Maintenance Plan

Clarkson University – ID Scanner System
Spring 2025 | CS350 Team Project

By: Delara, Hunter, Samantha, Soliat, Nick

Overview

This maintenance plan outlines the necessary procedures to ensure the long-term stability, reliability, and security of the MakerSpace ID Scanner System. It includes regular system checks, hardware upkeep, software updates, data backups, and procedures for troubleshooting and recovery.

Regular Maintenance Tasks

-Weekly Tasks:

Task	Responsible Party	Notes
Check system uptime	Admin / Mentor	Ensure Flask app and RFID service are running
Review system logs	Admin	Look for scan errors or unusual activity
Clean RFID scanner and touchscreen	MakerSpace Staff	Prevent physical damage or scanning issues
Verify that student sign-in/out works	Admin / Volunteer	Perform a manual test with test ID card

---

-Monthly Tasks:

Task	Responsible Party	Notes
Update Raspberry Pi packages	Admin (via SSH)	sudo apt update && sudo apt upgrade
Backup the SQLite database	Admin	Copy database file to external drive or cloud
Export logs to CSV	Admin	Archive for usage reporting and audits
Test waiver form functionality	Admin	Make sure registration for new users works correctly
Review admin dashboard access	Admin	Ensure only authorized personnel have access

-Semesterly Tasks:

Task	Responsible Party	Notes
Review system performance and feedback	Admin / Team	Identify bugs, bottlenecks, or usability issues
Replace RFID reader or hardware if faulty	Admin	Check for wear and tear or slow response
Upgrade Flask app or libraries	Developer/Admin	Ensure security patches and new features
Review and rotate admin credentials	Admin	Especially important after team/staff turnover

-<u>Troubleshooting & Recovery</u>

Common Issues & Solutions:

Issue	Cause	Solution
No response on scan	RFID reader disconnected	Check USB connection, restart the service
Flask app not loading	App crashed or not running	SSH into Pi, restart with python3 app.py
Data not saving to database	SQLite write error	Check file permissions, disk space
Time-based auto sign-out not working	Cron job or logic error	Verify scheduled task or code execution

---

-Security & Backup Policy

- **Database Backups:**
  Stored in /home/pi/id_scanner/backups/. Use cron to automate daily or weekly backups.

- **Admin Credentials:**
  Store hashed passwords; change passwords at least once per semester (if needed).

- **SSH Access:**
  Only trusted admins should have SSH keys or credentials. Disable password login.

- **Audit Logs:**
  Keep timestamped logs of check-ins, check-outs, and admin activity.

-System Update Checklist

1. **Notify stakeholders** before downtime.

2. **Back up** the SQLite database and codebase.

Apply updates:

```
sudo apt update && sudo apt upgrade
git pull origin main
```

3. Restart the Flask app and unplug/plug the USB RFID scanner.

4. Perform system test (scan in/out, new user registration).

5. Log completion in docs/maintenance/updates.log.

-Additional Support

-Contact helpdesk (OIT)

-Talk to the Ignite department and see if they have any connections with programmers or computer engineers.

-If the developers are still in school, contact…

~**Delara Panahi**

~**Samantha Sikora**

~**Hunter Smith**

~**Nicholas Sheldon**

~**Soliat Adeboye** (willing to work on it as a side project)