COMP 7003
Assignment 2
Testing

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Test	Expected	Actual	Screenshot
No arguments	fail	fail	Test 1
-x	fail	fail	Test 2
Empty count	fail	fail	Test 3
Non-integer count	fail	fail	Test 4
Negative count	pass	pass	Test 5
Count of 0	pass	pass	Test 6
Too many arguments	fail	pass	Test 7
Empty interface	fail	fail	Test 8
Invalid interface	fail	fail	Test 9
interface, 1, tcp	pass	pass	Test 10
interface, 2, udp	pass	pass	Test 11
interface, 10, icmp	pass	pass	Test 12
interface, 1, dns	pass	pass	Test 13
interface, 2, arp	pass	pass	Test 14
any, 2, arp	pass	pass	Test 15

Tests

Test 1

```
human@humanpc ~/s/N/n/source (main) [2]> sudo python main.py
[sudo] password for human:
usage: main.py [-h] -i INTERFACE [-f FILTER] -c COUNT
main.py: error: the following arguments are required: -i/--interface, -c/--count
human@humanpc ~/s/N/n/source (main) [2]>
```

Test 2

```
human@humanpc ~/s/N/n/source (main)> sudo python main.py -x
[sudo] password for human:
usage: main.py [-h] -i INTERFACE [-f FILTER] -c COUNT
main.py: error: the following arguments are required: -i/--interface, -c/--count
human@humanpc ~/s/N/n/source (main) [2]>
```

Test 3

```
human@humanpc ~/s/N/n/source (main) [2]> sudo python main.py -c -i enp5s0 -f udp
usage: main.py [-h] -i INTERFACE [-f FILTER] -c COUNT
main.py: error: argument -c/--count: expected one argument
human@humanpc ~/s/N/n/source (main) [2]>
```

Test 4

```
human@humanpc ~/s/N/n/source (main) [2]> sudo python main.py -c nice -i enp5s0 -f udp
usage: main.py [-h] -i INTERFACE [-f FILTER] -c COUNT
main.py: error: argument -c/--count: invalid int value: 'nice'
human@humanpc ~/s/N/n/source (main) [2]>
```

Test 5

```
human@humanpc ~/s/N/n/source (main) [2]> sudo python main.py -c -2 -i enp5s0 -f udp
Starting packet capture on enp5s0 with filter: udp
Packet callback triggered.
Packet capture completed on enp5s0.
human@humanpc ~/s/N/n/source (main)>
```

Test 6

```
human@humanpc ~/s/N/n/source (main)> sudo python main.py -c 0 -i enp5s0 -f udp
Starting packet capture on enp5s0 with filter: udp
Packet callback triggered.
Packet capture completed on enp5s0.
human@humanpc ~/s/N/n/source (main)>
```

Test 7

```
human@humanpc ~/s/N/n/source (main)> sudo python main.py -c 0 -i enp5s0 -f udp -f tcp
Starting packet capture on enp5s0 with filter: tcp
Packet callback triggered.
Packet capture completed on enp5s0.
human@humanpc ~/s/N/n/source (main)>
```

Test 8

```
human@humanpc ~/s/N/n/source (main)> sudo python main.py -c 1 -i -f udp
usage: main.py [-h] -i INTERFACE [-f FILTER] -c COUNT
main.py: error: argument -i/--interface: expected one argument
human@humanpc ~/s/N/n/source (main) [2]>
```

Test 9

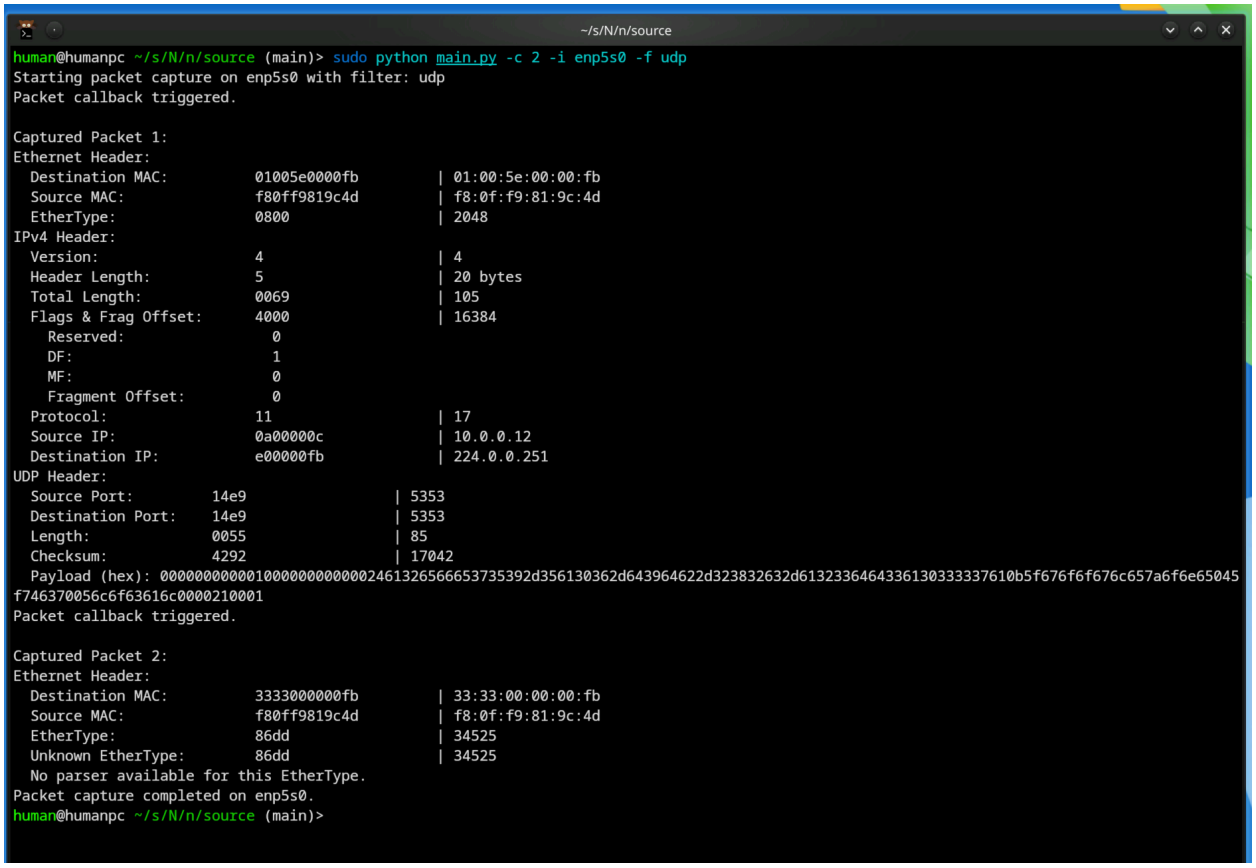
```
human@humanpc ~/s/N/n/source (main) [2]> sudo python main.py -c 1 -i eth0 -f udp
Error: The specified interface 'eth0' does not have an assigned global IP address.
human@humanpc ~/s/N/n/source (main)>
```

Test 10

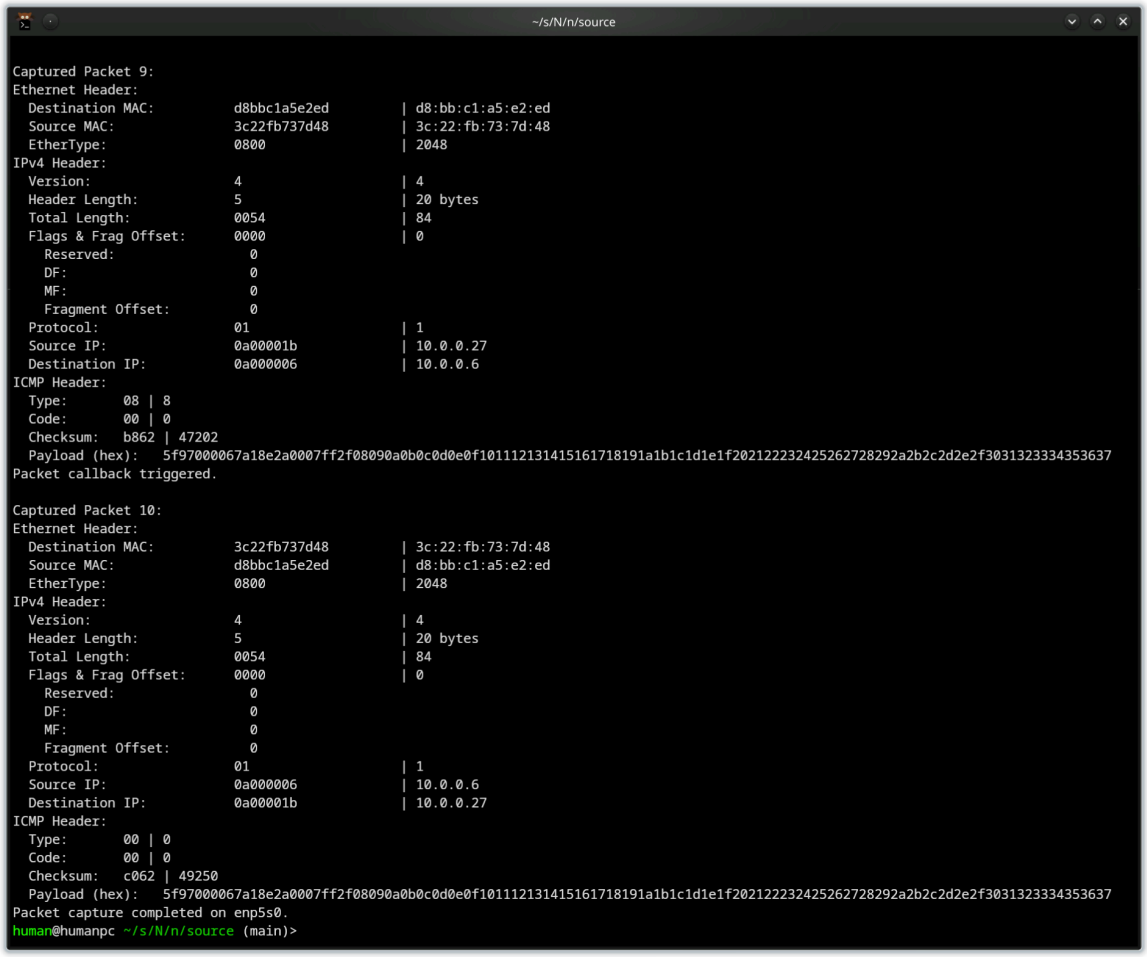
```
human@humanpc ~/s/N/n/source (main)> sudo python main.py -c 1 -i enp5s0 -f tcp
Starting packet capture on enp5s0 with filter: tcp
Packet callback triggered.

Captured Packet 1:
Ethernet Header:
  Destination MAC:          6462662f0682         | 64:62:66:2f:06:82
  Source MAC:               d8bbc1a5e2ed         | d8:bb:c1:a5:e2:ed
  EtherType:                0800                 | 2048
IPv4 Header:
  Version:                  4                    | 4
  Header Length:            5                    | 20 bytes
  Total Length:             006a                 | 106
  Flags & Frag Offset:      4000                 | 16384
    Reserved:                 0
    DF:                       1
    MF:                       0
    Fragment Offset:          0
  Protocol:                 06                   | 6
  Source IP:                0a000006             | 10.0.0.6
  Destination IP:           cdc40685             | 205.196.6.133
TCP Header:
  Source Port:              8cf5                 | 36085
  Destination Port:         698a                 | 27018
  Sequence Number:          c4b45436             | 3300152374
  Acknowledgment Number:    fea4803f             | 4272193599
  Data Offset:              8                    | 32 bytes
  Reserved:                 0b0                  | 0
  Flags:                    0b11000              | 24
    NS:                 0
    CWR:                0
    ECE:                0
    URG:                0
    ACK:                1
    PSH:                1
    RST:                0
    SYN:                0
    FIN:                0
  Window Size:              6f00                 | 28416
  Checksum:                 deab                 | 57003
  Urgent Pointer:           0000                 | 0
  Payload (hex):            0101080a63b2ba3a5ebdaf9e1703030031fccdcde1ba308fd9d32da7d3c87a31a833649d30bd79d7babfb0196184a0b1399880ab132462d2f2
00f1e81faa09ad17af
Packet capture completed on enp5s0.
human@humanpc ~/s/N/n/source (main)>
```

Test 11


~/s/N/n/source
human@humanpc ~/s/N/n/source (main)> sudo python main.py -c 2 -i enp5s0 -f udp
Starting packet capture on enp5s0 with filter: udp
Packet callback triggered.
Captured Packet 1:
Ethernet Header:
Destination MAC: 01005e0000fb | 01:00:5e:00:00:fb
Source MAC: f80ff9819c4d | f8:0f:f9:81:9c:4d
EtherType: 0800 | 2048
IPv4 Header:
Version: 4 | 4
Header Length: 5 | 20 bytes
Total Length: 0069 | 105
Flags & Frag Offset: 4000 | 16384
Reserved: 0
DF: 1
MF: 0
Fragment Offset: 0
Protocol: 11 | 17
Source IP: 0a00000c | 10.0.0.12
Destination IP: e00000fb | 224.0.0.251
UDP Header:
Source Port: 14e9 | 5353
Destination Port: 14e9 | 5353
Length: 0055 | 85
Checksum: 4292 | 17042
Payload (hex): 00000000000100000000000024613265666537353 92d356130362d643964622d323832632d6132336464336130333337610b5f676f6f676c657a6f6e65045
f746370056c6f63616c0000210001
Packet callback triggered.
Captured Packet 2:
Ethernet Header:
Destination MAC: 3333000000fb | 33:33:00:00:00:fb
Source MAC: f80ff9819c4d | f8:0f:f9:81:9c:4d
EtherType: 86dd | 34525
Unknown EtherType: 86dd | 34525
No parser available for this EtherType.
Packet capture completed on enp5s0.
human@humanpc ~/s/N/n/source (main)>

Test 12


~/s/N/n/source
Captured Packet 9:
Ethernet Header:
Destination MAC: d8bbc1a5e2ed | d8:bb:c1:a5:e2:ed
Source MAC: 3c22fb737d48 | 3c:22:fb:73:7d:48
EtherType: 0800 | 2048
IPv4 Header:
Version: 4 | 4
Header Length: 5 | 20 bytes
Total Length: 0054 | 84
Flags & Frag Offset: 0000 | 0
Reserved: 0
DF: 0
MF: 0
Fragment Offset: 0
Protocol: 01 | 1
Source IP: 0a00001b | 10.0.0.27
Destination IP: 0a000006 | 10.0.0.6
ICMP Header:
Type: 08 | 8
Code: 00 | 0
Checksum: b862 | 47202
Payload (hex): 5f97000067a18e2a0007ff2f08090a0b0c0d0e0f101112131415161718191a1b1c1d1e1f202122232425262728292a2b2c2d2e2f3031323334353637
Packet callback triggered.
Captured Packet 10:
Ethernet Header:
Destination MAC: 3c22fb737d48 | 3c:22:fb:73:7d:48
Source MAC: d8bbc1a5e2ed | d8:bb:c1:a5:e2:ed
EtherType: 0800 | 2048
IPv4 Header:
Version: 4 | 4
Header Length: 5 | 20 bytes
Total Length: 0054 | 84
Flags & Frag Offset: 0000 | 0
Reserved: 0
DF: 0
MF: 0
Fragment Offset: 0
Protocol: 01 | 1
Source IP: 0a000006 | 10.0.0.6
Destination IP: 0a00001b | 10.0.0.27
ICMP Header:
Type: 00 | 0
Code: 00 | 0
Checksum: c062 | 49250
Payload (hex): 5f97000067a18e2a0007ff2f08090a0b0c0d0e0f101112131415161718191a1b1c1d1e1f202122232425262728292a2b2c2d2e2f3031323334353637
Packet capture completed on enp5s0.
human@humanpc ~/s/N/n/source (main)>

Test 13

```
human@humanpc ~/s/N/n/source (main)> sudo python main.py -c 1 -i enp5s0 -f dns
Starting packet capture on enp5s0 with filter: udp and port 53
Packet callback triggered.

Captured Packet 1:
Ethernet Header:
  Destination MAC:          6462662f0682          | 64:62:66:2f:06:82
  Source MAC:               d8bbc1a5e2ed          | d8:bb:c1:a5:e2:ed
  EtherType:                0800                  | 2048
IPv4 Header:
  Version:                  4                     | 4
  Header Length:            5                     | 20 bytes
  Total Length:             0040                  | 64
  Flags & Frag Offset:      0000                  | 0
    Reserved:                 0
    DF:                       0
    MF:                       0
    Fragment Offset:          0
  Protocol:                 11                    | 17
  Source IP:                0a000006              | 10.0.0.6
  Destination IP:           0a000001              | 10.0.0.1
UDP Header:
  Source Port:          8008                | 32776
  Destination Port:     0035                | 53
  Length:               002c                | 44
  Checksum:             1444                | 5188
  Payload (hex): 8a6301000001000000000000470696e6709617263686c696e7578036f72670000010001
DNS Header:
  Transaction ID:       8a63                | 35427
  Flags:                0100                | 256
    QR:                                     | 0
    Opcode:                                 | 0
    AA:                                     | 0
    TC:                                     | 0
    RD:                                     | 1
    RA:                                     | 0
    Z:                                      | 0
    RCODE:                                  | 0
  Questions:            0001                | 1
  Answer RRs:           0000                | 0
  Authority RRs:        0000                | 0
  Additional RRs:       0000                | 0
  Payload (hex): 0470696e6709617263686c696e7578036f72670000010001
Packet capture completed on enp5s0.
human@humanpc ~/s/N/n/source (main)>
```

Test 14

```
human@humanpc ~/s/N/n/source (main)> sudo python main.py -c 2 -i enp5s0 -f arp
Starting packet capture on enp5s0 with filter: arp
Packet callback triggered.

Captured Packet 1:
Ethernet Header:
  Destination MAC:          ffffffffffff          | ff:ff:ff:ff:ff:ff
  Source MAC:               f4e2c651474f          | f4:e2:c6:51:47:4f
  EtherType:                0806                  | 2054
ARP Header:
  Hardware Type:            0001                  | 1
  Protocol Type:            0800                  | 2048
  Hardware Size:            06                    | 6
  Protocol Size:            04                    | 4
  Operation:                0001                  | 1
  Sender MAC:               f4e2c651474f          | f4:e2:c6:51:47:4f
  Sender IP:                0a000009              | 10.0.0.9
  Target MAC:               000000000000          | 00:00:00:00:00:00
  Target IP:                0a0000f5              | 10.0.0.245
Packet callback triggered.

Captured Packet 2:
Ethernet Header:
  Destination MAC:          ffffffffffff          | ff:ff:ff:ff:ff:ff
  Source MAC:               f4e2c651474f          | f4:e2:c6:51:47:4f
  EtherType:                0806                  | 2054
ARP Header:
  Hardware Type:            0001                  | 1
  Protocol Type:            0800                  | 2048
  Hardware Size:            06                    | 6
  Protocol Size:            04                    | 4
  Operation:                0001                  | 1
  Sender MAC:               f4e2c651474f          | f4:e2:c6:51:47:4f
  Sender IP:                0a000009              | 10.0.0.9
  Target MAC:               000000000000          | 00:00:00:00:00:00
  Target IP:                0a0000f5              | 10.0.0.245
Packet capture completed on enp5s0.
human@humanpc ~/s/N/n/source (main)>
```

Test 15

```
human@humanpc ~/s/N/n/source (main)> sudo python main.py -c 2 -i any -f arp
[sudo] password for human:
Available interfaces: ['lo', 'enp5s0', 'wlo1', 'docker0', 'br-a5c1997e3c41', 'br-b67c5afb6ccc', 'vethc2022ce']
Starting packet capture on enp5s0
Starting packet capture on enp5s0 with filter: arp
Starting packet capture on docker0
Starting packet capture on docker0 with filter: arp
Starting packet capture on br-a5c1997e3c41
Starting packet capture on br-a5c1997e3c41 with filter: arp
Starting packet capture on br-b67c5afb6ccc
Starting packet capture on br-b67c5afb6ccc with filter: arp
Packet callback triggered.

Captured Packet 1:
Ethernet Header:
  Destination MAC:          ffffffffffff         | ff:ff:ff:ff:ff:ff
  Source MAC:               f4e2c651474f         | f4:e2:c6:51:47:4f
  EtherType:                0806                 | 2054
ARP Header:
  Hardware Type:            0001                 | 1
  Protocol Type:            0800                 | 2048
  Hardware Size:            06                   | 6
  Protocol Size:            04                   | 4
  Operation:                0001                 | 1
  Sender MAC:               f4e2c651474f         | f4:e2:c6:51:47:4f
  Sender IP:                0a000009             | 10.0.0.9
  Target MAC:               000000000000         | 00:00:00:00:00:00
  Target IP:                0a0000f5             | 10.0.0.245
Packet callback triggered.

Captured Packet 2:
Ethernet Header:
  Destination MAC:          ffffffffffff         | ff:ff:ff:ff:ff:ff
  Source MAC:               70a741acde10         | 70:a7:41:ac:de:10
  EtherType:                0806                 | 2054
ARP Header:
  Hardware Type:            0001                 | 1
  Protocol Type:            0800                 | 2048
  Hardware Size:            06                   | 6
  Protocol Size:            04                   | 4
  Operation:                0001                 | 1
  Sender MAC:               70a741acde10         | 70:a7:41:ac:de:10
  Sender IP:                0a000003             | 10.0.0.3
  Target MAC:               000000000000         | 00:00:00:00:00:00
  Target IP:                0a0000f5             | 10.0.0.245
Packet capture completed on enp5s0.
Packet capture completed on br-a5c1997e3c41.
Packet capture completed on docker0.
Packet capture completed on br-b67c5afb6ccc.
human@humanpc ~/s/N/n/source (main)>
```