```
Class A N.H.H.H /8 255.0.0.0
Class B N.N.H.H /16 255.255.0.0
Class C N.N.N.H /24 255.255.255.0

7 departments 7 LANs ~300 hosts/department

7 unique Network ID --> IP Address

IANA --> 148.37.0.0 /16 --> 1 Network, 2^16 - 2 = 65534
host

10010100.00100101.00000000.00000000  148.37.0.0
10010100.00100101.00010000.00000000  148.37.16.0
10010100.00100101.00100000.00000000  148.37.32.0
10010100.00100101.00110000.00000000  148.37.48.0
10010100.00100101.01000000.00000000  148.37.64.0
10010100.00100101.01010000.00000000  148.37.80.0
10010100.00100101.01100000.00000000  148.37.96.0
10010100.00100101.01110000.00000000  148.37.112.0
```

```
10010100.00100101.10000000.00000000 148.37.128.0
10010100.00100101.10010000.00000000 148.37.144.0
.
.
.
10010100.00100101.11110000.00000000 148.37.240.0
```

LAN-1

```
10010100.00100101.00010000.00000000 148.37.16.0 reserved
10010100.00100101.00010000.00000001 148.37.16.1
10010100.00100101.00010000.00000010 148.37.16.2
10010100.00100101.00010000.00000011 148.37.16.3
10010100.00100101.00010000.00000100 148.37.16.4
.
.
10010100.00100101.00010000.11111111 148.37.16.255
10010100.00100101.00010001.00000000 148.37.17.0
10010100.00100101.00010001.00000001 148.37.17.1
.
```

.

10010100.00100101.0001 0001.00101110 148.37.17.45

10010100.00100101.0001 1111.11111111 148.37.16.0 reserved b/c

LAN-2

10010100.00100101.0010 0000.00000000 148.37.32.0

10010100.00100101.0010 0000.00000001 148.37.32.1

10010100.00100101.0010 0000.00000010 148.37.32.2

10010100.00100101.0010 0000.00000011 148.37.32.3

.

.

10010100.00100101.0010 0000.11111111 148.37.32.255

10010100.00100101.0010 0001.00000000 148.37.33.0

10010100.00100101.0010 0001.00000001 148.37.33.1

.

.

.

10010100.00100101.0010 0001.00101110 148.37.33.46

10010100.00100101.0010 1111.11111111 148.37.47.255 b/c

148.37.52.46 - 255.255.240.0 subnet mask

10010100.00100101.00100001.00101110
11111111.11111111.11110000.00000000 255.255.240.0

148.37.52.46 - 255.255.240.0

10010100.00100101.00110100.00101110 Logical AND
11111111.11111111.11110000.00000000 Logical AND

10010100.00100101.00110000.00000000 148.37.48.0

T T: T
F T: F
T F: F

F F: F

CIDR - Classless Inter-Domain Routing

148.37.52.46 /20

148.37.52.46 - 255.255.240.0

192.168.1.37 /24

255.255.255.0