

Python Projects

Chatting application:

With this application, you can now:

- Learn more about **Local Area Networks, networks, connections**, and the **internet**
- Create and connect to super-secret, anonymous chat rooms
- Every chatroom is password protected and is hosted discretely in its own port, which means no uninvited guests!
- Messages sent through the application are never stored physically or virtually after shutting down the chat, which means you'll leave no trace of any interaction behind whatsoever!!!
- Chat with anyone connected to your internet!

What are:

Local Networks:

A local area network is a computer network that interconnects computers within a limited area

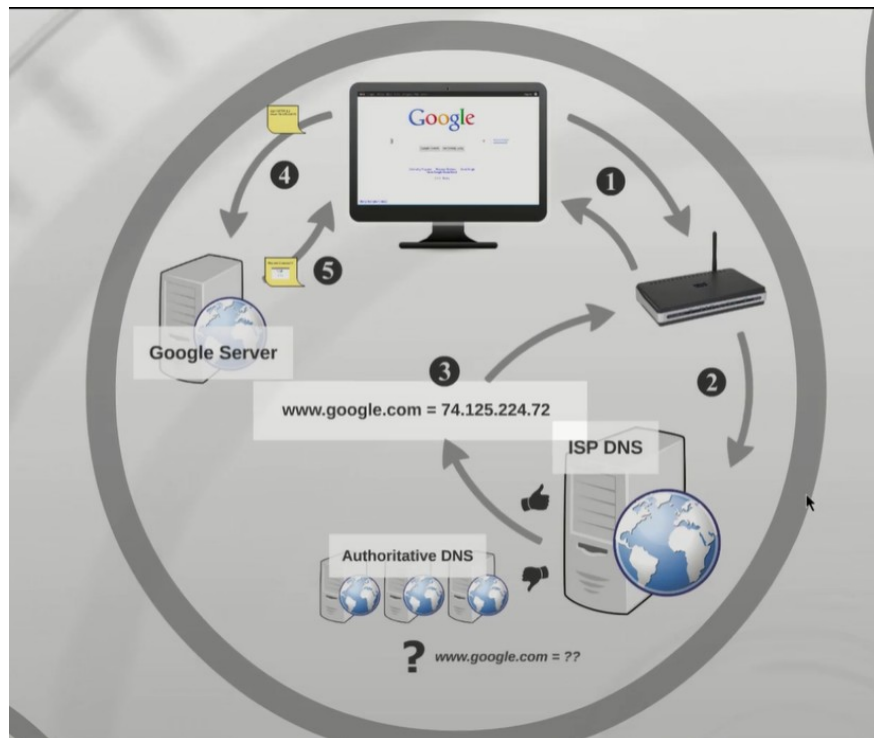
Networks:

Collection of computers, servers, mainframes, network devices, peripherals, or other devices connected to allow data sharing.

An example of a network is the Internet, which connects millions of people all over the world.

Connections:

The extensive process of connecting various parts of a network to one another



How does the internet work?:

1. What's is the **internet infrastructure**?

The internet is a network of cables that facilitates the transmission of "Data Packets"

2. What are **Data packets**?

contains the information being transmitted over the network. They also contain information about the sender and recipient.

Data Packet

Header:

- Senders ip
- receivers ip
- protocol
- packet number

Payload:

- Data

Trailer:

- Data to show end of packet
- Error correction

3. Ip Address

Is a string of numbers separated by periods they define the address of the device.

4. Bandwidth

Is the speed at which data packets can be transmitted and its measured by "Bitrate".

Bitrate - number bits per second a network can transmit.

Latency - Amount of time it takes for 1 bit to be sent from the sender to the receiver

5. Protocol

IP (internet protocol) - route info to the proper address

- TCP protocol - Facilitates the transmission of data packets Ensure that no information is missing

- HTTP protocol

- HTTPS protocol - More secure than HTTP

 - Data packets are encrypted using SSL(secure socket layer) or TLS(transport security layer)

- SMTP protocol - Simple mail transfer protocol

 - Two types of mail delivery

 - Local domain

 - outbound domain

6. Web Server

A computer that hosts a website or web applications.

Configured to accept remote connections with internet users and relay data through HTTP/HTTPS

7. Security Certificate

Requires installation on the web server and can be purchased from a reputable vendor

(EV[Extended validation] certificates offer the highest level of security)

NOTE: Network basics - LAN and WAN

LAN (Local Area Network)

A group of computers that share a common communication line within a relatively small area.
typically confined to a single room, building or group of buildings

WAN (Wide Area Network)

A more complex network that spans across much larger geographical areas such as cities, states and nations.
The internet is the largest WAN in existence

Network Ports

This is like a data pipe line that can Configured on your router based different protocols.

Firewalls

Is a system designed to prevent unauthorized access to or from the network.

- Hardware -> on the routers

- Software -> on the Development