

Programming Assignment 4

CS550 - Advanced OS

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README

The server and client program are implemented using default modules from python3.8.3. There are no additional requirements. No separate scripts for deployment need to be executed to start the program, executing the python Nodes will do the work.

Executing the program in any python3.6+ shall work. Although a virtual environment 'venv' used for development has been included in the code directory. To activate the environment execute the following command in the terminal from the 'code' directory.

```
$source ./venv/bin/activate
```

(venv) Before the user is an indicator of active environment. To deactivate after the execution is over, simply enter: \$deactivate.

Node

To start the Node, just the node.py python script needs to be executed as following:

```
$python3 node.py --port <between 9000-9129>
```

Node needs to be between 9000 and 9129 as the Node scans for other nodes in this range and makes a list of active nodes in the network dynamically.

You can manually pass arguments to the Node during the time of initialization to specify Host IP Address, Port Number, hosted file directory and a test mode flag. As follows:

```
$python3 node.py --ip <IP Address> --port <PORT> --dir <Directory> -t  
<bool>
```

`--ip` is used to pass IP Address manually (default: Self Host)
`--port` is used to pass port number to bind to as argument. (default:9000)
`--dir` is used to declare the hosted files directory. (default: ./hosted_files)
`-t` is a Boolean flag followed by True or False used for testing and is not to be used otherwise.
`--help` this to check the flags.

It is advised to not use `--ip` since the Node scans for other Nodes on the same machine in the port Range 9000-9129.

After the Node starts, events are logged at “./logs/<port>.log” in code directory. This is done to keep the user interface clean to interact with. Node will need user interaction from time to time. Instructions for interaction are mentioned in the program and printed in console.

To shutdown the Node, Keyboard Interrupt the Node by pressing ‘ctrl’ + ‘c’ keys.