Fingerprint Biometrics
Secure Inmate Tracking

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Abstract
Tyler Technologies’ Odyssey Jail Manager is a software solution utilized by jails across the country. One of its features is an inmate movement tracking system, which currently uses barcode wristbands worn by prisoners to verify their identities. Our team’s project was to upgrade this system to support fingerprint scanning.

This upgrade offers several improvements over wristband usage. Unlike wristbands, fingerprints cannot be swapped between prisoners or easily removed. Also, corrections officers no longer need to spend time operating barcode scanners. Our team’s work improves both security and workflow efficiency for jails using the software.

Results
The following development tasks were completed for our project:

- Implement single scan functionality
- Add continuous scan functionality
- Auto-start continuous scanning on window open
- Auto-stop continuous scanning on window close
- Hide the popup window used by the M2SYS plugin
- Add visual indication that scanning is active/inactive
- Add audio confirmation of a successful scan
- Scan error handling

Impact
Our solution provides enhanced security and efficiency for Tyler’s Inmate Movement tracking system. This system is used in the real world by jails across the country. Our work will have a positive impact on these jails, improving both the workflow of the corrections officers, and the experience of the inmates.

Summary
Throughout the semester, our team worked on adding fingerprint scanning to Tyler Technologies’ Inmate Movement tracking system. Our additions successfully integrate with Tyler’s software, and do not break any existing functionality. Our work also paves the way for additional improvements to be easily implemented in the future.

Our team experienced many challenges of working with a large proprietary codebase. Overcoming these challenges provided us with a rich learning experience about real world software development.

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