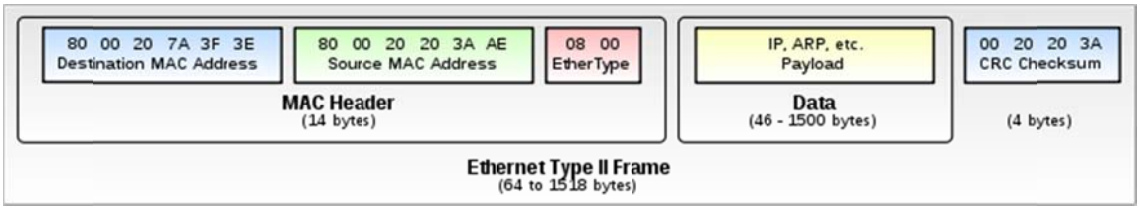
Hints for Project 1

In order to understand project 1, you need to have some knowledge on Ethernet frame. It looks like the following (Preamble is omitted since it's used for synchronization):



The MAC header contains three parts: Destination MAC address, Source MAC address and frame type, with a total length of 14 bytes. Here, frame type (Ether Type) indicates the payload data type. Two common types are 0x0800 (IP) and 0x0806 (ARP).

You need to output MAC header (14 bytes) and the first 28 bytes from the payload in project 1. A good practice is to run the example1.cpp first and here is the brief procedure:

1. Find the network interface name, by using command "ifconfig" in your computer.

2. Replace the name in example1.cpp, the old name is "eth1" in the main function.

3. Compile the code. Run "g++ example1.cpp frameio2.cpp util.cpp -lpthread -o out" from the terminal.

4. Run the code. Using "./out" in the terminal.

You should see that this example code captures IP and ARP frames.

(If there's no traffic information, make sure you changed the interface name, if still no output, ping your machine from other computers.)

Now, for your own program, you can borrow some ideas from the example code.

1. Define a frameio structure.
2. Open the interface.
3. Using a while loop to receive frames. (if the frame length is less than 42, discard it)
4. Print the first 42 bytes, with a space between each byte and add a new line after 22 bytes for extra clarity.