Computer Networking Project Report

Website Link

https://cat.beom.dev/

GitHub Repository Link

https://github.com/Yateeka/Computer-Networks-Projects

Group Members

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Description of the Setup Process

1. **Domain & Hosting**:
    - We chose **Netlify** as our hosting service due to its simplicity and efficient deployment capabilities.
    - The website was hosted on a custom subdomain (`cat.beom.dev`), which was configured through proper DNS setup.
2. **Website Setup**:
    - The website was built entirely using **HTML** and **CSS** to create a clean and visually appealing design.
    - CSS was used to style the website and ensure responsiveness on different devices.
3. **Hosting Process**:
    - After creating the website, the files were uploaded to a GitHub repository to utilize version control.
    - Netlify was then integrated with GitHub for automatic deployment. Any changes to the repository were reflected live on the website.
    - The domain (`beom.dev`) was configured using DNS records to point to Netlify's servers, enabling subdomain functionality (`cat.beom.dev`).

Challenges Faced

1. **GitHub-Netlify Integration**:
    - Initially, we faced issues connecting GitHub to Netlify due to authentication problems. The issue was resolved by reconfiguring permissions and re-authenticating the integration.
2. **Implementing HTTPS**:
    - Enabling HTTPS through **SSL/TLS certificates** required some troubleshooting. Netlify's automated certificate provisioning (via **Let's Encrypt**) ensured secure communication for the website.

3. **Domain Configuration**:
    - Configuring the custom subdomain (`cat.beom.dev`) required an understanding of DNS records, specifically CNAME and A records. Testing and verifying DNS propagation took additional time.

Networking Principles Applied

1. **DNS and Domain Setup**:
    - The custom subdomain (`cat.beom.dev`) was linked to Netlify using DNS configuration. This process involved creating CNAME records to map the subdomain to the hosting provider's servers, ensuring the website was accessible online.
2. **HTTPS (SSL/TLS)**:
    - HTTPS was implemented to secure communication between users and the server. SSL/TLS certificates, provided through Netlify's **Let's Encrypt** integration, ensured encrypted data transfer.
3. **Web Hosting and Accessibility**:
    - Netlify provided global hosting for the website, likely leveraging its CDN (Content Delivery Network) to ensure fast and reliable access for users worldwide. This demonstrates the application of networking concepts such as server optimization and content delivery.
4. **Protocols**:
    - The website utilizes standard web protocols such as HTTP/HTTPS for communication, showcasing practical knowledge of networking fundamentals.

Website Features

1. **HTML and CSS**:
    - The website was built using only **HTML** and **CSS**, with CSS handling the styling and layout.
    - The design emphasizes minimalism and functionality, demonstrating a solid understanding of web design principles.
2. **Responsive Design**:
    - CSS media queries were applied to ensure the website adjusts well to different screen sizes, making it user-friendly across various devices.
3. **Custom Subdomain**:
    - The use of `cat.beom.dev` reflects proper domain and DNS management.
4. **Secure Access**:
    - The website is secured using HTTPS, ensuring encrypted communication and a trustable connection for visitors.

Conclusion

This project provided valuable hands-on experience in building and hosting a website while applying key networking concepts such as DNS configuration, IP addressing, and HTTPS protocols. Despite challenges with GitHub-Netlify integration and enabling HTTPS, we successfully created a responsive website that is securely accessible online. The use of a custom subdomain further demonstrates our understanding of domain management and networking principles.