EXPERIMENT NO : 09

AIM: Implement a Name Resolution protocol.

Theory:

The Name Resolution Protocol (NRP) is a communication protocol used in distributed systems to resolve logical names into physical addresses or locations. It is similar in concept to DNS (Domain Name System) used on the Internet, but it is designed for use within distributed systems or networks.

Here is a simplified overview of how NRP works:

1. Name Registration : Nodes in the distributed system register their logical names along with their physical addresses or locations with a central NRP server or directory service.
2. Name Resolution : When a node needs to communicate with another node, it sends a request to the NRP server with the logical name of the destination node.
3. Resolution Process : The NRP server looks up the logical name in its directory and returns the corresponding physical address or location of the destination node to the requesting node.
4. Communication : With the physical address obtained from the NRP server, the requesting node can establish communication directly with the destination node.
5. Dynamic Updates : The NRP server may also support dynamic updates, allowing nodes to update their information (e.g., address changes) in real-time.

Code :

exp9.py

```python
import socket

def get_ip_address(url):
    try:
        host_name = socket.gethostbyname(url)
        host_ip = socket.gethostbyname(host_name)
        print("Hostname:", host_name)
        print("IP:", host_ip)
    except:
        print("Unable to get hostname and IP")

if __name__ == '__main__':
    url = "www.youtube.com"
    get_ip_address(url)

```

Output :

```
/bin/python3.9 /home/computer/exp/exp9.py
computer@computer-ThinkCentre:~/exp$ /bin/python3.9 /home/computer/exp/exp9.py
Hostname: 142.250.199.174
IP: 142.250.199.174
computer@computer-ThinkCentre:~/exp$
```

Conclusion:

Thus, we had Successfully Implemented Name Resolution protocol.