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Experiment- 2

Aim:

Write a program to determine Net ID, Host ID, and class of the network.

Language Used:

Python

Theory:

Determining the class

The idea is to check the first octet of the IP addresses.
Range of Class A: 1 – 126
Range of Class B: 128 – 191
Range of Class C: 192 – 223
Range of Class D: 224 – 239
Range of Class E: 240 – 255

Determining the Network and Host ID

Subnet Mask for Class A is 8, for Class B is 16 and for Class C is 24 whereas Class D and E are not divided into Network and Host ID.

Example

For the IP Address: **130.45.151.154**,
The first octet is 130. So, it belongs to Class B.
Class B has a subnet mask of 16. So, the first 16 bit or first two octets are the Network ID part and the rest is the Host ID part.
Hence, the Network ID is 130.45 and the Host ID is 151.154

Code:

```
ip = input("Enter The IP Address\n")
octets = ip.split(".")
first_octet = int(octets[0])
ip_class = ""
if(first_octet < 128):
    ip_class = "A"
    i = 1
elif(first_octet < 192):
    ip_class = "B"
    i = 2
elif(first_octet < 224):
    ip_class = "C"
    i = 3
elif(first_octet < 240):
    ip_class = "D"
    i = 4
else:
    ip_class = "E"
    i = 4
net_id = ".".join([octets[x] for x in range(0,i)])
host_id = ".".join([octets[x] for x in range(i,4)])
```

```
print("Class: ", ip_class)
print("Network ID: ", net_id)
if ip_class != "D" and ip_class != "E": print("Host ID: ", host_id)
```

Output: