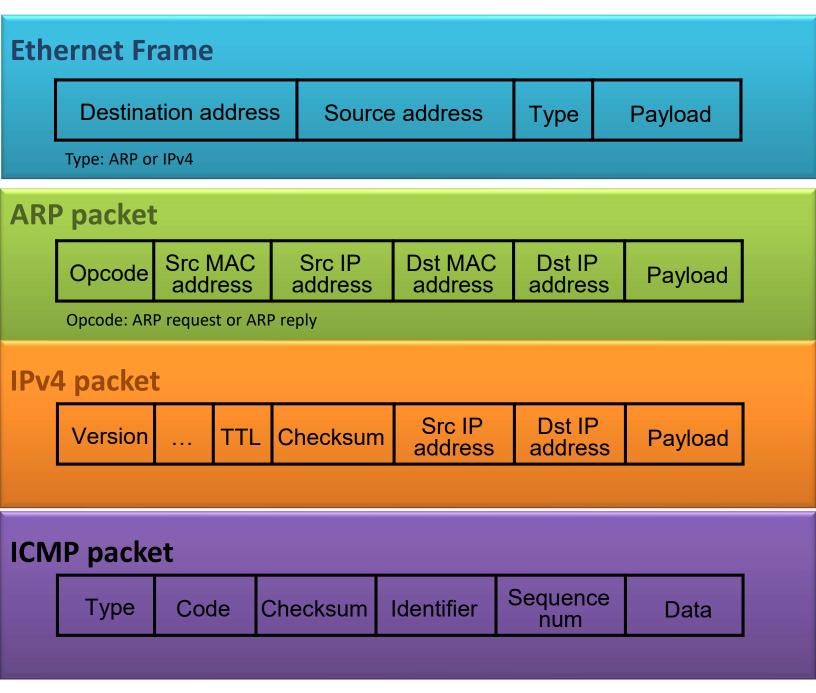
Project 1 Packet Format



IPv4 header also contains header length, total length, ID, flags, fragment offset, and protocol fields.

Forwarding Pseudocode: ARP

- 1. Find input network interface: findIfaceByName.
 Drop packet if interface is unknown
- 2. Read ethernet header and check the eth_type field. Ignore all but ARP and IPv4 types
- 3. If eth_type is ARP:
 - a. If ARP Request packet:
 - Prepare and send ARP response packet
 - b. If ARP Response packet:
 - record IP-MAC mapping information in ARP cache
 - send out all enqueued packets for ARP entry

Forwarding Code: IPv4

- 4. If eth_type is IPv4:
 - verify checksum, length, discard invalid packets
 - if packet is to router: GO TO 7
- 5. Use the Longest Prefix Match algorithm to find a next-hop IP address in the routing table
- 6. Lookup ARP cache for MAC address mapped to the next hop destination IP address
 - -- If valid entry found: forward packet
 - Else: queue received packet and send ARP request to discover the IP-MAC mapping.
- 7. If ICMP packet:
 - handle Ping: send ICMP echo reply back