C++ Week 12 UDP

Exercise 1

1. Create a UDP server (initialize DLL, create socket and bind) and ensure the socket is created using the appropriate UDP flags (see this week's presentation).
2. Now create a UDP client within a separate project. Ensure you initialize the DLL and create a socket using the appropriate UDP flags.
3. Add the code necessary to both the Client and server so that when both are running the user can type "GET TIME" into the client and the server will return the current time which will then be displayed on the client.

Exercise 2

Extend the server so that the user can type "GET POSITION" into the client and the server will return a vector (Vector3D).

Hint define the Vector3D class below along with a global vector named position.

```
class Vector3D {
  public:
        float x, y, z;
    Vector3D(float X, float Y, float Z) : x(X), y(Y), z(Z) { }
};

Vector3D position(1.0,2.0,3.0);
```

And use the sprintf function to copy the vector values into a char array ready for transmittion.

Exercise 3

Add appropriate loops to both server and client, so that the client can request both the time and position a number of times without having to restart.

Exercise 4

Modify the server so that the position's x and y values are incremented by 1.0 every 500 milliseconds within a separate thread. The Client should be able to retrieve the current position.