**🎭 Role-Playing: The Web Request Game**

Using **small index cards** for messages, we will become the Internet.

**1. The Roles & Components**

Assign students to the following key roles. For the Router roles, you can have a few students to show the idea of hops across different networks.

| Role | Responsibility | Props/Actions |
| --- | --- | --- |
| **Happy (The Client)** | Initiates the request to visit **Reddit**. | **Initial Card:** Needs to get to "reddit.com." |
| **DHCP Server** | Gives Happy its local network IP address and the Default Gateway's IP. | A list of available IPs (e.g., 192.168.1.50 - 192.168.1.99). |
| **DNS Server** | Translates the website name (reddit.com) into its IP address. | A very simple list/clipboard: reddit.com -> 151.101.65.140. |
| **Default Gateway / Router (Local)** | Connects Happy's local network to the larger "Internet." | Has the rule: "If the destination IP is NOT in the 192.168.1.x range, send it to the Internet Router." |
| **The Internet Router(s)** | Hops the packet between different, non-local networks. | Can be one or two students who simply pass the packet along. |
| **Reddit (The Web Server)** | Receives the request and sends the webpage back. | **Card:** "Success! Here is the Reddit content!" |

**2. The Play-by-Play (Your Diagram Flow)**

| Step | Action | Roles Involved | Key Concept |
| --- | --- | --- | --- |
| **1. Need an IP? (Yellow Arrow)** | **Happy** asks (yells out) "Does anyone have an IP address for me?" | **Happy** ↔ **DHCP Server** | **DHCP:** Getting a temporary address. |
|  | The **DHCP Server** assigns the next available IP to Mac and tells Happy its own IP and the **Default Gateway**'s IP. |  |  |
| **2. Need a Destination IP? (Red Arrow)** | **Happy** makes a new card: "My IP is X.X.X.X. Where is reddit.com?" and hands it to the **DNS Server**. | **Happy** ↔ **DNS Server** | **DNS:** Translating a name to an address. |
|  | The **DNS Server** looks at its clipboard and hands Happy a card back with **Reddit's IP address** (151.101.65.140). |  |  |
| **3. Same Network? (Decision Point)** | **Happy** compares its network ID (192.168.1.x) to the destination's network ID (151.101.65.x). It determines they are on different networks. | **Happy** | **Subnetting:** Determining if a destination is local or remote. |
| **4. Send to Gateway (Blue Arrow)** | **Happy** makes the final "packet" card: **Source:** Mac IP, **Destination:** Reddit IP. It hands the packet to the **Default Gateway**. | **Mac** → **Default Gateway** | **Default Gateway:** A router that forwards traffic outside the local network. |
| **5. Routing & Delivery** | The **Default Gateway** hands the packet to the **Internet Router(s)**, who pass it until it reaches **Reddit**. | **Gateway** → **Routers** → **Reddit** | **Routing:** Packets hopping between networks to reach a far-off destination. |
| **6. Response** | **Reddit** sends the "Success" card back along the same path (or a simpler path) to **Happy**. | **Reddit** → **Routers** → **Happy** | **Two-way Communication** |