

## Department of Artificial Intelligence and Data Science

**23ITT204 – Computer Networks**

II B.Tech – AI&DS / IV SEMESTER

### **UNIT I :INTRODUCTION AND APPLICATION LAYER**

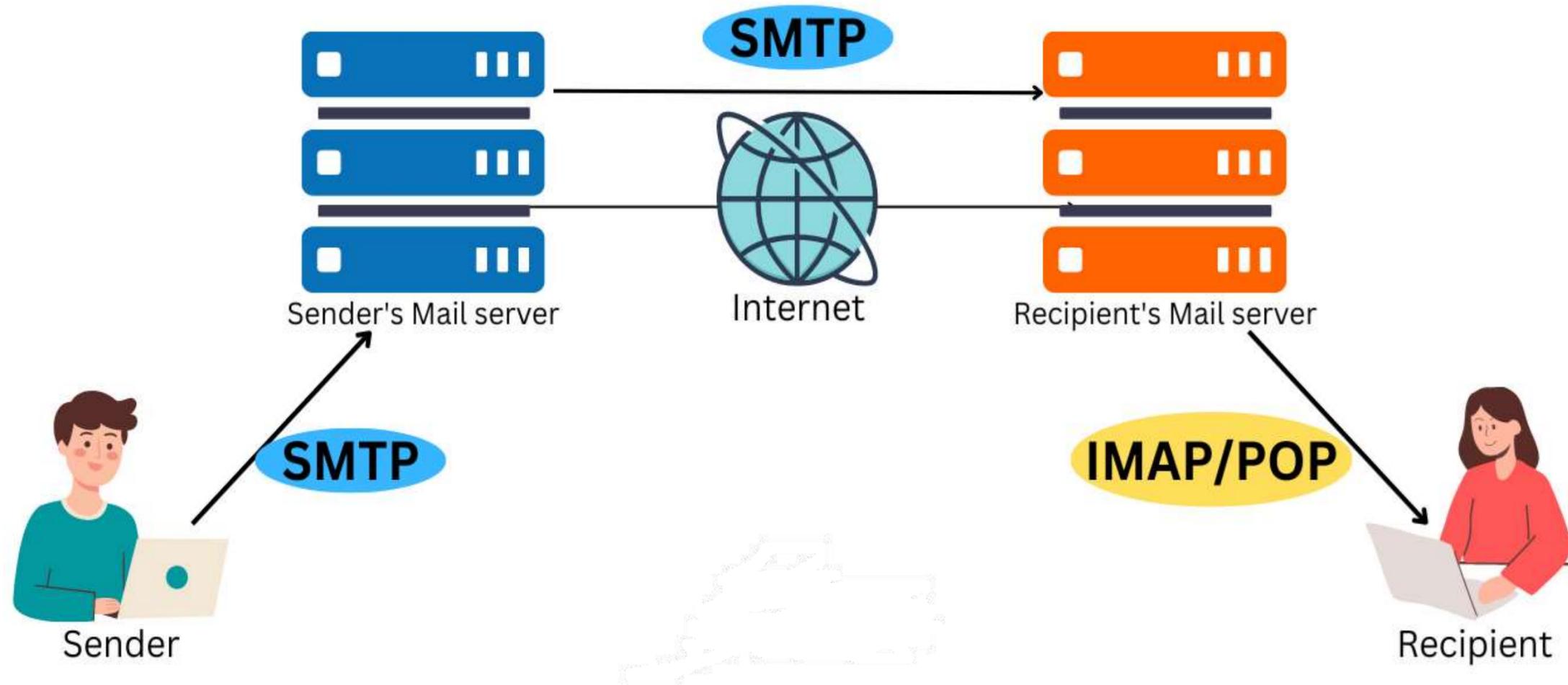
#### **Topic 8: Domain Name System (DNS)**

# Session's Agenda:

- Empathize
- Define
- Ideate
- Prototype
- Test
- Real-world Scenario
- Challenges
- Conclusion

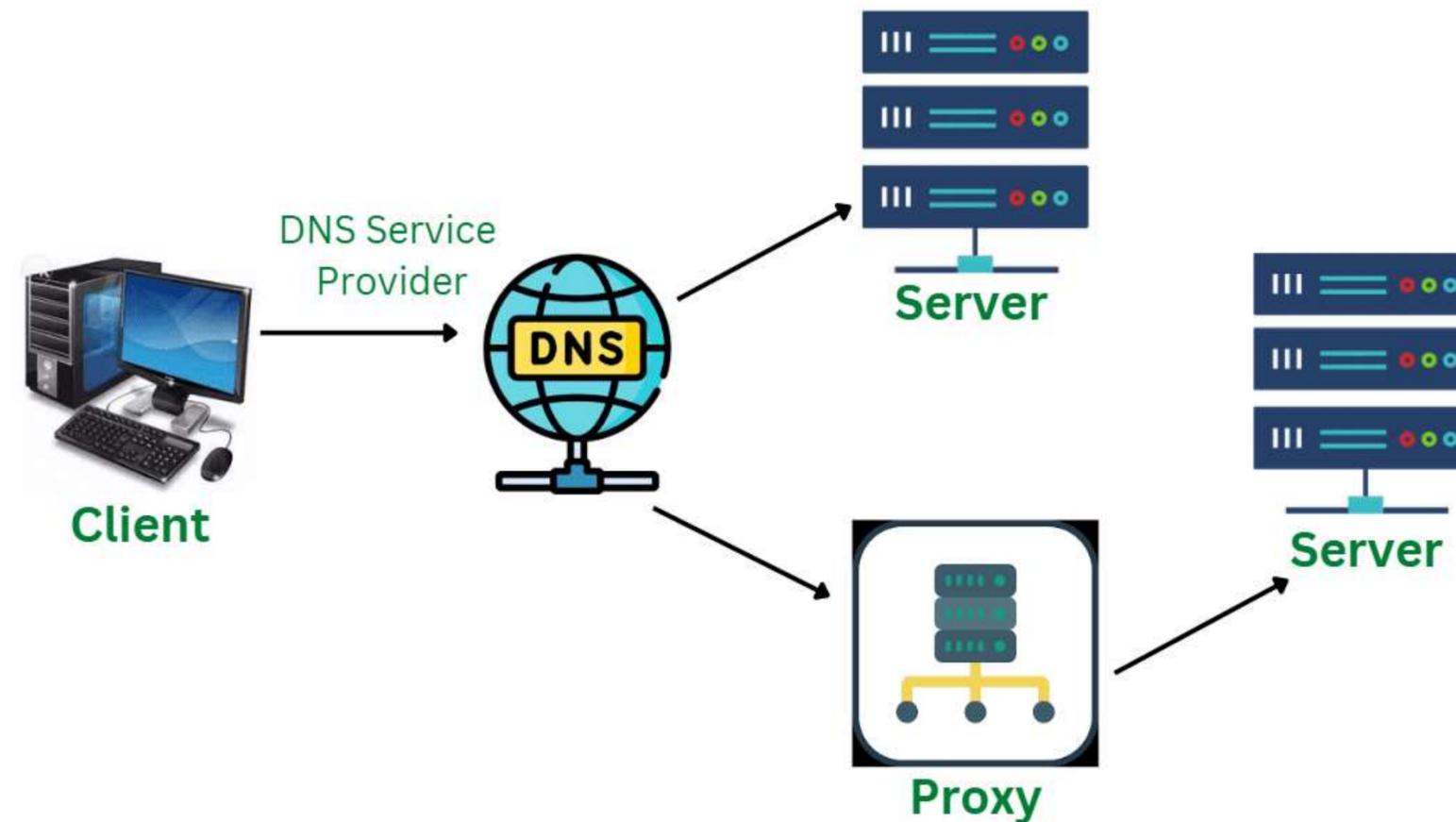


# Recap



# Empathize – Why DNS?

Why do users find it difficult to access services using IP addresses, and how does DNS simplify communication by translating human-readable domain names into IP addresses across networks?



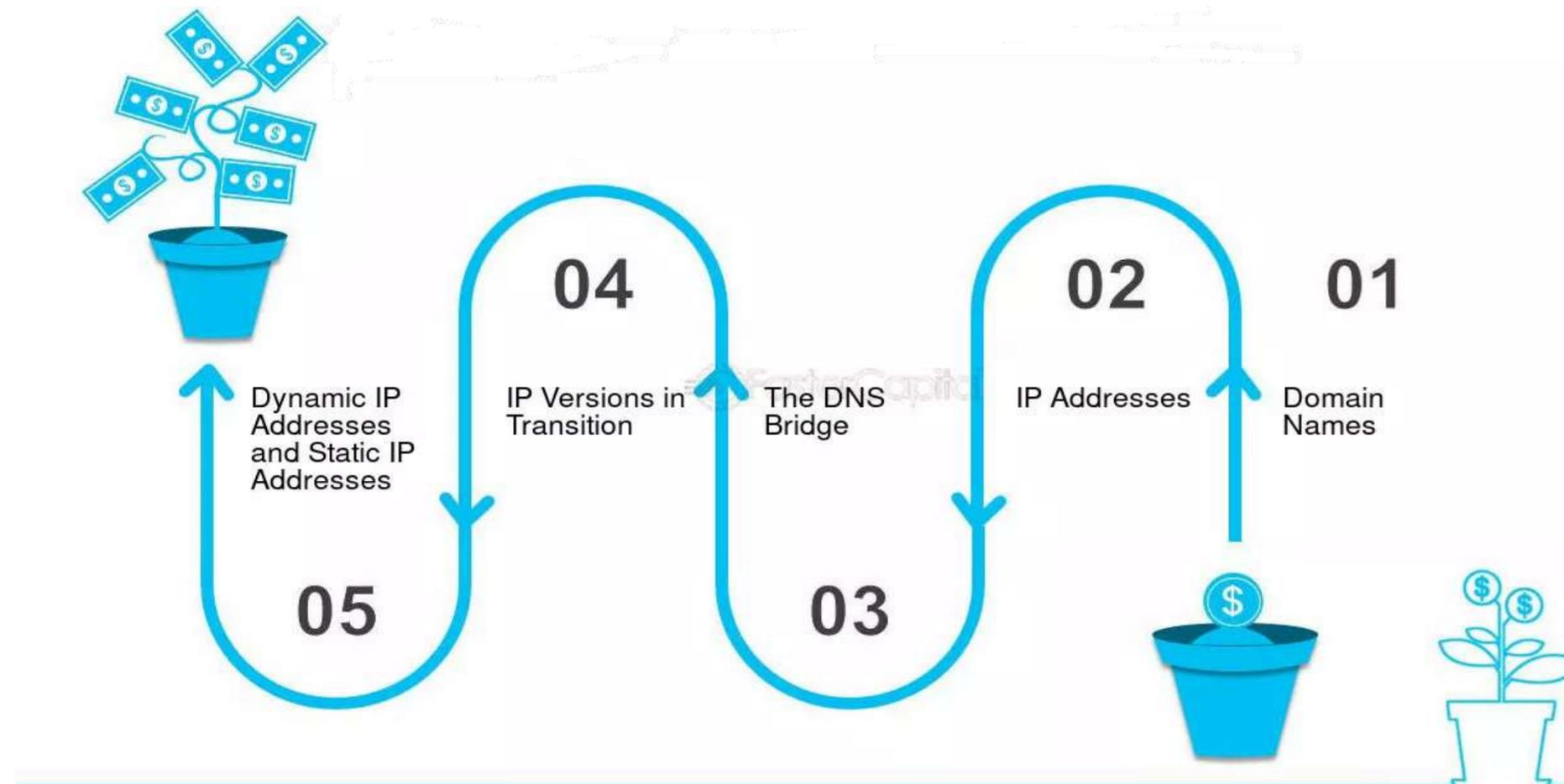
# Define – Defining the Need for DNS

Users face confusion and access delays when services are identified only by complex IP addresses, making DNS essential for reliably translating human-readable domain names into correct network destinations.



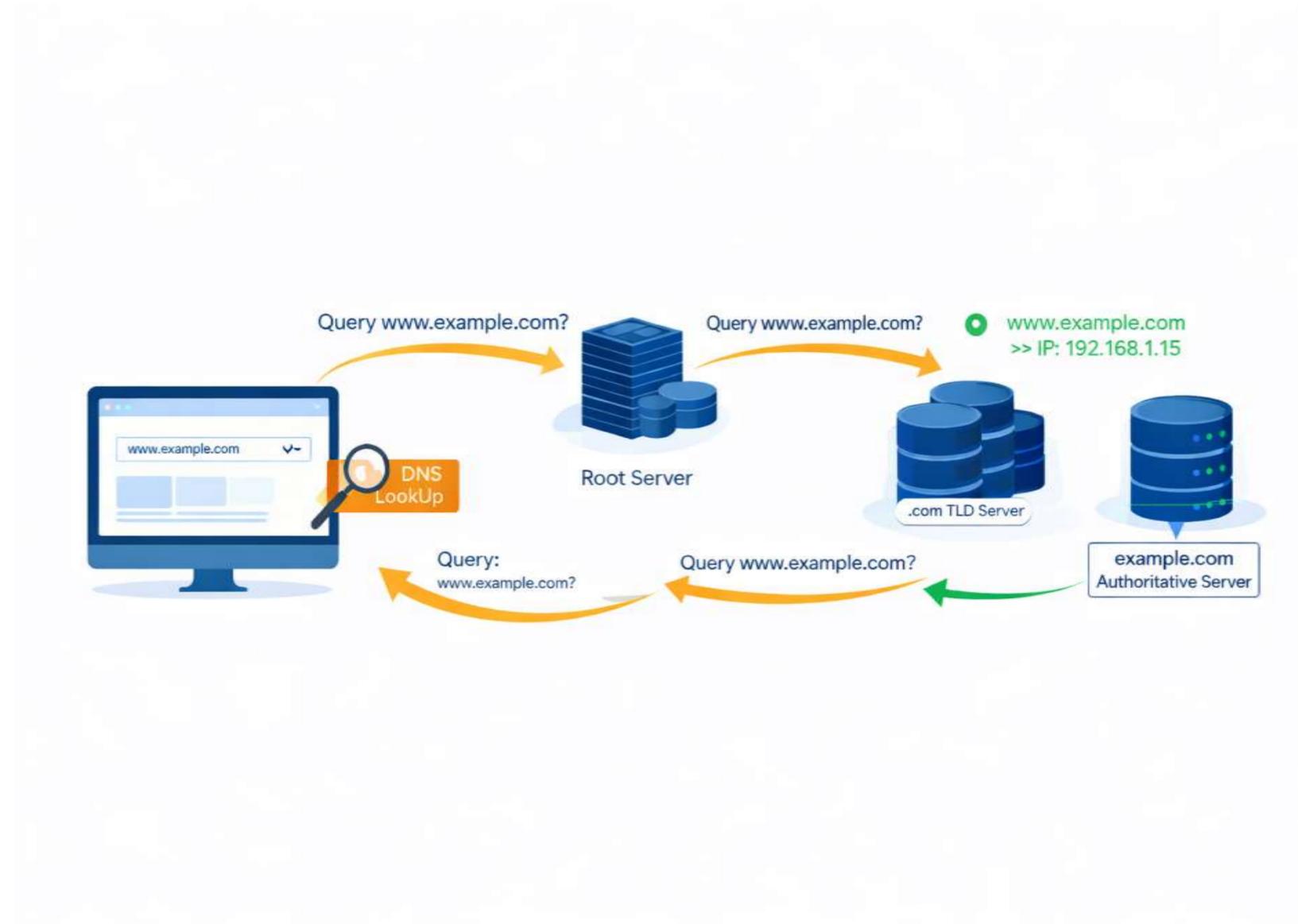
# Ideate – Designing Domain Name System (DNS)

How can a hierarchical, distributed naming system be designed to quickly and reliably translate easy-to-remember domain names into IP addresses, ensuring fast, scalable, and fault-tolerant access to network services?



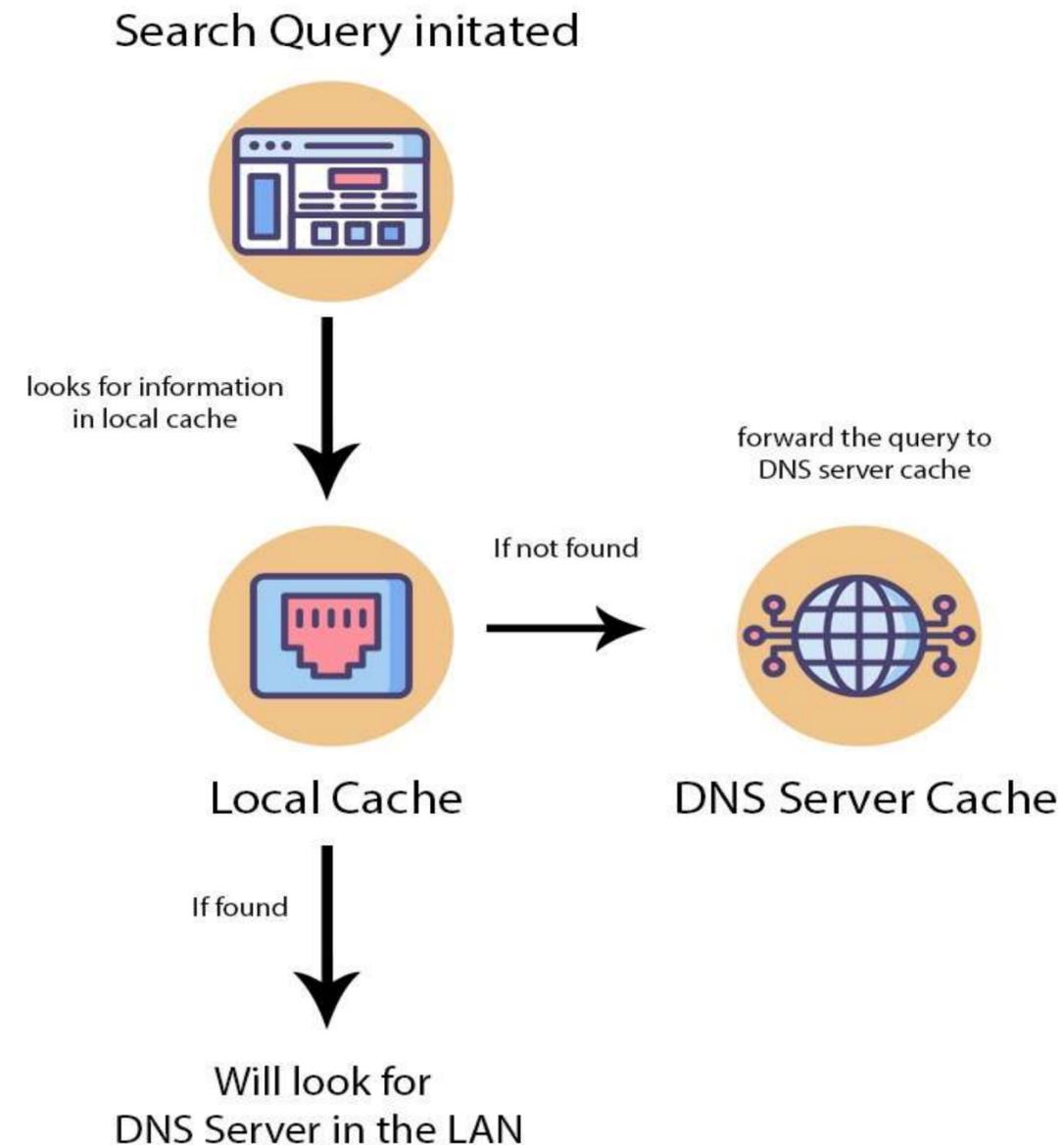
# Prototype – DNS

How can a step-by-step DNS lookup be modeled to show how a domain name query moves from the user to root, TLD, and authoritative servers, finally returning the correct IP address.

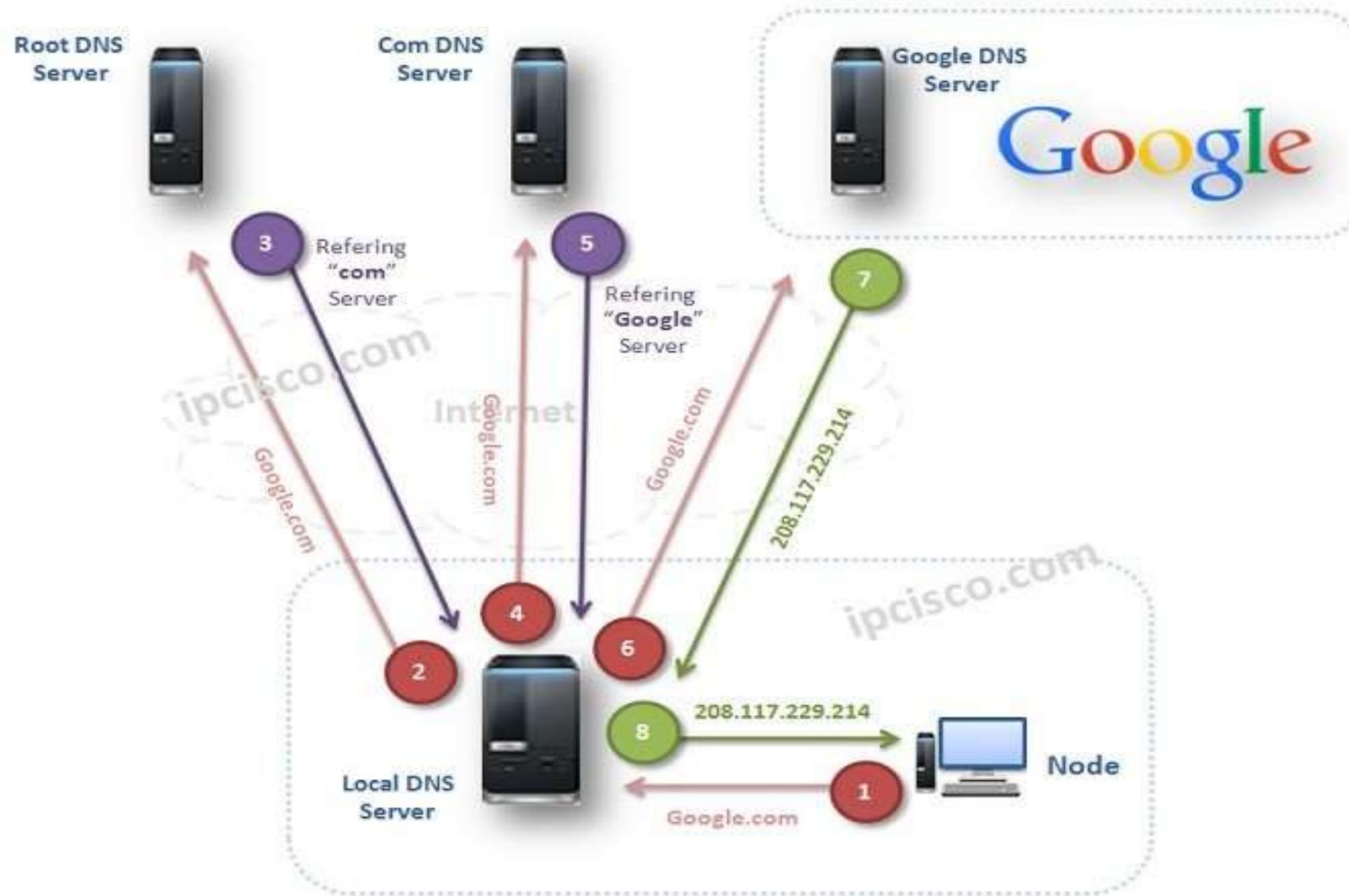


# Test – How Data Travels through DNS

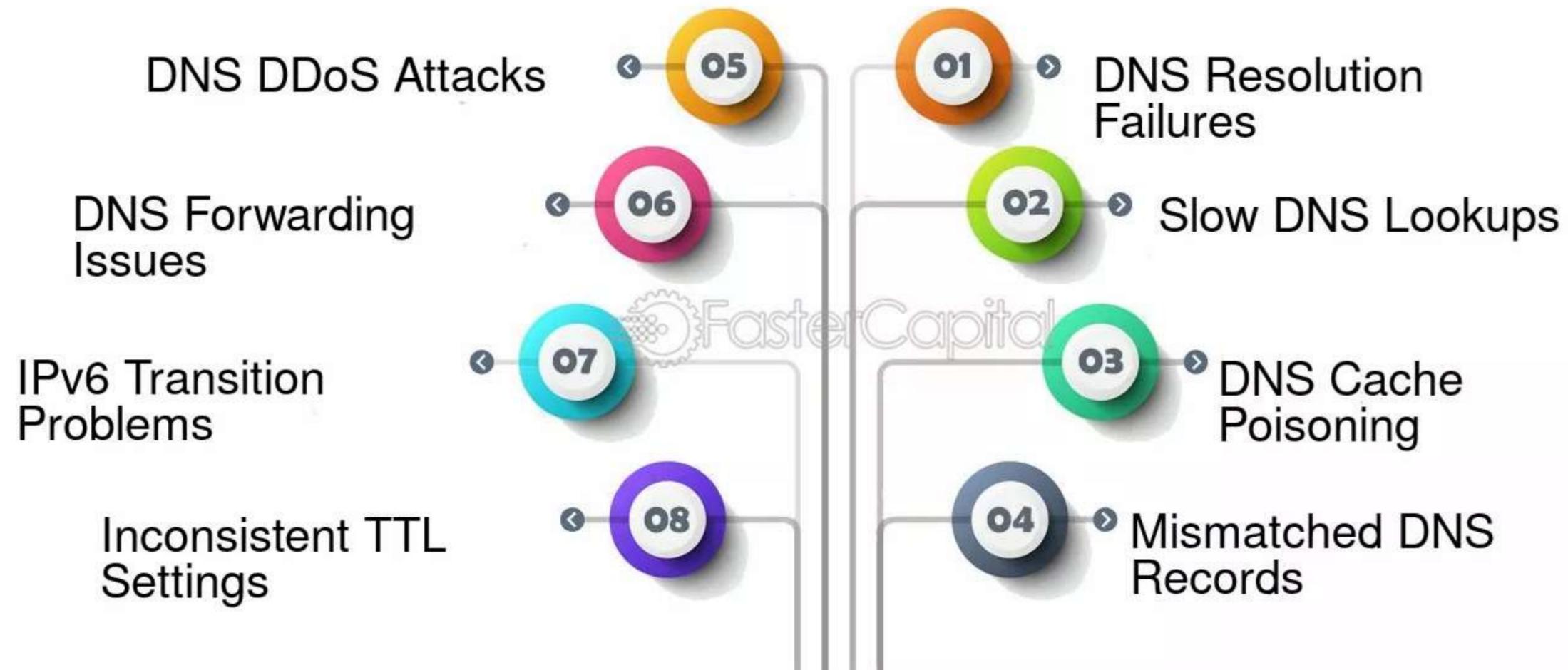
DNS works by translating human-readable domain names into IP addresses through a hierarchical lookup process so that devices can locate and communicate with the correct servers.



# Real-world Scenario (DNS)

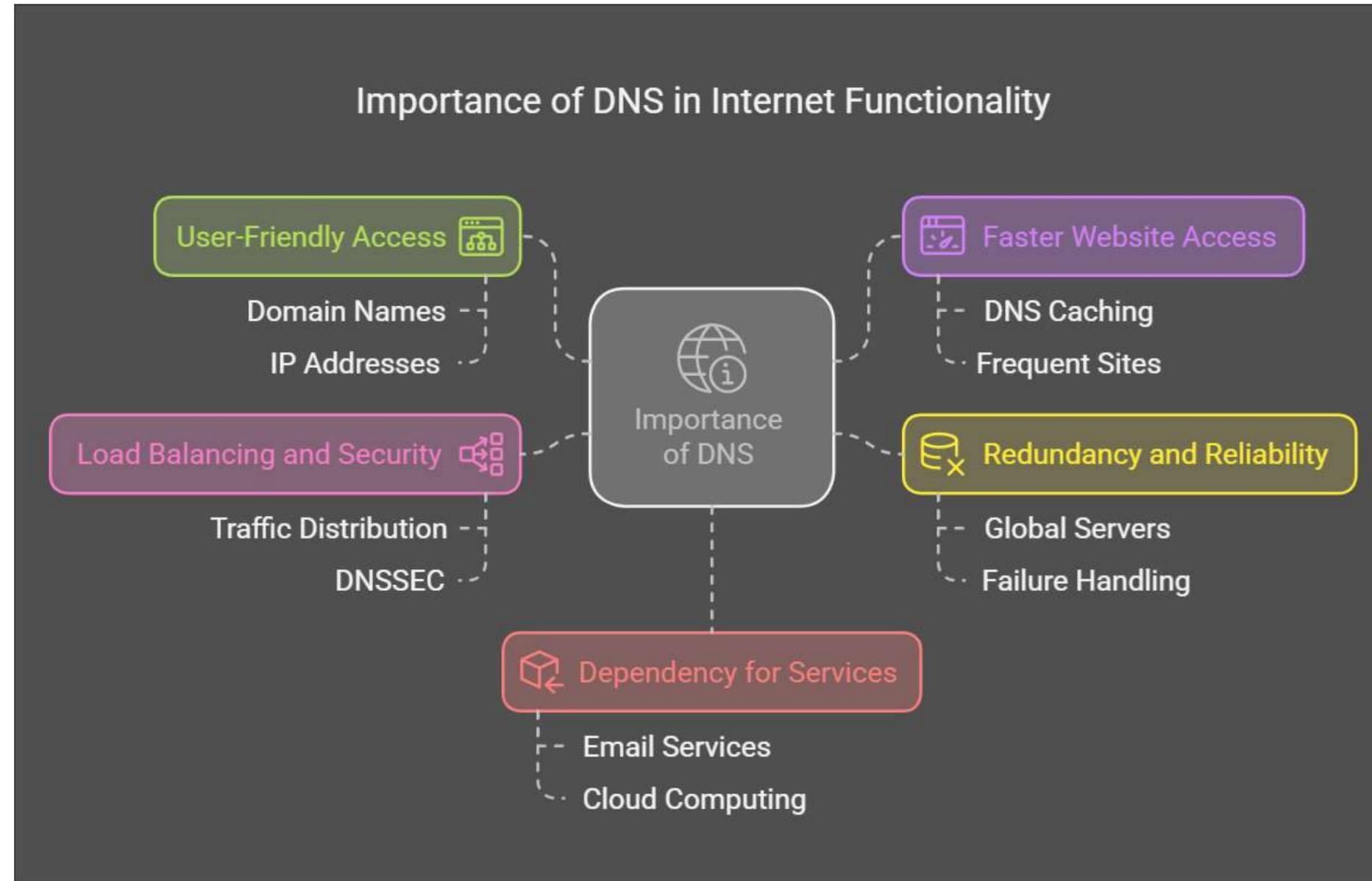


# Challenges of DNS



# Conclusion – DNS solves Real Problems

Why is DNS essential?



# Mindmap



# Thank You