Networks Lab – Torrent: the *ouverture* (Week 7)

Nikita Bogomazov

Innopolis University

n.bogomazov@innopolis.ru

March 7, 2019

For this task:

- This time we will build the foundation for our future labs
- You will create a program which resembles both client and server in its behavior (node)
- Then you will connect with others using **Innopolis** network and synchronize the known nodes
- The result of the lab should be a working node with a database of other nodes which it can ping to see if they are still in the network AND screenshots of your node’s terminal showing that it has found other nodes in the network

Let’s start with combining our client and server from previous labs.

Note that you will probably need TCP for this task, but you can use UDP if you want (good luck)

After combining your previous programs you have to separate the client connection logic into a thread

On each tick of the “server” loop you probably want to ping known nodes to see who is alive

Your final solution:

- should be able to ping known hosts (you will have to come up with some sort of handshake for that)
- should be able to add new connections (if you're using tcp) to known nodes (I suggest hashmap to store them)
- has to print a notice when it gets a new known node (Smthing like "Got new node! @Name@:@IP@:@port@")

When you will cooperate with other students to check the functionality one of you will be chosen as a "first node" who's ip:port will be hard coded in your program (Or you can take it as an input once your node starts).

Please, submit your code and screenshots as **1 (one) archive**