**python Networking Demo requests and socket**  
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**Objective:**  
The goal of this project is to demonstrate the basics of Python networking using two built-in libraries: requests and socket. These tools allow programmers to interact with websites and low-level network functions such as domain resolution and IP address identification. The project is intended for educational purposes and serves as an introduction to core networking concepts.

**Overview:**  
The script is divided into three parts:

**Website Status Checker using requests:**

The script checks the availability of websites such as Google and GitHub by sending HTTP GET requests and displaying their response status codes. If a site is up, it returns a 200 OK message. Otherwise, it reports a failure. This is useful for monitoring server health.

**Connecting to Google using socket:**

This section demonstrates how to perform low-level socket programming. It retrieves Google’s IP address using DNS resolution, creates a TCP socket, and attempts to connect to port 80 (HTTP). This mimics how browsers establish a connection with websites behind the scenes.

**Network Information Tool:**

The script retrieves the user’s local hostname and IP address. It also resolves domain names like www.python.org and www.stackoverflow.com into IP addresses, demonstrating how DNS (Domain Name System) works.

**Tools and Libraries:**

**Python 3.x**

**requests** – for making web requests

**socket** – for raw network connections and hostname/IP handling  
**Why This Project Matters:**  
Understanding how computers talk to each other across networks is a foundational skill for anyone in computer science, cybersecurity, or software development. This project gives a quick but powerful demonstration of how networking works under the hood, all through simple Python code.