

Files in the directory:

1. `pgllib.py`
It contains some helper functions that help us establish communication between the server and the client.
 - `getPubKey()` Get the public key of server/client's.
 - `encrypt(message, pubkey)` Encrypt the message with a public key.
 - `decrypt(cipher)` Decrypt the message by a private key.
 - `checksum(data)` Check the sum of the message received.
2. `udpserver.py`
It contains two functions that start the server and receive messages from the client.
3. `udpclient.py`
It contains two functions that send messages to the server.

To run/test the code:

1. Change the hostname and port in "`udpserver.py`" and "`udpclient.py`" to your own hostname and port, and save your change.
2. Send all of these three files from local to remote using the command "`scp (local address) (remote address)`"

After that, run "`ls`" to see if these files have been uploaded successfully.

```
Last login: Tue Feb 22 01:12:59 2022 from 10.192.91.159
zemingg2@is-student00:~$ ls
__pycache__  pgllib.py  udpclient.py  udpserver.py
zemingg2@is-student00:~$
```

3. Connect to two different student machines in two terminal windows with the command "`ssh (remote address)`"

Determine which terminal is the server and which terminal is the client.

```
A fossa is a large carnivorous mammal that is indig
of Madagascar. They have super duper long tails and
six feet in length. Please don't anger the Fossa.

*****
Last login: Tue Feb 22 01:12:59 2022 from 10.192.91.
zemingg2@is-student00:~$
```

4. In the server command line window, type "`python3 udpserver.py [port]`"

```
zemingg2@is-student00:~$ python3 udpserver.py 41002
***** PART 2 *****
Welcome to UDP Server.
Waiting ...
Received message:  b'Hello World'
Received checksum: 1243066710
Server's checksum: 1243066710
The server has successfully received the message!
```

5. In the server command line window, type "`python3 udpclient.py [hostname] [port] [test message]`"

Notice to not compile the client file in the server window!

```
zemingg2@is-student01:~$ python3 udpclient.py student00.ischool.illinois.edu 41002 "Hello World"
***** PART 2 *****
Checksum is: 1243066710
Client has successfully sent the message!
The two checksums are the same!
RTT is: 8253.097534179688 microseconds
```