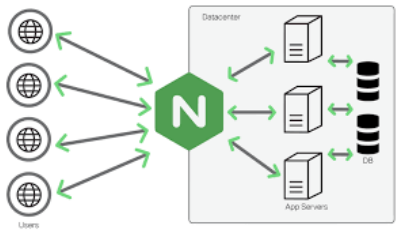
Install nginx in your local VM and configure it with a basic html page and then test the webserver from a browser.

Nginx:

- **Nginx it's is a gateway that stands between internet and backend infrastructure.**
- Nginx is started as a solo project by Igor Sysoer, he originally wrote **Nginx to solve the C10K(concurrent 10,000) problem.**
- Nginx revolutionized how server operates in high performance contexts and become the fastest web servers available.
- **The computer which provides the service when user search for the webpage by using url with HTTP request and send back the response is known as the web server which serves the web pages.**
- **Web servers are the computers which serves the requested web pages**. Every web server has an Ip/DNS.
- To make a computer a web server we need software applications to use such as WAMP, XAMP, Microsoft IIS- etc.
- Nginx is an opensource software.
- **Web server for reverse proxying, caching and load balancing.**
- Provides HTTP server capabilities, designed for max performance and stability.
- Uses a non-threaded and event-driven architecture.
- **By using Nginx the application displayed and loading time will be reduced.**
- **Proxy is nothing but the work done on behalf of you. Proxy is an interface between you and outside world, it acts as schield, filter and firewall. Proxy is used to protects the users/clients.**
- **It takes the request from LAN and goes out to another network and gets back the respone and keeps all the bad stuff out asked.**
- **It is used for firewall, better management, security, performance, caching, encryption and decryption.**
- **Caching is known as if multiple clients are using the proxy if a static webpage is asked from the same website from different user, the response comes from proxy instead of going to the server and collecting.**
- **Reverse Proxy:** Used to protect the servers.
- **A request from web pages goes through reverse proxy to reach server, here servers are protected.**
- It has all the benefits of proxy, with additional one of load balancer.
- **Load balancing is known as to balance the request from multiple client and how to send them to server.**
- Reverse proxy also zip/compress the data packages with request and response.

Working of Nginx:



- **The traffic from users go to Nginx and nginx form a good load balancer and send the request to the physical servers of datacenters from there data can be collected from database. And response go back to user through Ngnix.**
- Wordpress uses ngnix for its load balancer need. It is an opensource published software we can use to create a websites/blog.
- It serves more than 33 million sites attracting over 339 million people to 3.4 billion pages each month.

Reasons:

- Ease of Installation.
- Maintenance.
- Improved Performance.
- Offers Scalability.

- Reduces the wait time for users.
- Load Balancing.
- On the fly upgpgrade - **To get update without having to take downtime and disrupt our business.**

Configuration Settings:

The core settings of Nginx are mainly configured in the nginx.conf.file. This file mainly structured into 2 contexts, they are event context and HTTP context.

- **Worker Processes:** Setting that defines the no of worker process that nginx will use. Nginx is the single credit this number could usually be equal to no of CPU cores.
- **Worker Connections:** Maximum no of simulteneous connections for each worker processes how many people can simulteneously be served by Nginx.
- **acess-log and error-log:** These are the files that ngnix use to log any errors and access attempts to their logs are generally reviewed for debugging and trouble shoot.
- **gzip:** Compressing nginx response so enabling one with the subsetting that by default are commented out will result in quote a big performance upgrade.

Installation:

Install Nginx:

```
sudo apt-get update
sudo apt-get install nginx
```

Enable Firewall:

```
sudo ufw enable
nginx -v
sudo ufw app list
sudo ufw allow 'Ngnix Full'
sudo systemctl status nginx
```

Go to /var/www/html directory and give the required permissions.

```
cd /var/www/html
sudo chmod -R 777 ./
```

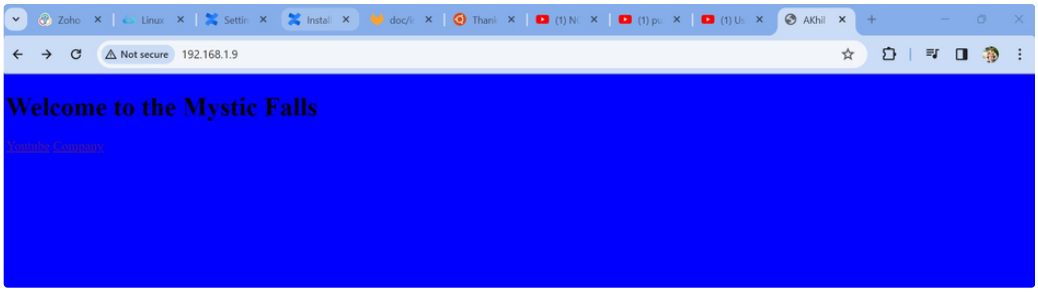
Create a .html file and write a code to make a simple website.

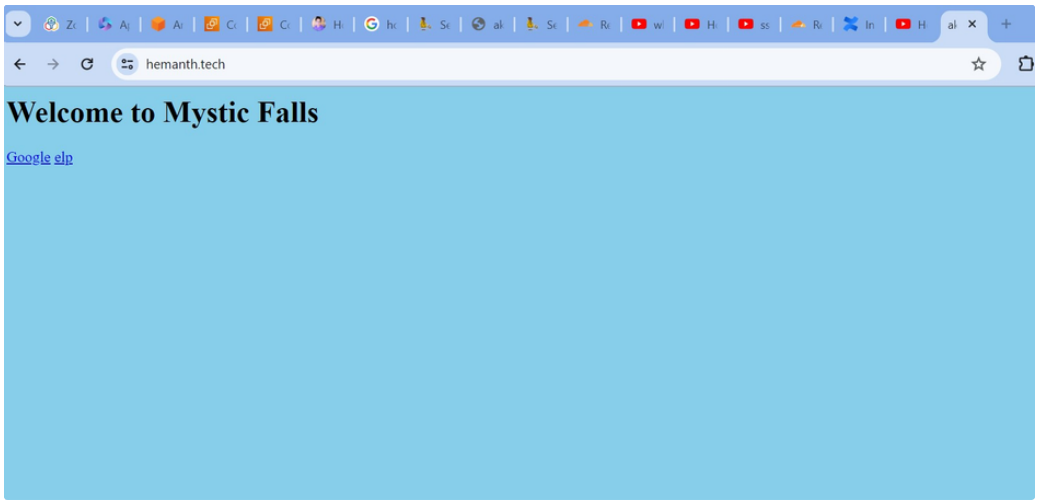
```
nano index.html
<!DOCKTYPE html>
<html>
<head>
  <title>akhil</title>
</head>
<body style="background-color:lightblue">
  <h1>Welcome to Mystic Falls</h1>
  <a href="google.com">Google</a>  <a href="elpaviation.com" target='_blank'>elp</a>
</body>
</html>
```

To see the list of nginx filrs use the following command.

Html command is the default web directories where you can place the HTML file.

```
ls /etc/nginx
ls /var/www/html
```





- Create an A record and redirect the domain name to public IP address.

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