analysis_pcap_arp.py - ARP Packet Capture

External libraries used : dpkt

dpkt is used to read pcap files for packet capture
sys is used to read in input from the terminal
struct is used for formating byte arrays into ip and mac address strings

Instructions for how to run the program :

analysis_pcap_arp.py takes in input from the terminal.
The first argument after anaylsis_pcap_arp in the terminal will be the name of the pcap file that will be read and analyzed.

An example input would be:

```
python analysis_pcap_arp.py assignment3_my_arp.pcap
```

Program logic :

Get each packet in the pcap file and read it byte by byte. If the packet is an ARP packet, I create an ARP header for the packet and fill in the header information : Hardware type (2 bytes), Protocol type (2 bytes), Hardware size (1 byte), Protocol size (1 byte), Opcode (2 bytes), Sender MAC address (6 bytes), Sender IP address (6 bytes), Target MAC address (6 bytes), Target IP address (6 bytes). I keep track of which ARP packets are ARP requests and which are ARP responses by checking each packet’s Opcode. I also count the total number of ARP packets read.
I then print out the first ARP exchange with the first ARP response and find its corresponding ARP request by comparing both sender and target values.