GSoC 2024: Proposal to Mitmproxy

Improving DNS Support & Other Side-Quests.

— Sujal Singh

1 – Introduction

Background

Name	Sujal Singh
Slack Username	sujaldev
Email Address	email.sujalsingh@gmail.com
Primary Spoken Language	English

1. Preferred coding languages and experience

Python (Intermediate):
Python is my preferred programming language as I've built numerous projects with it:

- Skylon: A browser rendering engine built from scratch.

- Lyn: A simple demo language built at a hackathon to generate animations.

- LaTeXHub: Fast CI/CD for LaTeX repositories on GitHub.

- GMSG: Generates a slideshow image sequence from input images.

More python projects indexed in my GitHub README.

HTML, CSS & JavaScript (TBD):
TODO

Others:
I am currently learning C.

2. Previous usage with mitmproxy, Charles, Fiddler, ZAP, Burp, other Honeynet Project tools, honeypots and HTTP tools in general

- I have used Burp Suite before to test a variety of websites.

- I converted a website that wouldn't allow opening developer tools in the browser to an API by using mitmproxy to modify the javascript file responsible for preventing developer tools from functioning properly.
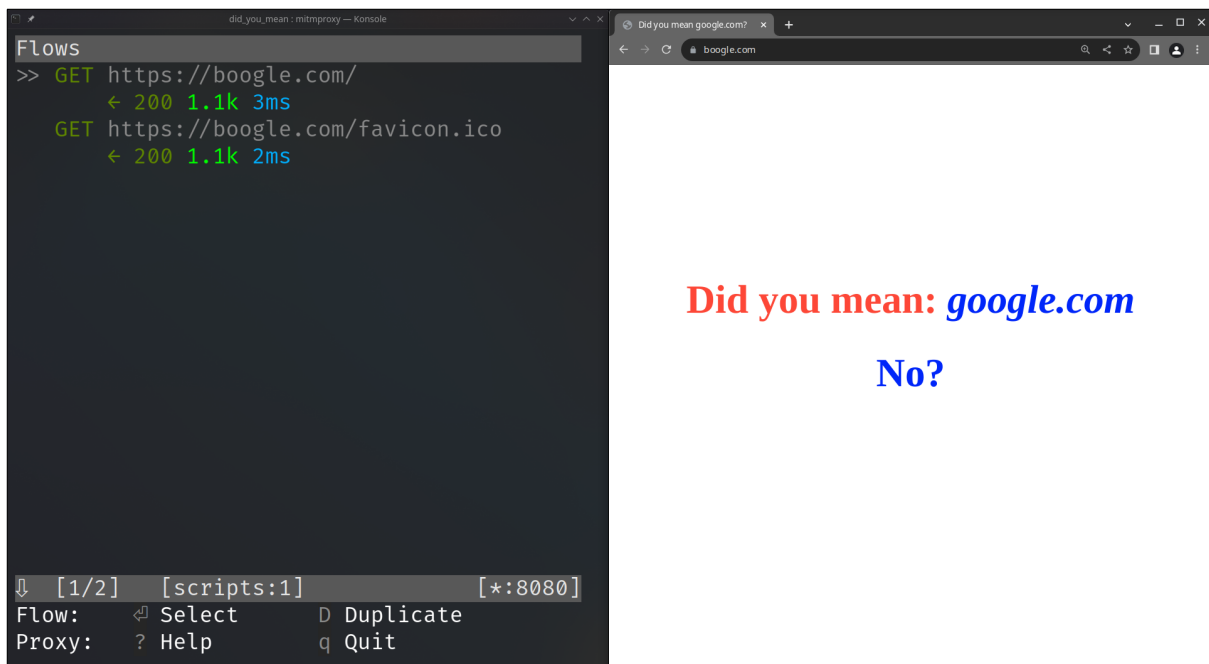
Figure 1.1: *"Did you mean?"* Addon Demo

- I wrote a mitmproxy addon that implements a spellcheck feature for when you mistype a popular domain name, and also remembers the choices you made so you aren't prompted more than once for a particular website.

3. Previous open source development experience

I have made tiny contributions to a few projects:

qpixel	almalinux.org	quantumrand	github/explore
maoschanz/drawing	psutil (pending)	pip (rejected)	podman-rootful-network

And I've also made some contributions to mitmproxy.

4. Current school and specialty/major at the school

I am currently enrolled at the *University School of Automation & Robotics, GGSIP University, New Delhi* where I've opted to study *Industrial Internet of Things* (the curriculum offers courses in Computer Science, Software Engineering and Electrical Engineering).

5. Number of years attended there

I am currently a first-year student.

6. City/country of residence this summer

New Delhi, India.

7. Expected time available for this project

I'm expecting to have a minimum of 5 hours a day.

8. Jobs, summer classes, vacations, exams, and/or other commitments

1. **Practical Examination**: May 22 – May 29
2. **End-Term Examination**: June 06 – June 26

9. Participation in any previous Summer of Code project

None (I did apply to mitmproxy last year but didn't make it in).

10. Applications for any other GSoC project

I have neither applied nor do I intend to apply to any other GSoC projects.

11. URL for resume/CV

resume.sujal.dev

12. Personal/blog URLs

There's not much there but this is my homepage: sujal.dev