

# Networked Applications NWEN 243

## Lab Exercise 1, worth 2 pts

### Objectives

- Experience using UDP
- Next week, you will extend this to TCP

### Preliminaries

1. This lab is best done in pairs.
2. We will be writing programs that you execute from the **shell** command line.

### The Exercise

UDP – or user datagram protocol, is a datagram transport layer service. Think sending a letter in an envelope, each message is addressed, but sent independently, without any guarantees on order of delivery or loss.

To use UDP you will need to call the Socket API. The socket API is modeled on the file system, so uses READ and WRITE to access the network.

These are the things you need to do in your program:

1. Decide who is writing the client, and who is writing the server
2. Create a buffer (Array of 1024) of type char, so the OS can copy the network data to and from your program.
3. Create the socket (Type SOCK\_DGRAM)
4. Set the addresses for the socket
5. If you are the client, send a random number.
  - a. Then wait for a reply
6. If you are the server, wait for a datagram
  - a. Increment the number and send it back'
7. If you are the client, increment the number
  - a. Send it back
8. Goto 6.

**Demo** your work to your lab demonstrator.