COMP3331Assignment

BLUETRACE PROTOCOL SIMULATOR REPORT

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Program Design

Overview

This assignment is to implement a BlueTrace protocol simulator based on one server and multiple clients.

Layer message format

TCP for clients communicate with server

UDP for clients communicate with each other (beaconing parts)

Programming environment

Python 3

How system works

Step 1: run 'python3 server.py < server_port> <block_duration>' command

Step 2: run 'python3 client.py <server_IP> <server_port> <client_udp_port>' on different terminals for different users

Programming：

Client executes steps：

1. Read contactlog.txt
2. Start Thread of receive UDP connect
3. Start Thread of check contact log valid (3min)
4. Connect server
5. Input username
6. Input password
7. Login

Server executes steps：

1. Read credentials.txt, tempIDs.txt
2. Start Thread of check tempID valid (15min)
3. Start thread and accept client.

Module：

Client：

```
import socket
import threading
import time
import sys
```

Service：

```
import socket
import threading
import time
import sys
import random
```

Notes for peer to peer part:

When a user tempID in the Contact log expired, the server will automatically generate a new tempID. If a client uploads a contact log that contains an expired tempID, the username will not be found through the expired tempID. And prompt in the program: "No user of the tempID was found, it is possible that the user tempID has been updated"
On the client side, there is a thread checking the contact log validity, the default log retention time is 3 minutes, beyond which the log will be automatically cleared. When you upload the contact log file to the server using the command: ‘Upload_contact_log’, you may receive an empty contact log file.

Reference

Read and learn ‘UDPClient3.py’ and ‘UDPServer3.py’ provided before coding my own program