

1. Research & Development on Git and GitHub

Git :

is a distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

GitHub : is a web-based platform that uses Git for version control and is used for hosting and managing code, as well as for collaboration.

Git

Repository: A storage space where your project's files and their histories are saved.

Commit: A snapshot of your repository at a specific point in time.

Clone: Copying a repository from GitHub to your local machine.

Pull: Fetching and merging changes from a remote repository to your local repository.

Push: Sending your changes to the remote repository.

GitHub

Pull Request: A method of submitting contributions to a repository. A pull request allows others to review your changes before they are merged into the main branch.

Fork: Creating a personal copy of someone else's project.

Issues: A way to track tasks, enhancements, and bugs for your projects.

Commands

- git init: Initializes a new Git repository.
- git clone [url]: Clones a repository into a new directory.
- git add [file]: Adds files to the staging area.
- git commit -m "[message]": Commits changes with a message.
- git status: Shows the status of changes as untracked, modified, or staged.
- git push: Pushes changes to the remote repository.
- git pull: Pulls updates from the remote repository.

Research & Development on Vercel Hosting and Netlify Hosting

Vercel Hosting

Vercel is a cloud platform for static sites and Serverless Functions that fits perfectly with your workflow. It enables you to host Vercel is a cloud platform that focuses on frontend developers, providing tools to host static sites and Serverless Functions with ease. It offers seamless integration with popular frontend frameworks like Next.js.

Features of Vercel:

Static Site Generation (SSG): Automatically generates static versions of your web applications.

Serverless Functions: Build APIs and backend logic without managing servers.

Automatic SSL: Provides free and automatic SSL certificates for secure connections.

Global CDN: Distributes your content across a global Content Delivery Network (CDN) for fast load times.

Instant Cache Invalidations: Deploy changes instantly with smart cache invalidation.

Integrations: Supports seamless integration with GitHub, GitLab, and Bitbucket for continuous deployment.

Custom Domains: Easily add and manage custom domains.

Analytics: Provides insights into your website's performance and user behavior.

Preview Deployments: Create shareable preview URLs for every pull request to review changes before merging.

Edge Functions: Run your code at the edge, closer to your users, for improved performance.

Uses:

- Hosting static websites and Single Page Applications (SPAs).
- Deploying Serverless APIs.
- Providing dynamic content through Serverless Functions.

Netlify Hosting

Netlify is a powerful platform for building, deploying, and managing modern web projects. It offers a comprehensive set of tools and services to automate the deployment process, manage backend logic, and handle various aspects of web hosting.

Features

- Continuous Deployment: Automatically deploys your site from a connected Git repository (GitHub, GitLab, or Bitbucket) on every push.
- Serverless Functions: Build and deploy backend functions without managing servers.
- Forms: Handle form submissions without writing backend code, with support for notifications and integrations.
- Identity: Provides authentication and user management services.

Uses

- Hosting static websites, Single Page Applications (SPAs), and Jamstack applications.
- Deploying Serverless Functions and APIs.
- Handling form submissions and managing user authentication.
- Managing large media assets and optimizing delivery of websites and web applications with ease and scale automatically.