with the server.
The server will reply with a welcome message (a string).
Client id 1 will send a string to the server with the following format:

Implementation requirements and behaviour description:

```
{
        "studentnr1": "Your_studentnumber",
        "studentnr2": "The student number of your teammate"
        "classname": "YOURCLASSCODE",
        "clientid": 1 or 2,
        "teamname": "YOUR TEAM NAME SHOULD BE HERE",
        "ip": "YOUROWNIPADDRESS",
        "secret": "",
        "status": ""
}
```

Format of the message

example (in json object):

```
{
        "studentnr1": "0923456",
        "studentnr2": "0934567"
        "classname": "INF2A",
        "clientid": 1,
        "teamname": "Team1",
        "ip":"192.168.1.2",
        "secret": "",
        "status": ""
}
```

The server will reply using the same format with added information on *secret* and *status*.
At that point client id 1 should check the status, if the status is "waiting for message 2", it should forward the received information from the server to client id 2.
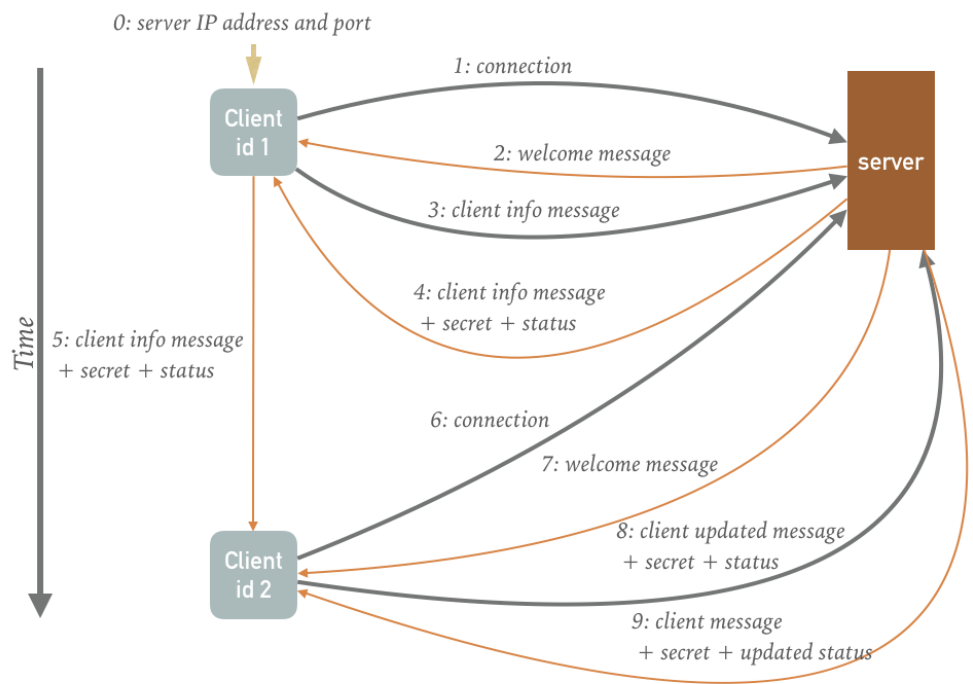If the status does not correspond, connection loss or no message received back in a few seconds, there might have been a mistake in the format sent to the server.

Client id 2 will stay in listening mode until it receives the message from Client id 1 (forwarded from the server).
At this point the Client id 2 will read the information and modify them according to its own details (student number, client id, ip; all should be adapted). The value of "studentnr1" and "studentnr2" must be swapped as well (in case your team

consists of two members). Since the server is expecting that "studentnr1" is always referring to the sender of the message.
The server will reply client id 2 with the final message in the same format with updated status.

Schema of the connections

Extra info:

Python 3 is the official language for the project, and it is mandatory to **USE low level socket, no other library is allowed!**
The protocol is based on TCP/IP, port and address could be changing and they will be communicated from the teacher in case of need.
Byte encoding is UTF-8.
We are using little endianness ordering.

The testing ground does not grant automatic passing grade.
As by the course description*, there is always the possibility of an oral check* to verify/clarify the completeness and understanding of the code submitted.