

Department of Artificial Intelligence and Data Science

23ITT204 – Computer Networks

II B.Tech – AI&DS / IV SEMESTER

UNIT I :INTRODUCTION AND APPLICATION LAYER

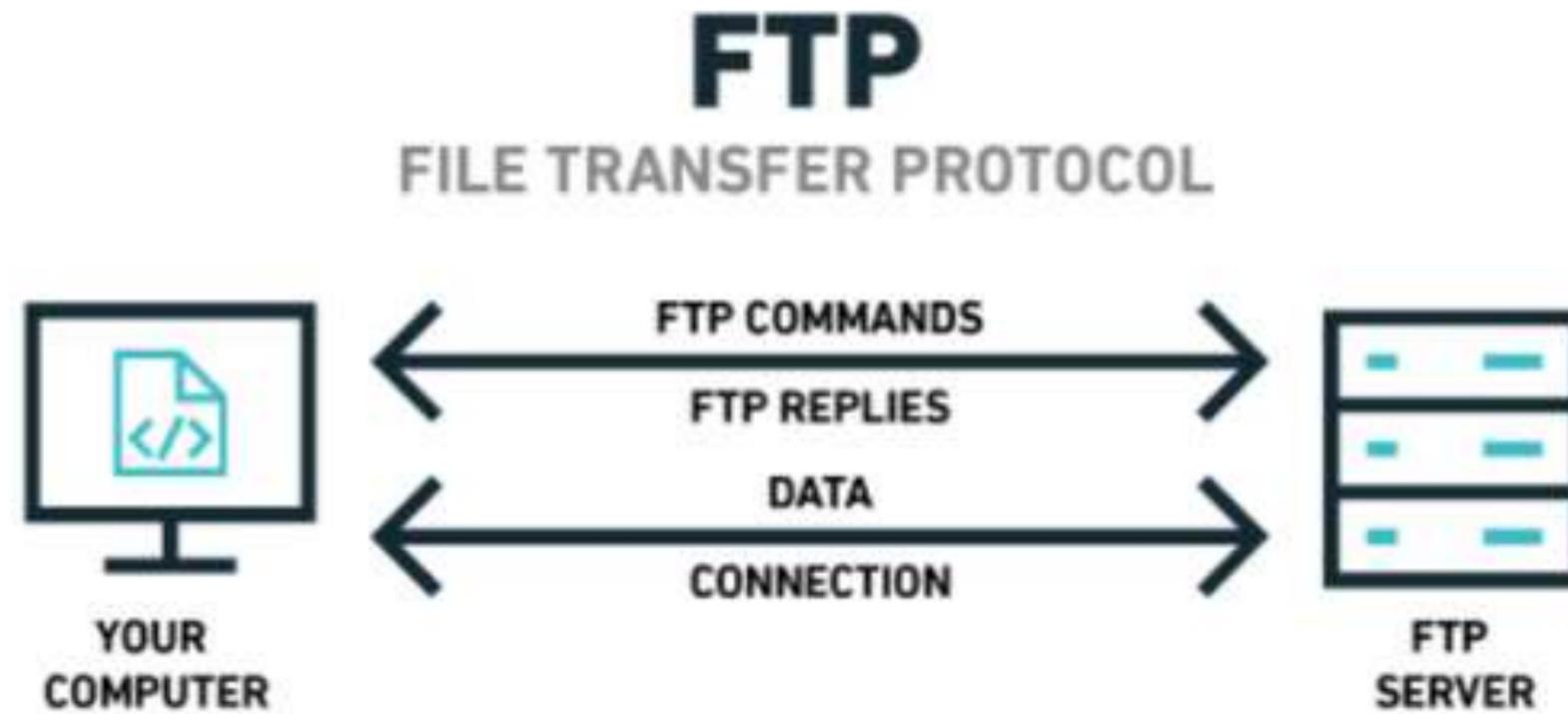
Topic 7: Simple Mail Transfer Protocol (SMTP)

Session's Agenda:

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

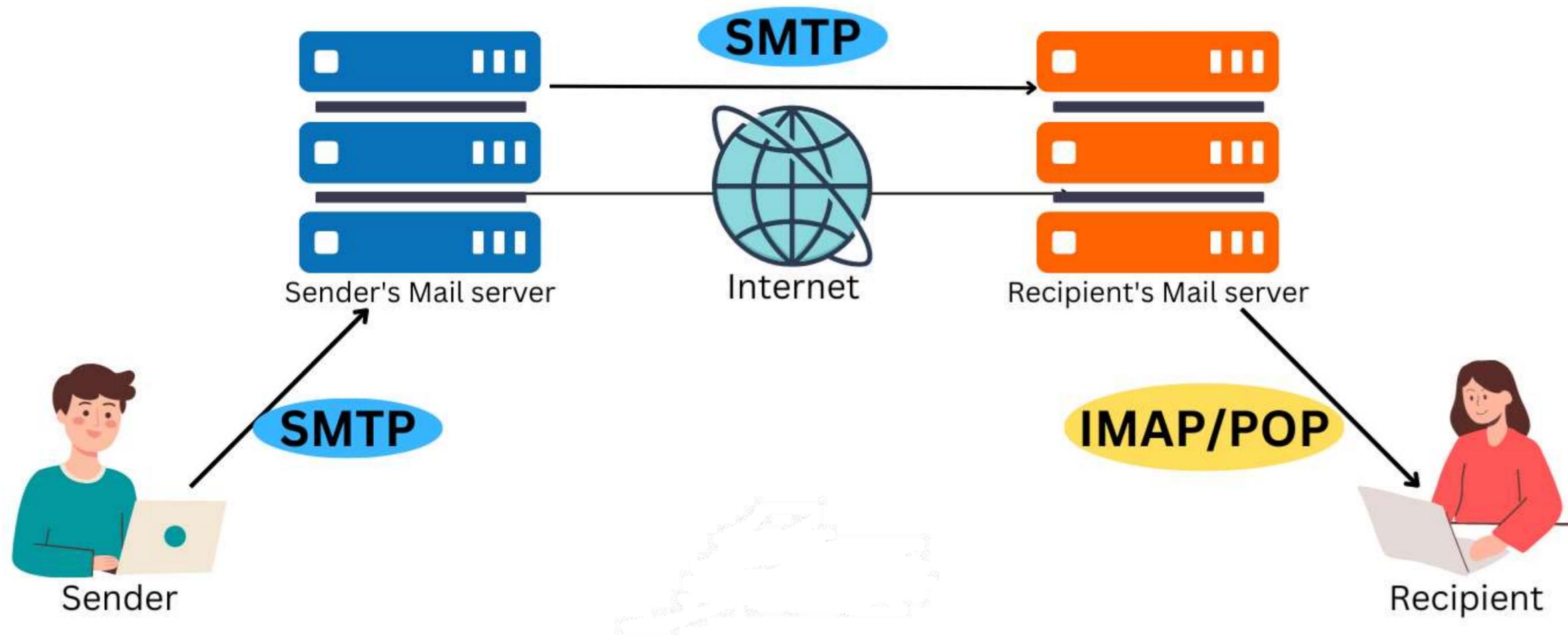


Recap



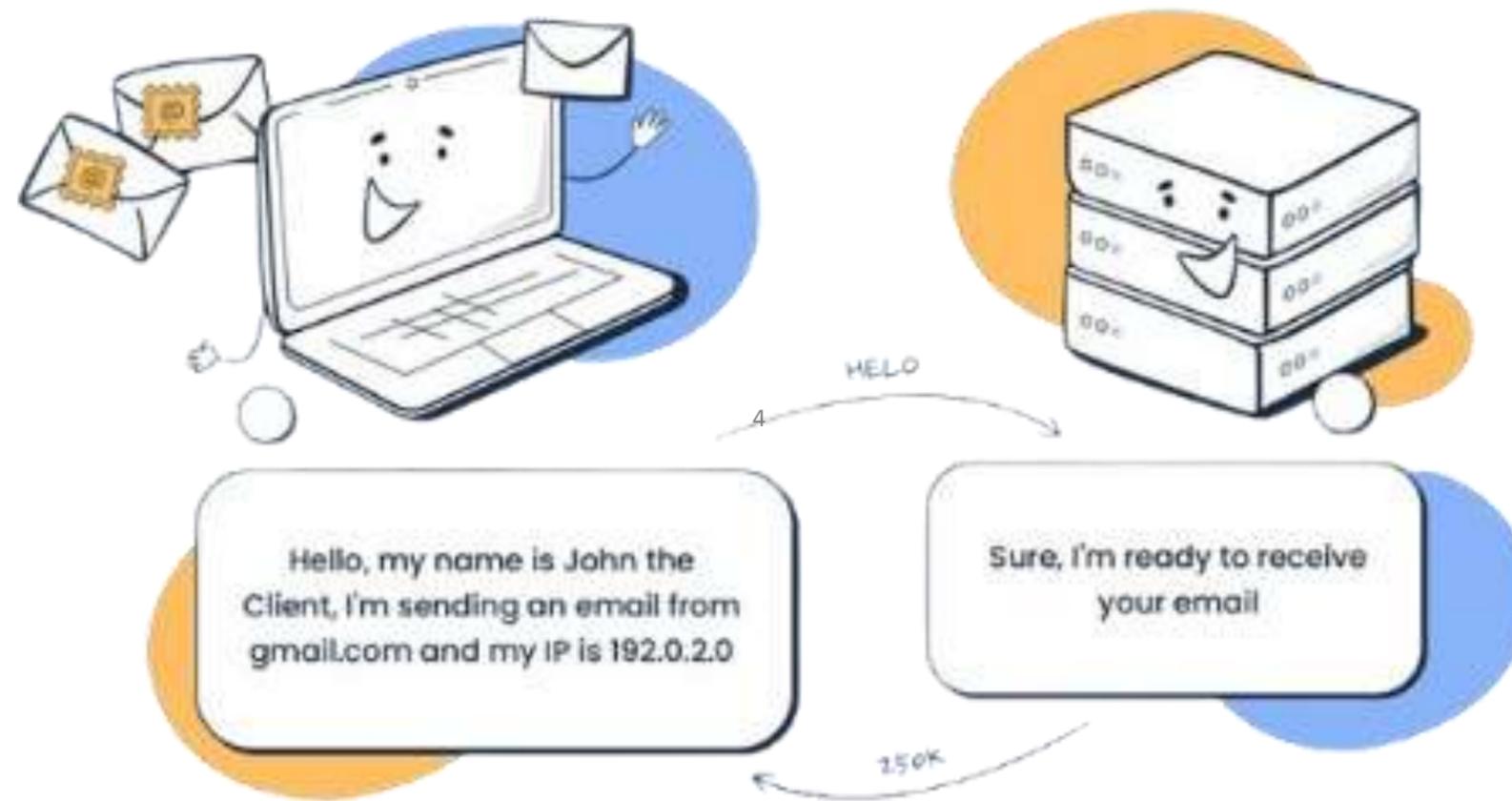
Empathize – Why SMTP?

Why do users struggle to transfer large or multiple files over a network, and how does SMTP enable reliable file sharing through email attachments across different systems?



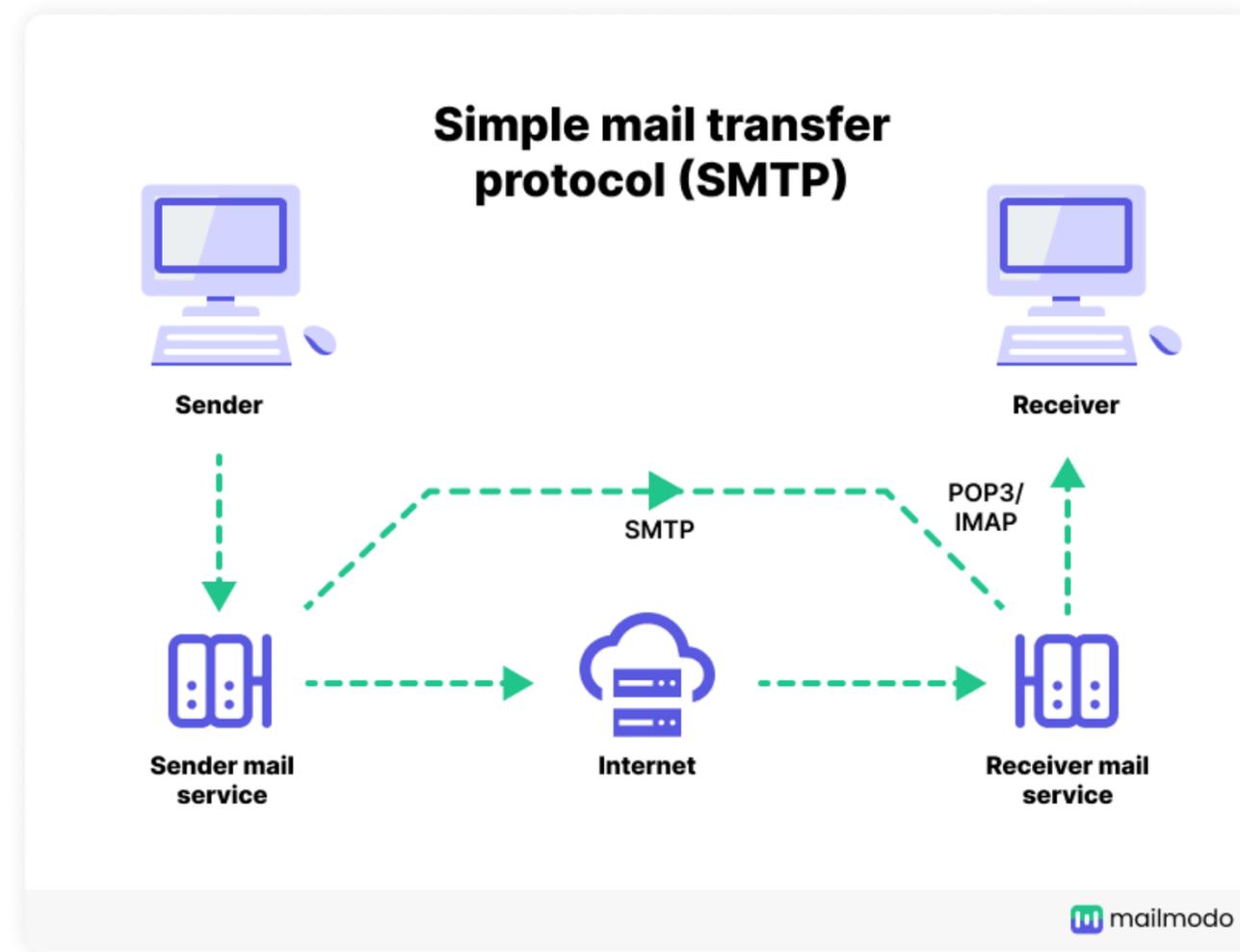
Define – Defining the need for SMTP Protocol

Users face confusion and delivery delays when email clients and mail servers do not follow common rules, making SMTP essential for standardized, reliable sending of emails and attachments across networks.



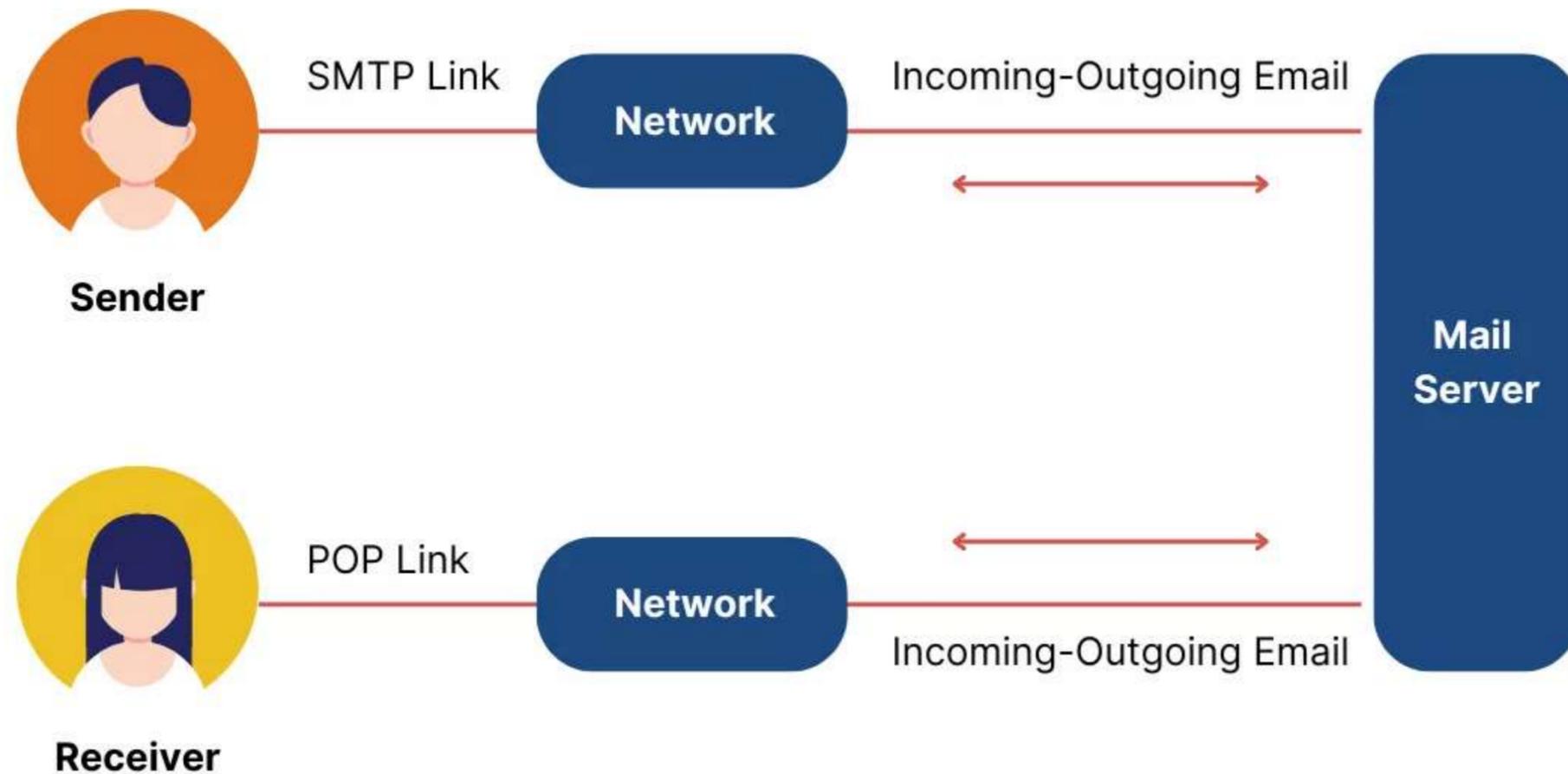
Ideate – Designing SMTP Protocol

SMTP solves email communication problems by providing a clear, standardized mechanism for sending, relaying, and delivering emails and attachments reliably between mail clients and mail servers.



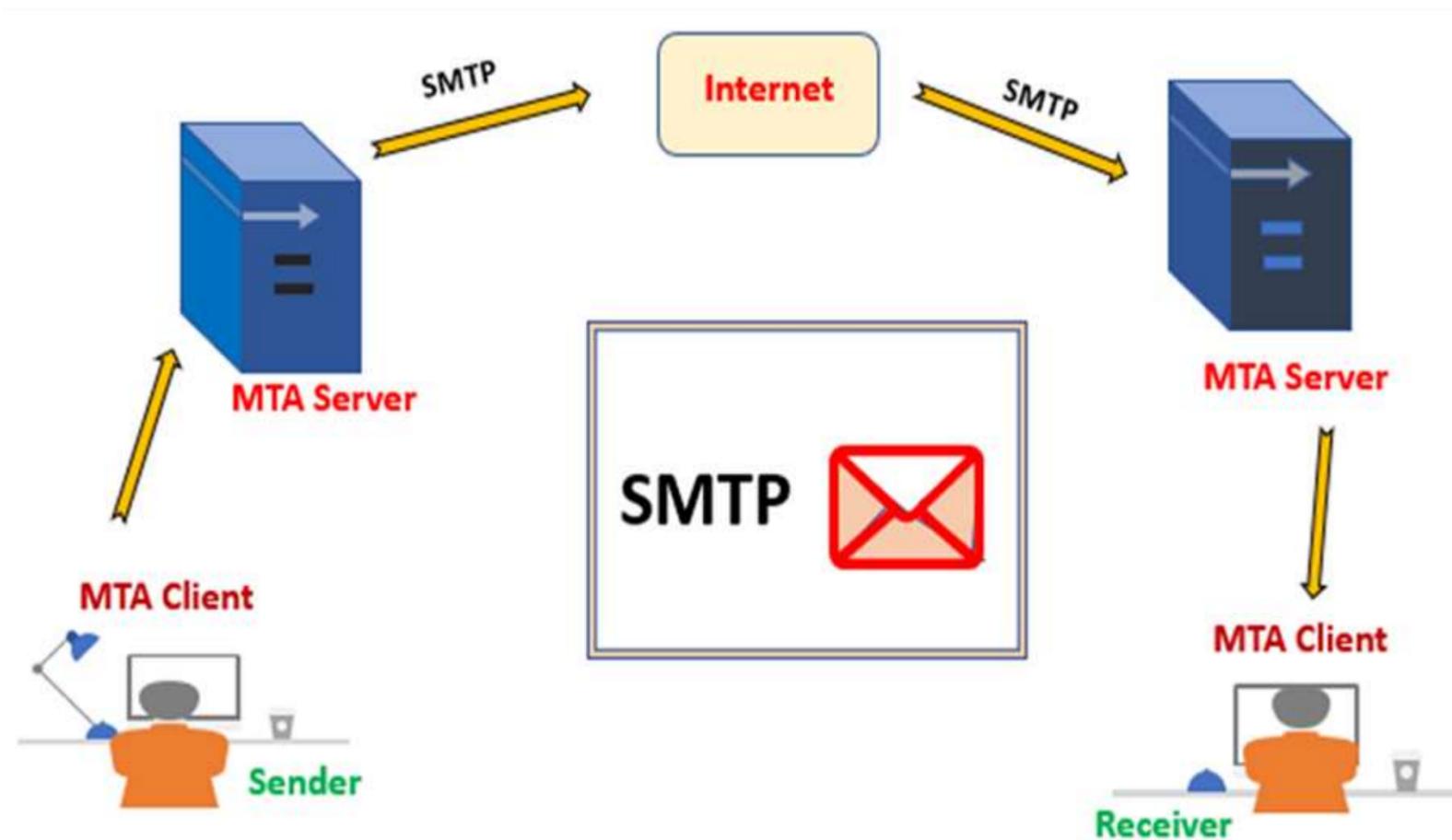
Prototype – SMTP Protocol

How can SMTP be prototyped to demonstrate the step-by-step flow of an email message from the sender's mail client to the mail server, through relay servers, and finally to the receiver's mail server and inbox?



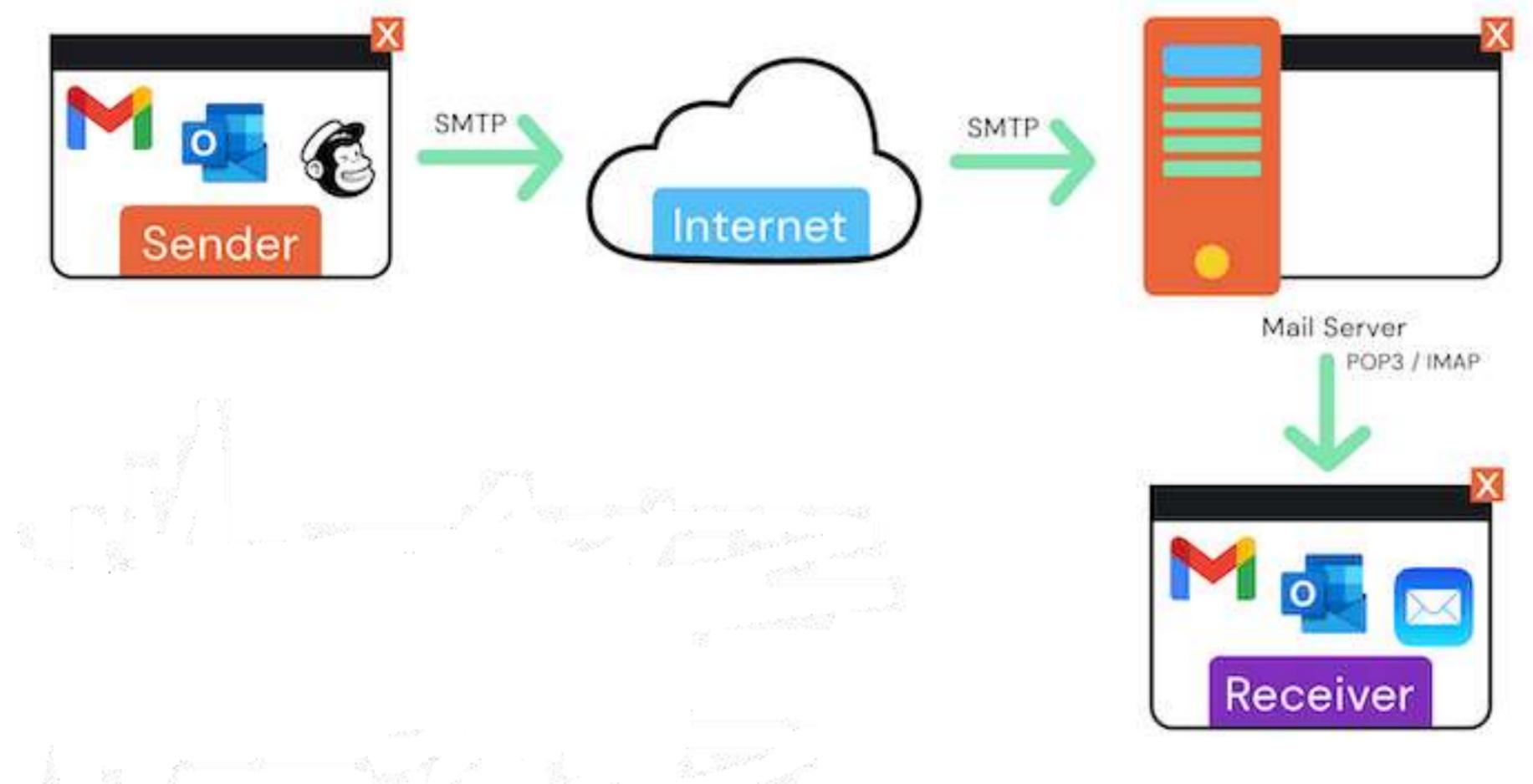
Test – How Data Travels through SMTP

SMTP transfers data by establishing a connection between the sender's mail client and the mail server, sending email commands and message content, and then relaying the message through intermediate mail servers until it reaches the recipient's mail server.



Real-world Scenario (SMTP)

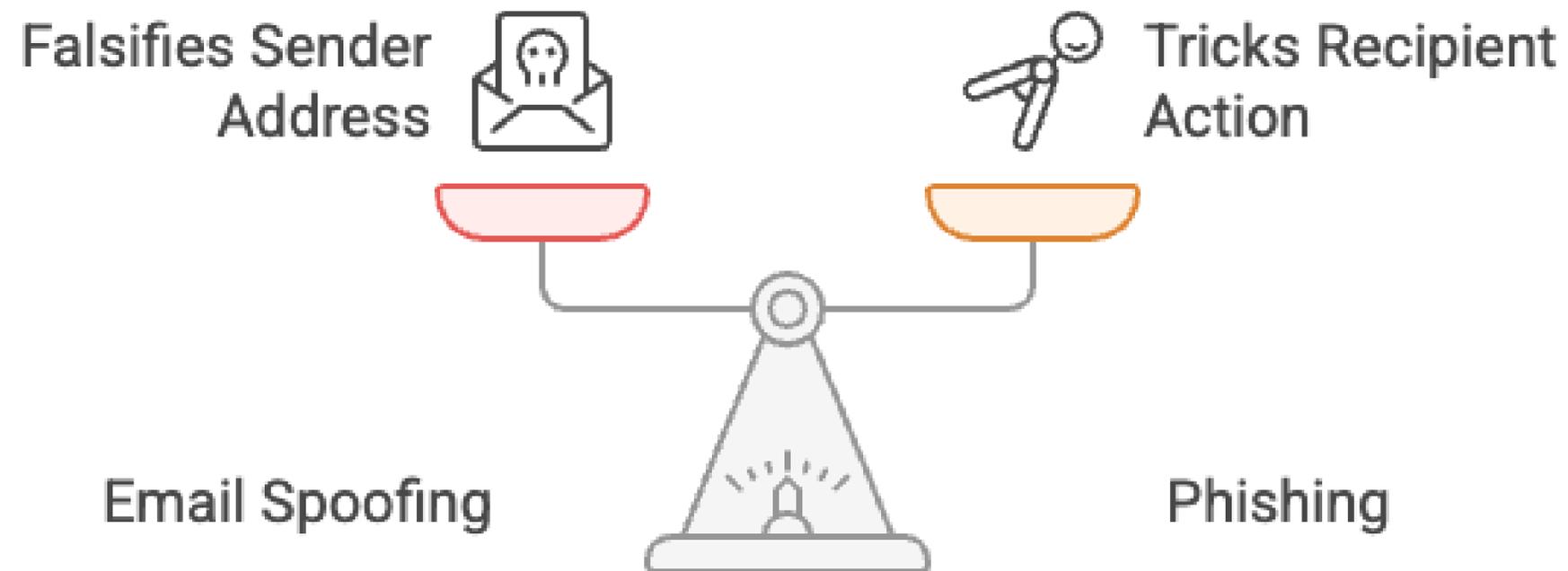
How can SMTP communication be tested to verify that an email message is correctly sent from the sender's mail client to the mail server, relayed across servers, and successfully delivered to the recipient's inbox?



Challenges of SMTP

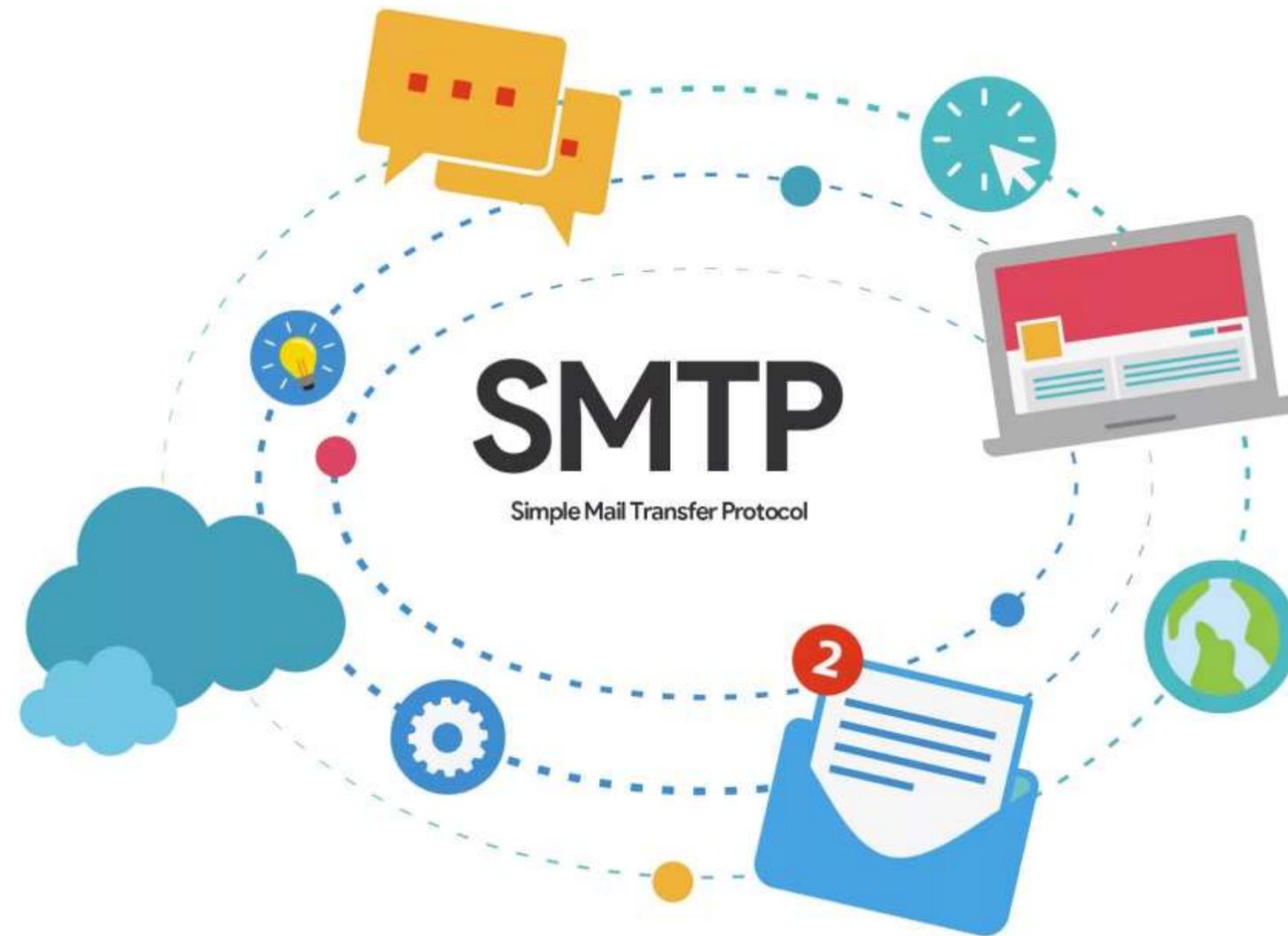
SMTP is vulnerable to spam and email spoofing if proper authentication and encryption are not used.

Email delivery may be delayed or fail due to server misconfiguration, blacklisting, or attachment size limits.

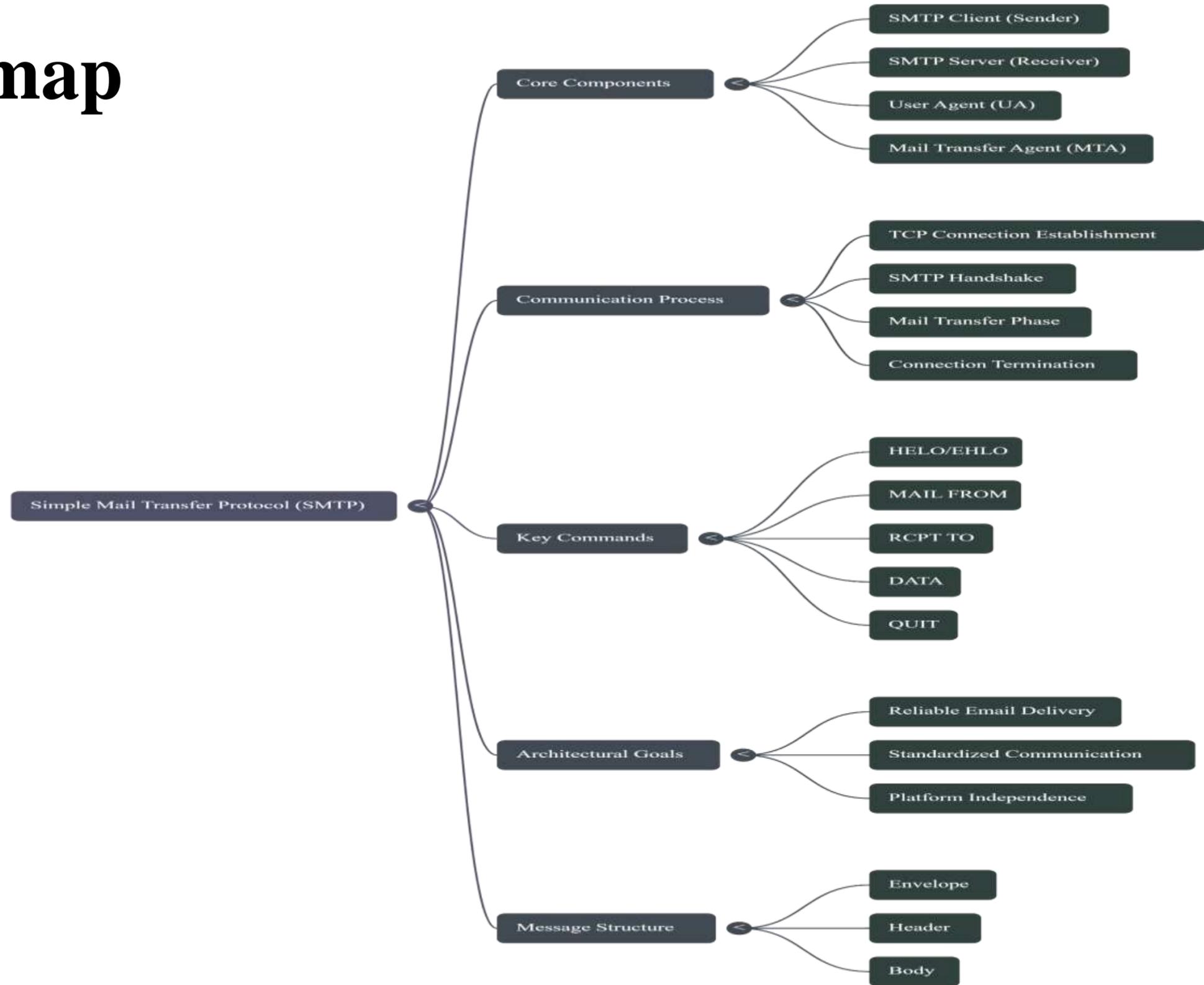


Conclusion – SMTP solves Real Problems

Why is SMTP essential?



Mindmap



Thank You