

Professional Training Year



2025-2026



Fig. 1 My second day at IBM, next to their z17 mainframe



Fig. 2 Me at IBM's London office

IBM: 113 Years of Innovation

Founded in 1911, IBM has transformed from a hardware pioneer into a global leader in hybrid cloud, AI, and consulting services.

Historic Achievements [1]:

- 1981 PC set industry standard
- Invented: Hard disk drive, floppy disk, UPC barcode, SQL
- Watson defeated Jeopardy! champions (2011)

Today, the company powers critical infrastructure and research worldwide through its **IBM Z mainframes**, **enterprise AI platforms**, and **quantum computing labs**, while its UK headquarters at **Hursley Laboratory** drives mainframe innovation and open-source initiatives like Galasa. [2]

Galasa

Galasa is an **open-source integration test framework** designed specifically for z/OS powered hybrid cloud applications, enabling automated testing at scale for mainframe environments. [3]

Primarily, Galasa is a **CLI tool**, however, an alternative way to use Galasa is to deploy the **Galasa Service**. This is a web application which allows tests to be parallelised and viewed on a graphically on a front-end with role-based access control.

My Role and Responsibilities

I worked as part of a **4-person team** on Galasa, with core responsibilities including **development work** [4], **PR reviews**, **SCRUMs** three times weekly, bi-weekly **iteration planning meetings**, and **regularly presenting to 70+ colleagues** during our monthly update slot to the wider department, **CICS** (Customer Information Control System). CICS is a high-performance middleware server from IBM used for online transaction processing on mainframe computers.

After initial onboarding with team challenges and upskilling tasks, I took on diverse responsibilities beyond my work on Galasa. Highlights included managing the site-wide "**Hursley Minigames**" event, joining **IBM's patent incubator program**, participating in **hackathons**, and **volunteering activities** such as gardening and serving as an **AI ambassador** to Bristol Free School. I also loved hosting a weekly bouldering social!

Achievements and contributions

Unblocked Galasa 1.0.0 Release: Delivered the personal access token expiry feature, removing a critical barrier to the project's major milestone release. This security enhancement ensures tokens cannot be used beyond their expiry date across CLI, WebUI, and authentication layers.

Delivered Major CICS Requirements: Built the 3270 terminal screenshot viewer enabling CICS users to visualise 3270 mainframe interactions (see *fig. 3*).

Won Over Enterprise Client: Co-presented at an internal conference to 20+ clients, successfully securing the project's first enterprise Galasa adopter.

Led AI Innovation Hackathon Project: Managed a team of 7 in creating an MCP server that summarises and categorises Galasa test logs. Presented project with a live demo to peers and a panel of judges.

My Skills Developed

Technical: Through Galasa, I gained skills across a full-stack, scalable, enterprise project. Being in a 4-person team meant I was stretched to learn, and contribute to, all aspects of our tech stack (see *technologies and tools*).

Non-Technical: I've had lots of chances to present throughout this year, a key skill I was seeking to improve. Multiple online presentations to 70+ people, and in-person conference to 20+ clients have been the highlights. Working within a small team of 4 has also been key to strengthening my interpersonal and general teamwork skills.

Challenges, How I Overcame Them & Tips for Graduates

Presenting to Senior Clients: Faced the challenge of presenting at an internal conference to 20+ clients to convince them of automated testing. I overcame this through a set of presentation skill workshops from a department colleague, William Yates, as well as extensive practice.

Full-Stack Development Across Unfamiliar Technologies: I asked to start where I felt comfortable, with front end development, but I was asked to contribute to the CLI and Java backend. I overcame this by getting comfortable with being uncomfortable and saying yes to all the opportunities I was given. The steep learning curve at the beginning of a placement can feel overwhelming. Don't shy away from tasks or technologies just because you haven't seen them at university! I'll also mention that being able to efficiently read documentation is a real skill that will differentiate how quickly you learn. This advice I picked up led me to systematically learn about and, confidently contribute across, the entire codebase - achieving 750+ contributions.

Leading a Diverse Team: Managed a mix of 7 graduates and interns for an internal hackathon. I overcame this with listening to people's interests and abilities, setting clear role definitions and goals, then followed up with regular check-ins, resulting in a successful demo.

Technologies and Tools Used

CLI: Cobra, Go, Native Go-Unit tests (testing)

Frontend: Next.js, TypeScript, Jest (testing)

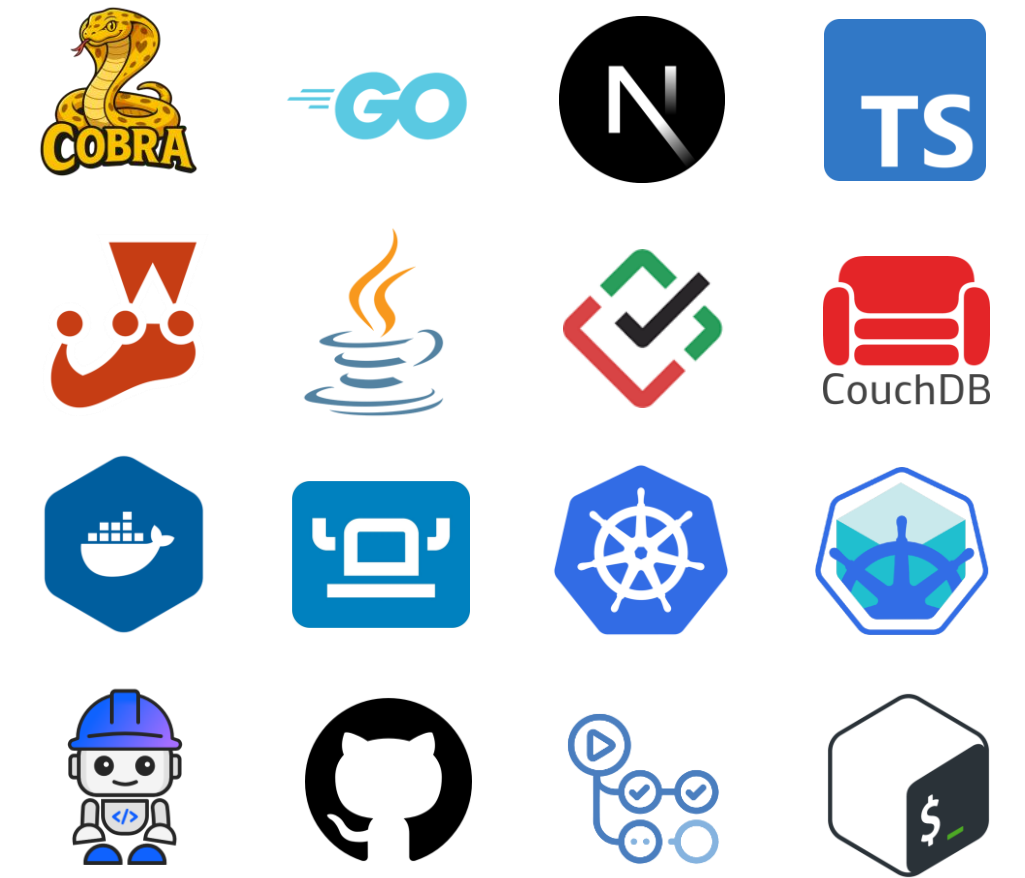
Backend: Java, J-Unit (testing), CouchDB

Containerisation & Local Development:

Docker, Rancher Desktop, Kubernetes, Minikube, VSCode, IBM BOB

DevOps & Automation:

Git, GitHub Actions, Bash



References

[1] IBM. (2026) About IBM. Available at: <https://www.ibm.com/in-en/about> [Accessed: 8 June 2026].

[2] IBM. (2026) IBM UK Homepage. Available at: <https://www.ibm.com/uk-en> [Accessed: 8 June 2026].

[3] Galasa. (2026) Galasa Open Source Mainframe Testing. Available at: <https://galasa.dev/> [Accessed: 8 June 2026].

[4] Github. (2026) Galasa's Kanban filtered by my tickets <https://github.com/orgs/galasa-dev/projects/3/views/1?filterQuery=James>

[5] Github. (2026) My GitHub contribution heat map found on my profile on Github. Available at: <https://github.com/James-Cocker> [Accessed: 8 June 2026]

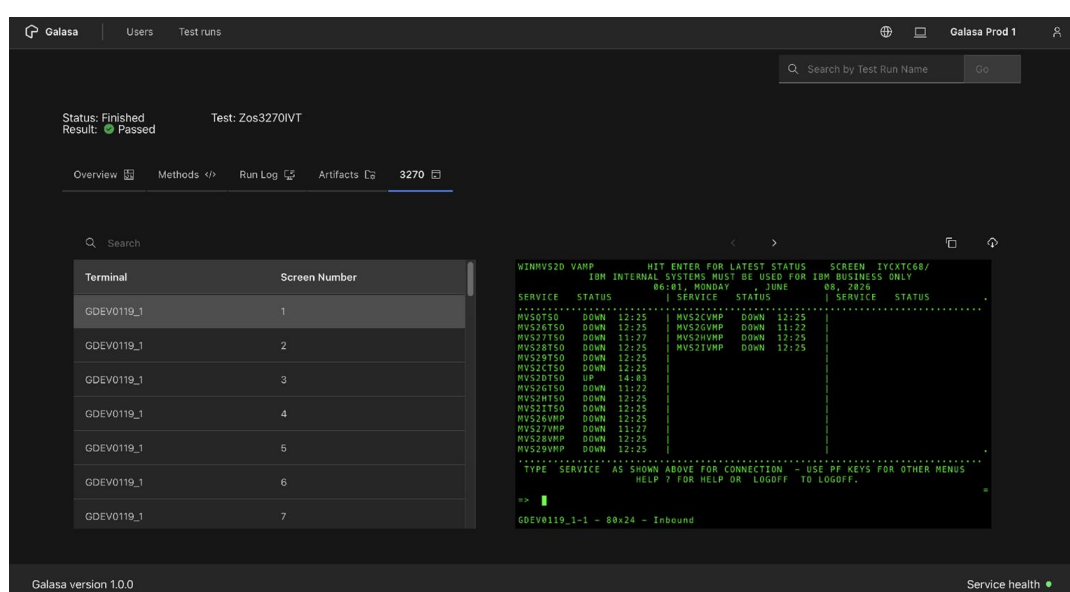


Fig. 3 The 3270-mainframe terminal image renderer feature I created. Text not meant to be readable.

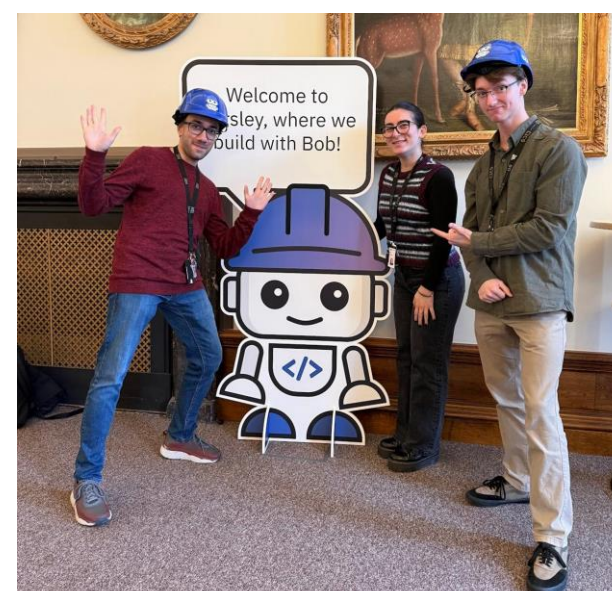


Fig. 4 The Galasa team at an internal IBM BOB hackathon



Fig. 5 The 2026 IBM placement student cohort

754 contributions in the last year

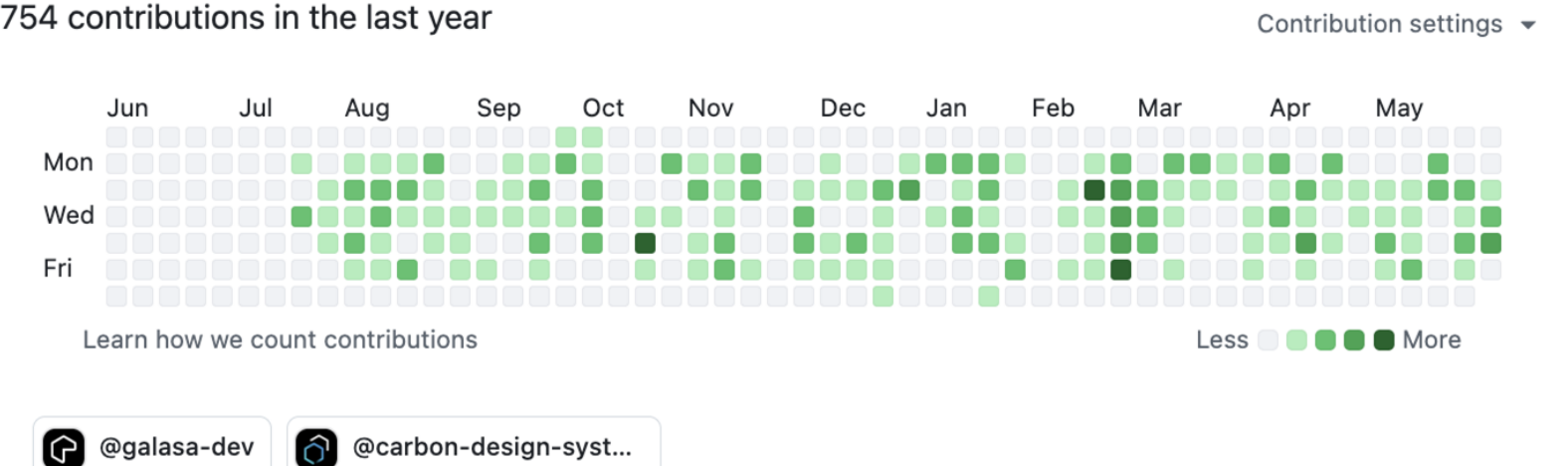


Fig. 6 My GitHub contribution heat map [5]