⌄ 🗨 techExposed Lab #001: How the Internet Works

Lab Type: Idea
Estimated Time: 30–45 mins
Skill Level: Beginner

```
# Let's begin by printing your name to personalize the notebook
your_name = "Catherine Liao"
print(f"Welcome to the lab, {Your_name}!")
```

⌄ 🔍 STAR Method Lab Prompt

Situation:
[We are breaking down the interaction of DNS (Domain Name System), CDN (Content Delivery Network), and the impact of Feature Flag Deployment on internet layers. These systems are often misunderstood because users experience the symptoms (slow websites, 'page not found' errors, unexpected content changes) without understanding the underlying technical processes that cause or prevent them. They don't grasp how a website address becomes content on their screen, or how that process is optimized and controlled.]

Task:
[We are trying to explain how DNS, CDNs, and Feature Flags collectively work to deliver web content efficiently and reliably. The goal is to simulate the journey of a user's request from typing a URL to receiving the final content, highlighting each system's role.]

Action:
[We will use Gemini to generate clear analogies, simplified explanations, and conceptual models for each component (DNS, CDN, Feature Flags). Markdown will be used to structure the explanation, providing headings, bullet points, and code blocks for clarity. Visual explanations (e.g., flowcharts, diagrams of network paths, server interactions) will be created to illustrate the resolution process, content delivery, and feature control, making the abstract concepts tangible and easy to follow for new developers or students.]

Expected Result:
[An understandable, visually rich explanation that demystifies how DNS, CDNs, and Feature Flags work together to ensure reliable and efficient web content delivery. The explanation will address common user frustrations like 'page not found' errors and slow loading times by clearly illustrating the underlying mechanisms.]

```
## ✍ Your Assignment

- **Technology Explored**: DNS (Domain Name System)
- **STAR Output**:
  - S: Users often encounter 'page not found' errors or slow website loading without understanding why. They type a website name
  - T: Explain how DNS resolves human-readable domain names into machine-readable IP addresses, allowing browsers to locate and
```

✍ Your Assignment

- **Technology Explored**: Internet stack (DNS → IP → HTTP → Hosting)
- **STAR Output**:
  - S: Users often encounter 'page not found' errors or slow website loading, and unexpected content changes, without understanding how DNS, CDNs, and Feature Flags contribute to the delivery and behavior of web content.
  - T: Explain how DNS, CDNs, and Feature Flags collectively work to deliver web content efficiently, reliably, and with controlled feature releases. Simulate the journey of a user's request from typing a URL to receiving the final content, highlighting each system's role through visual explanations.
  - A: Use Gemini to generate clear analogies, simplified explanations, and conceptual models for DNS, CDNs, and Feature Flags. Employ markdown for structured content with headings and bullet points. Create visual explanations (e.g., flowcharts, network path diagrams) to illustrate resolution, content delivery, and feature control.
  - R: Produce an understandable, visually rich explanation that demystifies how DNS, CDNs, and Feature Flags ensure reliable and efficient web content delivery, addressing common user frustrations like 'page not found' errors and slow loading times by clearly illustrating the underlying mechanisms.