Documentation for homework 4

Usage: we first execute the make command in the module directory, insert the hw4secws.ko module into the kernel. Then we go to the user directory, apply the command: python main.py load_rules <rules path>, now if we want to analyze http traffic then we firstly (before activating any http server) go to the http folder and run: sudo **python3** http_proxy.py. in case of ftp we should go to the ftp folder and run sudo python ftp.py.

Note: I didn't finish the ftp proxy, it's not working, but the http does.

Implementation: for implementing the connection table I implemented a small tcp finite state machine which its' transition function moves by the tcp packet flags ofc. The tcp state machine is implemented by a switch case on it's states and a handler for each one. For the connection table itself, I defined a proper struct and I implemented a singly linked list for it.

The rule table and log list are implemented as in hw3 ofc.