

Computer Networks 2021 Exercises - Unit 5

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NOTE: Each student's work unit is unique. You must use the work that has been generated for your FAN. If you do not, then you will fail this work unit.

NOTE: You must record your answers in the answer file EXACTLY as required, and commit and make sure your changes have been pushed to the github server, as they will otherwise not be counted.

NOTE: The topic coordinator will periodically run the automatic marking script, which will cause a file called unit5-results.pdf to be updated in your repository. You should check this file to make sure that your answers have been correctly counted. That file will contain the time and date that the marking script was last run, so that you can work out if it has been run since you last changed your answers. You are free to update your answers as often as you wish, until the deadline for the particular work unit.

1 TCP/IP And Related Protocol Packet Formats and Header Fields

For each question, you must record your answer in the unit5-answers.txt file in your git repository. Templates for each answer are provided in unit5-answers.txt for your convenience.

You will find information on the packet header formats in many places, including:

- *https://en.wikipedia.org/wiki/Ethernet_frame#Header*
- *<https://en.wikipedia.org/wiki/IPv4#Header>*
- *https://en.wikipedia.org/wiki/Address_Resolution_Protocol*
- *https://en.wikipedia.org/wiki/Transmission_Control_Protocol#TCP_segment_structure*
- *https://en.wikipedia.org/wiki/User_Datagram_Protocol#UDP_datagram_structure*

Considering the following packet:

```
# 0x0000: 6425 99e3 3140 dd78 607b 8e1c 0806 0001 d%..1@.x`{.....
# 0x0010: 0800 0604 0001 9291 4382 527e afee c508 .....C.R~....
# 0x0020: 7f1d 8604 11c7 4e6d 6a91 5821 abb9 e66f .....Nmj.X!...o
# 0x0030: d2a4 4688 f8cd 7906 acf1 960c a4ee 7add ..F...y.....z.
# 0x0040: e6b5 6000 64f5 1477 b89f 3b3c e641 294a ..`.d..w..;<.A)J
# 0x0050: ac78 0ff2 2188 709f 4ca7 92c7 08c5 7ce6 .x...!.p.L.....|.
# 0x0060: 516b ec                                     Qk.
```

Find the value of the following fields:

Question ID	Field	Type
ab	ARP PTYPE	Integer: Answer with the decimal value of the field.
ac	Frame is 802.1q	Boolean: Answer Y or N
ad	ETH destination address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
ae	ARP target MAC	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
af	Frame is 802.1ad	Boolean: Answer Y or N
ag	ETH source address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00

Considering the following packet:

```
# 0x0000:  9b54 657b 74aa 4eeb 3d55 e728 8100 239d  .Te{t.N.=U.(..#.
# 0x0010:  0800 4500 007d 0000 4000 1911 0000 799e  ..E..}...@.....y.
# 0x0020:  6ca9 6cb4 7655 b104 64f0 0066 78b0 96f8  1.1.vU..d..fx...
# 0x0030:  55b7 0002 d63f dd62 e38c 1945 6a8d f2a7  U....?.b...Ej...
# 0x0040:  5d76 a39f 3b9f a291 abaa 3e82 1ddf f753  ]v..;.....>....S
# 0x0050:  e1c1 2474 5c51 489d 228c 53c3 307b 03bd  ..$t\QH.".S.0{..
# 0x0060:  3b04 fdad f3f8 5329 8d5f 8aca fe36 2e6d  ;.....S)._...6.m
# 0x0070:  64d3 2bbf 2fbc 4a5e 5bd8 c073 40ff c091  d.+./J^[...s@...
# 0x0080:  1105 56ca 6bf4 9fc3 6154 9b91 d25b 41    ..V.k...aT...[A
```

Find the value of the following fields:

Question ID	Field	Type
ah	Frame is 802.1ad	Boolean: Answer Y or N
ai	Frame is 802.1q	Boolean: Answer Y or N
aj	UDP source port	Integer: Answer with the decimal value of the field.
ak	IP DSCP	Integer: Answer with the decimal value of the field.
al	IP ToS	Integer: Answer with the decimal value of the field.
am	IP TTL	Integer: Answer with the decimal value of the field.

Considering the following packet:

```
# 0x0000: 32a4 6a0d b629 fdd9 f3c0 a565 8848 0000 2.j..).....e.H..
# 0x0010: 9f40 4500 0073 0000 0000 3206 0000 2b17 .@E...s....2...+.
# 0x0020: 587b 98af b2af 2bdb 1d4e 0e54 e84e 7ba2 X{....+...N.T.N{.
# 0x0030: 4986 509b c96c 0000 000a 0fe3 4687 9ced I.P..l.....F...
# 0x0040: 318c cc98 b2f0 fc12 32e5 ca38 86a7 3c2c 1.....2..8..<,
# 0x0050: 43eb 563b 5852 00e3 ba88 4659 5610 2198 C.V;XR....FYV.!.
# 0x0060: dadb 9ca0 be17 48fa 5f23 fb59 6351 d608 .....H._#.YcQ..
# 0x0070: 9304 3b74 9878 9d61 3236 37bd 3546 fc3a ..;t.x.a267.5F.:
# 0x0080: 1d84 58c4 b8 ..X..
```

Find the value of the following fields:

Question ID	Field	Type
an	MPLS label	Integer: Answer with the decimal value of the field.
ao	IP Protocol of payload	Integer: Answer with the decimal value of the field.
ap	TCP source port	Integer: Answer with the decimal value of the field.
aq	TCP ACK sequence number	Integer: Answer with the decimal value of the field.
ar	IP DSCP	Integer: Answer with the decimal value of the field.
as	ETH destination address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00

Considering the following packet:

```
# 0x0000:  e91a bfc6 5bd4 f733 3650 69f8 88a8 7fc8  ....[...36Pi.....
# 0x0010:  0806 0001 0800 0604 0002 8d4e cc50 8f08  .....N.P..
# 0x0020:  0b45 2733 359a 8cb4 b1dd db57 39be de6d  .E'35.....W9..m
# 0x0030:  7751 f209 f1c9 d765 93e2 c24f 0a06 44c4  wQ.....e...0..D.
# 0x0040:  076e 9a58 c73e 14c1 75cc 1871 b08d 7b6d  .n.X.>..u..q..{m
# 0x0050:  6029 328c 35f5 a244 d7bc 0b46 ffd5 29af  `)2.5..D...F..).
# 0x0060:  a75c 4306 c948 a903 1b8b f643 2d52 3bd4  .\C..H.....C-R;.
# 0x0070:  f33d e9f1 1de6 3891 bd36 1d4f 2ecd 6ca1  .=....8..6.0..1.
# 0x0080:  92fb 5dc6 2d1d 0dd8 5ea3 0859 5ffd ea02  ..].-...^..Y_...
# 0x0090:  2003 b98c 2902 746d 074f e38d 3b71 44cc  ....).tm.0...;qD.
# 0x00a0:  ce3f b854 bf6a d005 440a 6e5d dd        .?.T.j..D.n].
```

Find the value of the following fields:

Question ID	Field	Type
at	ETH source address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
au	ARP HTYPE	Integer: Answer with the decimal value of the field.
av	Frame is 802.1q	Boolean: Answer Y or N
aw	ARP source IP	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
ax	ETH destination address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
ay	ARP target IP	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21

Considering the following packet:

```
# 0x0000: 76cc 0140 6b3a 6fe7 bc05 a982 88a8 0f32  v...@k:o.....2
# 0x0010: 0800 4500 0073 0000 4000 1211 0000 4368  ..E...s...@.....Ch
# 0x0020: 060e 6817 bdc2 2a74 5b03 0012 5587 6424  ..h...*t[...U.d$
# 0x0030: f92f 4b98 1e93 93cf 32b1 e2bd 51a2 883a  ./K.....2...Q...
# 0x0040: 9c94 c9b8 1ab4 ecbf f460 01a8 1535 d961  ....~...5.a
# 0x0050: 11b7 054f 61e2 ec74 5f40 3517 06f4 71e4  ...0a..t_@5...q.
# 0x0060: 7a15 cc5b bf8c bd4c 4acc cfb4 2321 5bc2  z...[...LJ...#![.
# 0x0070: 5623 62ed 82ac 3f48 3a41 a622 795c 181f  V#b...?H:A."y\..
# 0x0080: 553f 9d73 42                                U?.sB
```

Find the value of the following fields:

Question ID	Field	Type
az	Frame is MPLS	Boolean: Answer Y or N
ba	IP ECN	Integer: Answer with the decimal value of the field.
bb	ETH destination address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
bc	IP source address	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
bd	IP ToS	Integer: Answer with the decimal value of the field.
be	IP destination address	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21

Considering the following packet:

```
# 0x0000:  e468 9edd 0964 c264 73b5 1428 8848 0000  .h...d.ds..(.H..
# 0x0010:  2b6b 4500 0074 0000 4000 3b11 0000 79b3  +kE...t...@.;...y.
# 0x0020:  707e 371e c30d db00 7416 0038 af98 aec1  p~7.....t..8....
# 0x0030:  f663 d049 b283 b96a 77d9 1c9a f3bf c258  .c.I...jw.....X
# 0x0040:  7369 0b66 db1b 2572 a66e 1f9c b04b f1ad  si.f...%r.n...K..
# 0x0050:  b04d 8f48 0ce0 4edc e65c d89a 4c59 4d0d  .M.H..N..\..LYM.
# 0x0060:  8df0 4169 75b6 530a bed4 ab03 9ba4 1d68  ..Aiu.S.....h
# 0x0070:  41af f92f f9f2 044c 107e 4d3f cc5d cc24  A../...L.~M?.].$
# 0x0080:  7b8a 166a f87f                                     {...j..
```

Find the value of the following fields:

Question ID	Field	Type
bf	UDP destination port	Integer: Answer with the decimal value of the field.
bg	ETH source address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
bh	IP destination address	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
bi	IP Don't Frag	Boolean: Answer Y or N
bj	MPLS label	Integer: Answer with the decimal value of the field.
bk	MPLS last label?	Boolean: Answer Y or N

Considering the following packet:

```
# 0x0000:  084a cb17 8b30 0087 0225 d08f 0800 4500  .J...0...%....E.
# 0x0010:  0034 0000 4000 0e11 0000 86b4 adc6 b903  .4..@.....
# 0x0020:  5195 06b0 1b5a 0081 d90b 82a8 540e c3fd  Q....Z.....T...
# 0x0030:  966b 41a5 521c 8775 f335 2be5 6102 3c46  .kA.R..u.5+.a.<F
# 0x0040:  a11f                                     ..
```

Find the value of the following fields:

Question ID	Field	Type
b1	Frame is MPLS	Boolean: Answer Y or N
bm	ETH frame type	Four-digit Hex: Answer with the four digit hexadecimal value of the field, e.g., 02AF. Do not put a leading 0x or \$ on the front of the hexadecimal number.
bn	Frame is 802.1ad	Boolean: Answer Y or N
bo	IP length	Integer: Answer with the decimal value of the field.
bp	IP TTL	Integer: Answer with the decimal value of the field.
bq	IP FLAGS	Integer: Answer with the decimal value of the field.

Considering the following packet:

```
# 0x0000: c7b9 571c 1ae7 fa08 f969 49e7 8848 0000  ..W.....iI..H..
# 0x0010: 7f1a 4500 008d 0000 4000 1006 0000 29eb  ..E.....@.....).
# 0x0020: f2b2 2ccd 9b14 8c7a c9a5 45f3 53e6 3611  ...,....z..E.S.6.
# 0x0030: 0b64 5090 d945 0000 0006 b500 b390 aa70  .dP..E.....p
# 0x0040: b3f7 60b9 f370 d4fd 5502 ab34 8f00 f534  ..`.p..U..4...4
# 0x0050: a133 aab6 33a1 1ba1 0425 5643 ddb2 10fa  .3..3....%VC....
# 0x0060: 04ef e4f6 1bd2 5221 73aa 3f5b 5fc2 8aea  ....R!s.?[_...
# 0x0070: ff09 9b92 9cf6 4bc1 47a3 33e3 ae20 150e  ....K.G.3....
# 0x0080: d412 a4f9 5fa7 e218 4b7d d175 c280 4f6d  ...._...K}.u..0m
# 0x0090: 6da4 46db afa8 8d64 f513 ce9f 4c03 6a    m.F....d....L.j
```

Find the value of the following fields:

Question ID	Field	Type
br	IP TTL	Integer: Answer with the decimal value of the field.
bs	IP TTL	Integer: Answer with the decimal value of the field.
bt	IP source address	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
bu	TCP sequence number	Integer: Answer with the decimal value of the field.
bv	MPLS label	Integer: Answer with the decimal value of the field.
bw	TCP CWR	Boolean: Answer Y or N

Considering the following packet:

```
# 0x0000: 00d3 5832 39c2 8eae 82d2 a62e 8848 0000  ..X29.....H..
# 0x0010: 0de6 4500 0095 0000 0000 3006 0000 4d24  ..E.....O...M$
# 0x0020: 6d51 74f4 1761 4aec 7b10 43b6 362d 0ef3  mQt...aJ.{.C.6-..
# 0x0030: ffd4 5080 7508 0000 0004 d9fc 0267 114a  ..P.u.....g.J
# 0x0040: 4978 d57a c7bd fb97 d4ac edaa 0fc3 c058  Ix.z.....X
# 0x0050: 04da e464 8c2e 6dd8 0771 ebb8 1e98 75cf  ...d..m..q....u.
# 0x0060: b117 7f30 e94e a92a 9d2a eab7 bfe5 74a0  ...0.N.*.*....t.
# 0x0070: 4eb6 f7b4 27fb ed4f 5352 424f e75e 5080  N...'..0SRB0.^P.
# 0x0080: 2e30 87bf b17f 3fe6 6b05 421f 97be a99a  .0....?.k.B.....
# 0x0090: 8ffb c7d8 a89a 0c03 6be4 ff67 2f1f f96f  ....k..g/..o
# 0x00a0: 7f08 7fcb 133a a3                .....:
```

Find the value of the following fields:

Question ID	Field	Type
bx	MPLS label	Integer: Answer with the decimal value of the field.
by	TCP CWR	Boolean: Answer Y or N
bz	IP source address	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
ca	TCP window size	Integer: Answer with the decimal value of the field.
cb	MPLS TTL	Integer: Answer with the decimal value of the field.
cc	TCP FIN	Boolean: Answer Y or N

Considering the following packet:

```
# 0x0000: 70ab 0ff1 0adc e927 f6cc 44c1 8847 0000  p.....'..D..G..
# 0x0010: 85e8 4500 0050 0000 4000 3706 0000 5526  ..E..P..@.7...U&
# 0x0020: b0c1 53b7 90c0 d7ee fa83 7391 7029 5c06  ..S.....s.p)\.
# 0x0030: 651c 5015 79e3 0000 0008 61f4 9828 c753  e.P.y.....a..(S
# 0x0040: 6488 9fbd ad8f b64e 7d05 3b0d 0e14 4a5e  d.....N}.;...J^
# 0x0050: 1f97 2003 50de 5cbc 1439 2d45 c43f b4a6  ....P.\..9-E.?..
# 0x0060: da10                                     ..
```

Find the value of the following fields:

Question ID	Field	Type
cd	ETH destination address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
ce	IP DSCP	Integer: Answer with the decimal value of the field.
cf	IP More Fragments	Boolean: Answer Y or N
cg	MPLS label	Integer: Answer with the decimal value of the field.
ch	TCP source port	Integer: Answer with the decimal value of the field.
ci	Frame is 802.1ad	Boolean: Answer Y or N

Considering the following packet:

```
# 0x0000: 07e4 1e0a 95a7 c589 f446 16a3 8100 3b22 .....F....;"
# 0x0010: 0800 4500 0068 0000 4000 0011 0000 25f0 ..E..h..@.....%.
# 0x0020: dbd9 0c0e db85 3339 ec28 0064 55d3 ecd1 .....39.(.dU...
# 0x0030: 05c0 b33f 06fa e230 d9ac 71c1 61ca a878 ...?...0..q.a..x
# 0x0040: 1cdc 9090 0a05 3b26 1fa6 e28e 4d2c 1ec6 .....;&....M,..
# 0x0050: b9b8 5cd6 2136 bf17 4ba7 19e9 aecc e78b ..\.!6..K.....
# 0x0060: d18b 55e4 e695 4491 58b5 6f87 7366 6ae3 ..U...D.X.o.sfj.
# 0x0070: 9726 170a eb18 fe61 f94d                .&.....a.M
```

Find the value of the following fields:

Question ID	Field	Type
cj	ETH destination address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
ck	UDP destination port	Integer: Answer with the decimal value of the field.
cl	ETH source address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
cm	IP length	Integer: Answer with the decimal value of the field.
cn	IP Protocol of payload	Integer: Answer with the decimal value of the field.
co	IP ECN	Integer: Answer with the decimal value of the field.

Considering the following packet:

```
# 0x0000:  f1e4 2eed ffd6 6698 962e 5764 8100 08b8  ....f...Wd....
# 0x0010:  0800 4500 0080 0000 0000 0411 0000 b72e  ..E.....
# 0x0020:  5390 6964 9ec6 57ef b8ff 0038 5fd7 708b  S.id..W....8_.p.
# 0x0030:  83ec e91c d1b1 589f 79b5 f695 0660 6a90  ....X.y....`j.
# 0x0040:  0c8c e1a6 84d9 d0f8 a534 5b7c b884 a267  ....4[|...g
# 0x0050:  1b37 c431 38a2 a9e4 af96 2b76 54de af66  .7.18....+vT..f
# 0x0060:  0807 d58b 349c 9d29 7bd7 da51 686b a2ea  ....4..){..Qhk..
# 0x0070:  ff22 8853 f313 b939 414d c6ee d6a8 907c  .".S...9AM....|
# 0x0080:  d339 ee0b 21c5 4f2a 6f6f af7e 6b80 61ac  .9...!.0*oo.~k.a.
# 0x0090:  2e75                                     .u
```

Find the value of the following fields:

Question ID	Field	Type
cp	IP ToS	Integer: Answer with the decimal value of the field.
cq	IP source address	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
cr	Frame is 802.1ad	Boolean: Answer Y or N
cs	IP TTL	Integer: Answer with the decimal value of the field.
ct	UDP destination port	Integer: Answer with the decimal value of the field.
cu	IP TTL	Integer: Answer with the decimal value of the field.

Considering the following packet:

```
# 0x0000: c34b df0b 4d1e 0121 0b67 db74 88a8 6085 .K..M...!.g.t...`.
# 0x0010: 0800 4500 0090 0000 4000 1706 0000 d74a ..E.....@.....J
# 0x0020: 8fcd d027 2387 acac 68aa 5123 257a 14dc ...'#...h.Q#%z..
# 0x0030: 8b31 500a e9c8 0000 0006 9317 0dd5 ca3a .1P.....:
# 0x0040: 5629 ede1 230c 58df bf91 8324 b161 d46b V)..#.X....$.a.k
# 0x0050: 4701 6382 8630 d90d 02be 4dd2 7fa0 4d74 G.c..0....M...Mt
# 0x0060: 06e1 8944 4cc7 5c9b e021 5046 1ad3 08c5 ...DL.\..!PF....
# 0x0070: 7a33 a979 2d1a c030 3fad 850a 9a6b ebc1 z3.y-..0?...k..
# 0x0080: 95c2 e8b1 e73a 4b99 077c 3e55 59d5 1b01 .....:K..|>UY...
# 0x0090: 058f b9fd db13 aa35 121a 1fd9 d629 d9e3 .....5.....)..
# 0x00a0: dbae ..
```

Find the value of the following fields:

Question ID	Field	Type
cv	TCP CWR	Boolean: Answer Y or N
cw	IP source address	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
cx	ETH frame type	Four-digit Hex: Answer with the four digit hexadecimal value of the field, e.g., 02AF. Do not put a leading 0x or \$ on the front of the hexadecimal number.
cy	IP DSCP	Integer: Answer with the decimal value of the field.
cz	TCP sequence number	Integer: Answer with the decimal value of the field.
da	TCP ACK sequence number	Integer: Answer with the decimal value of the field.

Considering the following packet:

```
# 0x0000:  5e75 98f1 b0ea e74d 583d 4a4f 8847 0000  ^u.....MX=J0.G..
# 0x0010:  0162 4500 0070 0000 4000 1a11 0000 fc0c   .bE..p..@.....
# 0x0020:  9112 589f 0b25 b720 c5a5 0094 a57f 25c1   ..X..%.....%.
# 0x0030:  6d95 84d0 d5a5 be00 5763 a8ef d0d7 4744   m.....Wc....GD
# 0x0040:  c014 68c0 1576 4bb6 a33f b22e 268f 3d9c   ..h..vK..?..&.=.
# 0x0050:  c0de 12d5 4e5b 5868 92d0 a88c 1733 dbff   ....N[Xh.....3..
# 0x0060:  fef2 755f d20b 0475 1923 f189 cf5e 8aeb   ..u...u.#...^..
# 0x0070:  90b7 7de5 c887 c006 b975 b118 34e9 8a9f   ..}......u..4...
# 0x0080:  206a                                     .j
```

Find the value of the following fields:

Question ID	Field	Type
db	IP Protocol of payload	Integer: Answer with the decimal value of the field.
dc	ETH destination address	Ethernet MAC Address. Answer in the customary format, retaining leading zeroes, e.g., 02:ca:fe:f0:0d:00
dd	IP TTL	Integer: Answer with the decimal value of the field.
de	IP DSCP	Integer: Answer with the decimal value of the field.
df	IP More Fragments	Boolean: Answer Y or N
dg	UDP source port	Integer: Answer with the decimal value of the field.

Considering the following packet:

```
# 0x0000: f568 ccc4 6ea2 7a71 e94d 9471 0806 0001 .h..n.zq.M.q....
# 0x0010: 0800 0604 0001 093a 0bf7 adfc 76f4 096e .....:....v..n
# 0x0020: 3af4 750b d43e a228 d1a9 7112 3338 441b :.u..>.(.q.38D.
# 0x0030: eaef 6c20 195e 6f24 4905 2377 1829 0119 ..l..^o$I.#w.)..
# 0x0040: c739 1ac0 eda0 fe03 f239 cd18 4d55 afca .9.....9..MU..
# 0x0050: d60e b1f5 1469 00d2 edfa 76fe 62c8 ff07 .....i....v.b...
# 0x0060: 4c7a c2e9 aec4 36da ec78 6983 7fa0 18e0 Lz....6..xi.....
# 0x0070: fa48 f5                                     .H.
```

Find the value of the following fields:

Question ID	Field	Type
dh	ARP reply	Boolean: Answer Y or N
di	ARP target IP	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
dj	ARP PTYPE	Integer: Answer with the decimal value of the field.
dk	ETH frame type	Four-digit Hex: Answer with the four digit hexadecimal value of the field, e.g., 02AF. Do not put a leading 0x or \$ on the front of the hexadecimal number.
dl	ARP source IP	IPv4 address. Answer in dotted quad notation, e.g., 129.96.1.21
dm	ARP request	Boolean: Answer Y or N

2 Lecture Material Comprehension

The following questions are designed with two purposes in mind:

1. To help you engage with the lecture materials; and
2. To help generate a wide range of questions for the quizzes in this topic.

The second goal is not mandatory for you. However, if you are willing for the answers you provide to the questions in this section to be used in future quizzes in this topic, you are requested to answer the following question as follows *you will not be penalised if you do not give this permission*

Question#	Description
dn	Are you willing to release your following answers in this section from all copyrights, i.e., release them into the public domain, including so that they can be included in quizzes in this topic? <i>you will not be penalised or treated any differently if you do not choose to give this permission</i>

It is important that you answer this question with 'y', if you do decide that you would like to do this (but again, you have no obligation to do so, and you will not be treated differently whether or not you give permission).

The entry in `unit5-answers.txt` would thus look like:

```
# Question 'dn': Do you commit the following answers to the public domain
# and disclaim all copyrights in them?
dn=y
```

For each question, you must record your answer in the unit5-answers.txt file in your git repository. For each question, you are required to write a statement that is either true or false about the material in the indicated lecture slide.

*For example, if you were asked 'write a **true** statement about the content of Slide 2 of Chapter 1', you would put the statement at the end of the `rj=` line in the file `unit5-answers.txt`. For example, if your statement was 'One of the problems addressed in this chapter is how to build*

scalable networks', you would write:

Question#	Description
pz	Write a true statement about the content of Slide 2 of Chapter 1

The entry in `unit5-answers.txt` would thus look like:

```
# Question 'pz': Write a true statement about the content of Slide 2 of Chapter 1
pz=One of the problems addressed in this chapter is how to build scalable networks
```

Templates for each answer are provided in `unit5-answers.txt` for your convenience.

If you are asked to write a statement that is false, i.e., untrue, think about statements that someone who has not worked through the material might think would be true. Be creative! Be devious!

Question#	Description
do	Write a false statement about the content of Slide 139 of Chapter 2
dp	Write a false statement about the content of Slide 43 of Chapter 1
dq	Write a true statement about the content of Slide 10 of Chapter 5
dr	Write a true statement about the content of Slide 15 of Chapter 7
ds	Write a false statement about the content of Slide 34 of Chapter 6
dt	Write a false statement about the content of Slide 96 of Chapter 9
du	Write a true statement about the content of Slide 125 of Chapter 6
dv	Write a true statement about the content of Slide 49 of Chapter 6
dw	Write a false statement about the content of Slide 46 of Chapter 3
dx	Write a true statement about the content of Slide 91 of Chapter 2