1. What Design System allows you to name IP Address.

- **A design system that allows you to assign custom names to IP addresses is typically referred to as a DNS (Domain Name System). DNS is a hierarchical and decentralized naming system for computers, services, or other resources connected to the Internet or a private network. It translates human-readable domain names (like www.example.com) into IP addresses (like 192.0.2.1) that computers use to identify each other on the network.**

❖ Key Components of DNS

1. **Domain Names: Human-readable names (e.g., example.com) that are easier to remember and use than numerical IP addresses.**
2. **IP Addresses: Numerical labels assigned to each device connected to a network that uses the Internet Protocol for communication.**
3. **DNS Records: Entries in the DNS database that map domain names to IP addresses and other resources. Common DNS records include:**
    - **A Record: Maps a domain name to an IPv4 address.**
    - **AAAA Record: Maps a domain name to an IPv6 address.**
    - **CNAME Record: Maps a domain name to another domain name (canonical name).**
    - **MX Record: Maps a domain name to a mail server.**
    - **TXT Record: Holds text information related to the domain.**
4. **DNS Servers: These servers store DNS records and respond to DNS queries from clients (e.g., web browsers, email clients).**
    - **Root DNS Servers: The top-level DNS servers that direct queries to the appropriate TLD (Top-Level Domain) servers.**
    - **TLD Servers: Handle specific top-level domains like .com, .net, .org, etc.**
    - **Authoritative DNS Servers: Store DNS records for specific domains.**

- **Recursive DNS Servers**: Intermediary servers that resolve DNS queries by querying other DNS servers.

❖ How to Name an IP Address Using DNS

To map a custom name to an IP address, you typically follow these steps:

1. **Register a Domain Name**: Use a domain registrar (like Namecheap, GoDaddy, etc.) to register a domain name.

2. **Configure DNS Records**:
   - Log into your domain registrar's control panel.
   - Access the DNS management section.
   - Add an A record for your domain or subdomain that points to your IP address.
     - For example, to map www.example.com to 192.0.2.1, you would create an A record like:

```makefile
Host: www
Type: A
Value: 192.0.2.1
```

3. **Propagate DNS Changes**: DNS changes can take some time to propagate across the Internet, usually within 24-48 hours.

❖ Example Using Namecheap

If you use Namecheap to register a domain and want to point it to a server with a specific IP address:

1. **Login to Namecheap**: Access your Namecheap account.

2. **Navigate to Domain List: Select the domain you want to configure and click "Manage."**
3. **Access DNS Settings: Go to the "Advanced DNS" tab.**
4. **Add an A Record:**
    - **Click on "Add New Record."**
    - **Select "A Record" from the type dropdown.**
    - **Enter the subdomain (e.g., www) and the IP address you want to map it to.**
    - **Save the changes.**

    By following these steps, you can effectively map human-readable domain names to IP addresses, making it easier to access and manage network resources.