# BSc Project Log Book

Student Name: Kaylum Smith

Project Name: Tracking and Profiling Online

Internal Supervisor: Prof. Anne Kayem

External Supervisor (if any):

## Log of Activities

### Phase 1: Initial Development (Pre-Pivot)

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Key activities | Outcomes | Comments/Action plans |
| 2024-12-01 | Project Kickoff. Brainstormed an all-in-one extension (scripts, VPN, passwords, vulnerability scanning). | Initial idea shaped around multi-feature security extension. | Research deeper into each component’s feasibility. |
| 2024-12-02 | Created server.py (Flask boilerplate); Drafted Node.js server with MongoDB Render setup. | Initial server architecture explored. Faced early CORS and slow response issues. | Compare Flask vs Node for stability and speed. |
| 2024-12-03 | Created background.js, manifest.json; extension sends active URL to server. | Early URL scanning functional. Manifest V3 activeTab permission tested. | Improve CORS handling; Investigate local database options. |
| 2024-12-04 | Local MongoDB setup tested; VPN integration attempted. | Found local Mongo cumbersome; VPN hard to control via extension. | Reassess reliance on local MongoDB; VPN feasibility review. |
| 2024-12-05 | Struggled to unify Node server, MongoDB, and VPN. Severe performance slowdowns. | Major performance bottleneck observed. | Consider simpler, more localized solutions. |

### Phase 2: Problem Identification and Pivot Decision

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Key activities | Outcomes | Comments/Action plans |
| 2024-12-06 | Decision to pivot. Introduced SQLite (database\_setup.py) for a fully local solution. | Local database prototype ready; improved privacy and speed. | Phase out external dependencies. |
| 2024-12-07 | Archived VPN/Render/Node code. Extension targets localhost Flask server. | Reduced complexity, achieved better performance. | Prepare for new lightweight feature focus. |
| 2024-12-08 | Built popup.js to display scan results from local server. | End-to-end functionality (URL → server → DB → popup) established. | Add meaningful scan scoring. |
| 2024-12-09 | Implemented basic cookie security scanning (cookie\_scan.py). | Detects missing Secure/HttpOnly flags; affects 'trust score'. | Extend passive scanning to HTTPS checks. |
| 2024-12-10 | Performance checks on scanning. | Cookie scanning performance acceptable (~1.5s). | Avoid heavy scanning like SQLi or XSS detection. |

### Phase 3: User Education Focus (Post-Pivot)

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Key activities | Outcomes | Comments/Action plans |
| 2024-12-11 | Removed heavy scans. Focused on passive detection. | Simpler, faster, more privacy-focused extension. | Build educational materials. |
| 2024-12-12 | Created score\_calculator.py; updated UI to color-code scores. | Trust Score pipeline complete; user feedback visually clear. | Fine-tune scoring criteria. |
| 2024-12-13 | Developed educational HTML pages (Cookies, HTTPS, Tracking). | Direct user learning integrated into extension. | Test user click flows into education pages. |
| 2024-12-14 | Full performance testing across 5 popular websites. | Stable 1–2s scan time achieved; major improvement over early designs. | Proceed to user study design. |
| 2024-12-15 | Drafted user study plan and adversarial scoring idea. | User behavior study designed to test awareness, not just trust in scores. | Finalize Google Forms surveys. |
| 2024-12-16 | Created Google Forms; added click logging to DB. | Pre/post knowledge measurement ready; minimal tracking for privacy. | Test dry runs. |

### Phase 4: Testing and User Study

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Key activities | Outcomes | Comments/Action plans |
| 2024-12-17 | Invited 10 participants; prepared extension + server for study. | Study logistics set up. | Ready for Day 1 testing. |
| 2024-12-18 | Dry run with colleague. | Identified final tweaks needed in educational materials. | Clarify participant instructions. |
| 2024-12-19 | Final deployment checks (offline HTMLs, no external services). | Fully local, offline-ready extension confirmed. | Proceed to live study. |
| 2024-12-20 | User Study Day 1. | First participant feedback positive; educational links visited. | Monitor for any confusion. |
| 2024-12-21 | User Study Day 2 (3 participants). | Adversarial scoring effectiveness observed. | Interview participants. |
| 2024-12-22 | Final participant sessions (6 users). | Complete data collected. | Begin data analysis. |
| 2024-12-23 | Analyzed preliminary survey results. | Self-rated knowledge increase observed in multiple areas. | Consolidate full analysis. |

### Phase 5: Finalisation and Reporting

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Key activities | Outcomes | Comments/Action plans |
| 2024-12-24 | Final debrief; validated pivot to simple, educational focus. | Project meets privacy, usability, and educational goals. | Write final report. |
| 2024-12-25 | Drafted report sections (Intro, Architecture, Testing, Reflection). | Major sections completed. | Add citations. |
| 2024-12-26 | Documented file creation and debugging attempts. | Transparent reporting. | Final proofreading. |
| 2024-12-27 | Wrote 'Future Work' section (gamification, optional advanced scanning). | Outlined future expansion ideas. | Close logging. |
| 2024-12-28 | Reflected on pivot lessons. | User-centric simplicity proved more impactful. | Summarize in report. |
| 2024-12-29 | Final proofreading and citation check. | Final report ready. | Submit draft for review. |
| 2024-12-30 | Team review and clean-up. | Confirmed Git tag v1.0 and documentation completeness. | Prepare official submission. |
| 2024-12-31 | Added footnotes about debugging efforts (CORS, JSON issues). | Improved clarity for assessors. | Final polish. |
| 2025-01-01 | Inserted disclaimers; verified testing coverage. | Clear communication about extension limitations. | Ready for final submission. |
| 2025-01-02 | Supervisor review and approval. | Supervisor satisfied with local-only approach. | Prepare final packaging. |
| 2025-01-03 | Tweaked reflection to highlight user-centric pivot importance. | Final version locked. | Archive all records. |
| 2025-01-04 | Archived logs and screenshots. | Proper record-keeping completed. | Mark project 'complete'. |
| 2025-01-05 | Final submission and retrospective. | Official project closure. | Lessons learned captured. |