- Socket programming with Zero MQ
  - pip install pyzmq
  - pip install tornado
- Special TCP sockets, not classical Unix sockets
- Support for different messaging patterns
  - Request/Response
  - Publish/Subscribe
  - ... and many more

- Types of sockets
- Request/response
  - REQ client-side
  - REP server-side
  - send recv send recv ...
- Publish/subscribe
  - PUB server-side
  - SUB client-side
  - (recv) send recv
- Chatroom app:
  - DS\_Examples/misc/chatroom\_sockets\_server.py

1. Modify the client so that it listens to the SUB socket and prints a message as soon as a message arrives. The program should listen asynchronously and print the message to the console.

2. Modify the client to check the acknowledgement of the server as soon as a message is sent

- 3. Modify client/server to add the following functionality
  - The client sends username to the server
  - Server returns "OK" if there is no active session for that user, or "ERR" otherwise
  - As soon as client disconnects, the client sends a message to the server announcing that it will disconnect next. Then the server forgets the user