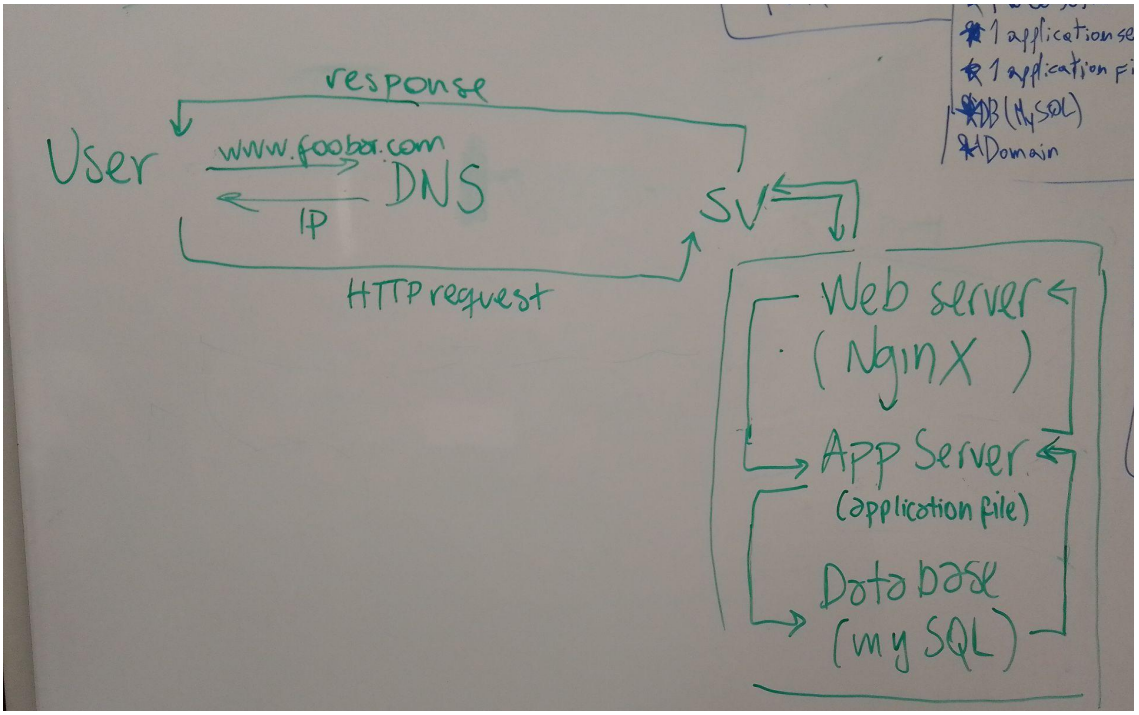

The user writes a domain address to a webpage, this address is searched in DNS servers to look for the IP. Then the DNS server returns the IP and the browser finally makes a HTTP request to that IP in the specific port (HTTP port 80).

The request is taken by the web server (in this case NginX), then the web server that has static content communicates with the application server which has dynamic content. The app server intermediates between the web server and the application file, which has all the base code needed for the service that the webpage provides. In mySQL database, information will be stored.

Now the database returns the information needed to the application server, which processes the information in whatever way is specified in the application file to give it back to the web server. After that, a response to the request is finally given to the user.

Concepts:

What is a server?
A server can be any computer, it provides a service. Generally, servers have more processing capability than most user-target computers. It has specific software to manage the user requests also known as the client.

What is the role of the domain name?
A domain name simplifies the task of connecting to a webpage, since the user doesn't have to put a complicated IP and just an "alias".

What type of DNS record www is in www.foobar.com?
It's an A record

What is the role of the web server?
A web server program play the role of a server client-server model,
clients-server characteristics describe the relationship of cooperating programs in an application.
a web server serves web pages and a file server serves computer files.
For our interest we are going to show some characteristics about web servers.
servers programs can differ depending how they are implementing, but most servers have commons features,
and task.

basic features that web servers usually have are:
- -static content serving: be able to serve static content(web files)
- -allows at least one of HTTP or HTTPS protocols versions.
- -have capability of logging some information about server responses and clients.

some advanced features are dynamic content serving,visual hosting, authorization,content cache, large file support,
custom error pages.

Common task:
A web server usually performs several tasks.

-manage clients connections(accepting or closing depends as required)

-receives clients request(HTTP messages), reads and verify each HTTP request message)
usually performs others request like:
- -performs url normalization
- -performs url mapping
- -performs url path translations

-executes or refuses requested HTTP method:
optionally:
- -url authorizations
- -url redirects
- -static resources(file contents), like directory index files.
- -dynamics resources: manages directory listings, manages programs or module processing.

-replies to client requests sending proper HTTP responses.

What is the role of the application server?
An application server is the mixed framework which contains all the source code to communicate the web server with the DataBase.
What is the role of the database?
The role of the database is to store and manage the data (CRUD). If received, a consultation returns the expected data.
What is the server using to communicate with the computer of the user requesting the website?

Infrastructure issues:

***SPOF*:**
A single point of failure is a flag in the design,configuration, or implementation of a system.
in our case the spof is the server because if the server fail,
we can't obtain our request.

Downtime when maintenance is needed.
To avoid the downtime we can use differents techniques:
We can disconnect the database from the load balancer.
Other technique could be alter the database schema while still running queries in parallel,
We can make some other configuration to avoid or eliminate the downtime.
But in this case, as we don’t have any backup server, the server will be down until maintenance is done.

If too much traffic
If we have too much traffic we can overload our server, to prevents this issue,
We can adopt some standard practices, like blocking unwanted incoming traffic using firewalls, providing alternate sources for content and handling different file sizes.
In our case we don’t adopt this prevention so if we have too much traffic probably the server will get overloaded.