

UniLost: Integrated Lost and Found Management System

A Map-Based Solution for
Sejong University

2025 Introduction to Open Source Software

Group 2.

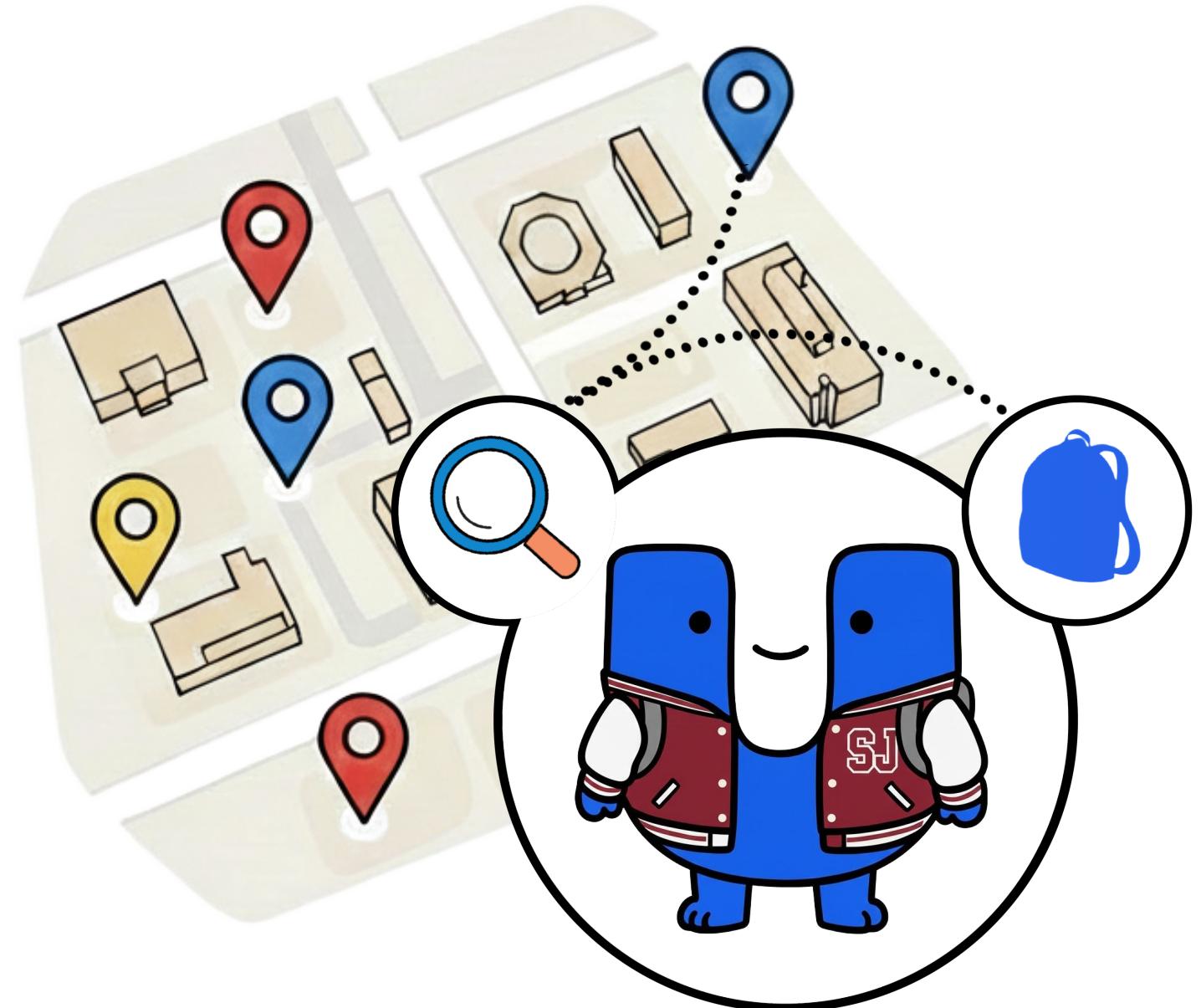
23011812 SeoEun Bae

23011813 JiHyang Ha

23011844 Jin Choi

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Sejong University



The Problem We're Solving

- Traditional lost and found systems inefficient
- No centralized platform for campus-lost items
- Difficult to search and match lost items with found items
- Lack of real-time communication between users
- Manual administrative processes

BEFORE



AFTER



Our Mission

Open-source
continuous improvement

Efficient,
user-friendly system

UniLost

Stronger campus
engagement

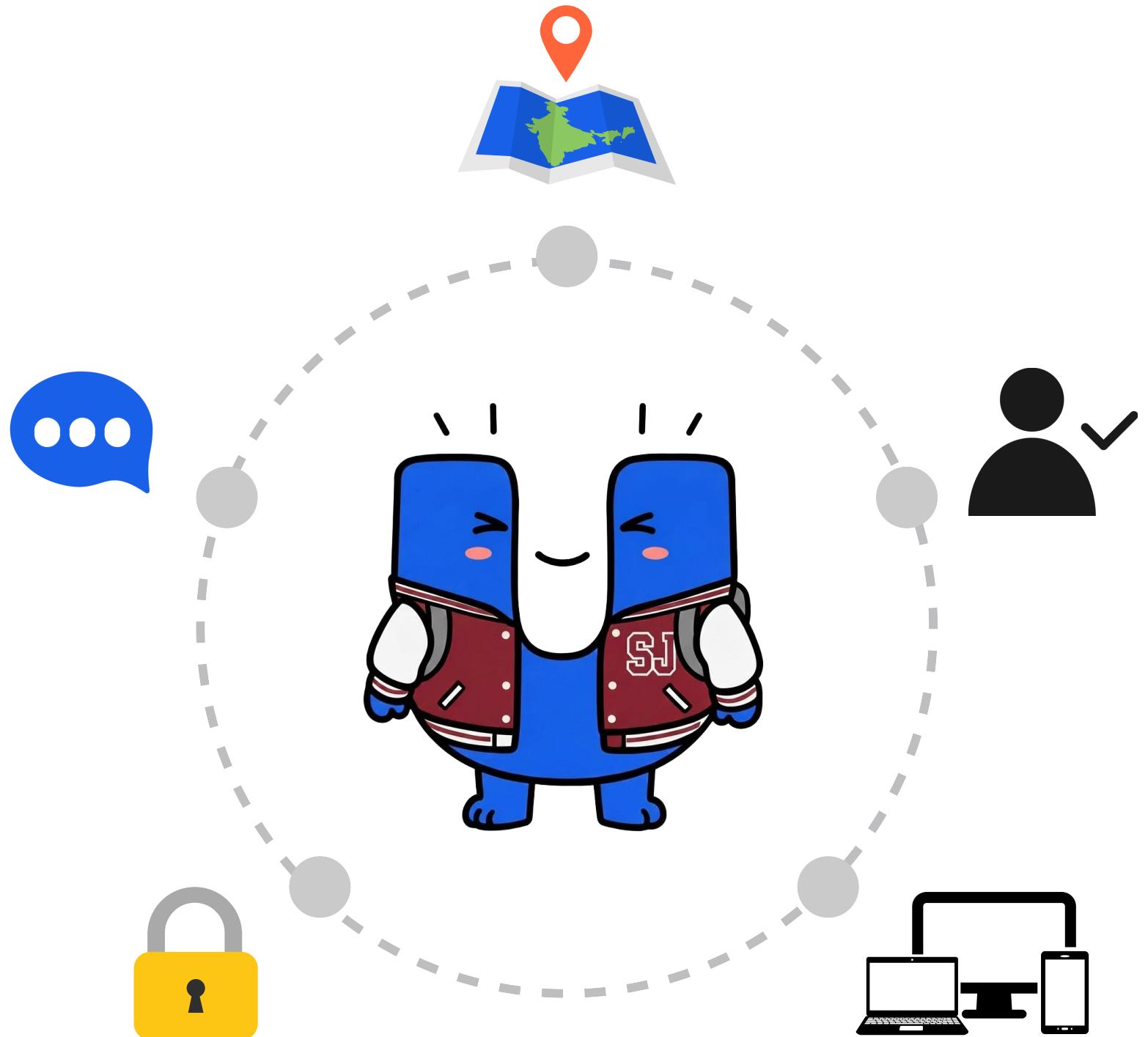
Tech-based
item matching

Transparent
& accessible platform

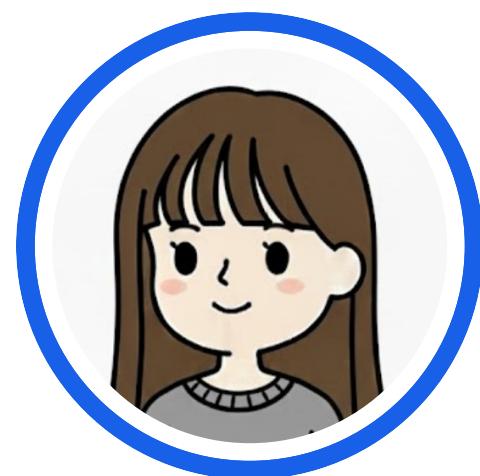
UniLost: Our Solution

Key Feature

- Map-based registration and search
- Real-time chat system
- User authentication
- Administrator approval system
- Responsive design (mobile & desktop)



The UniLost Team



Jihyang Ha

Project Management &
Final Decisions



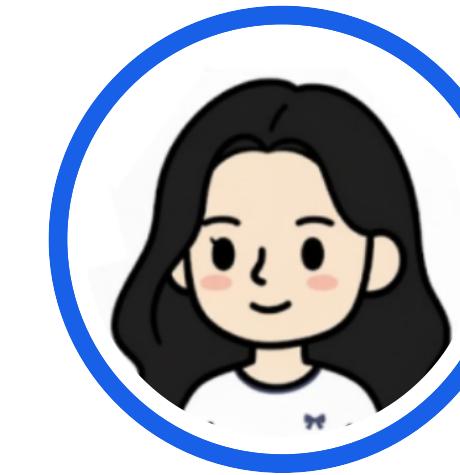
Jin Choi

Full-stack
Development



Myeongju Jeong

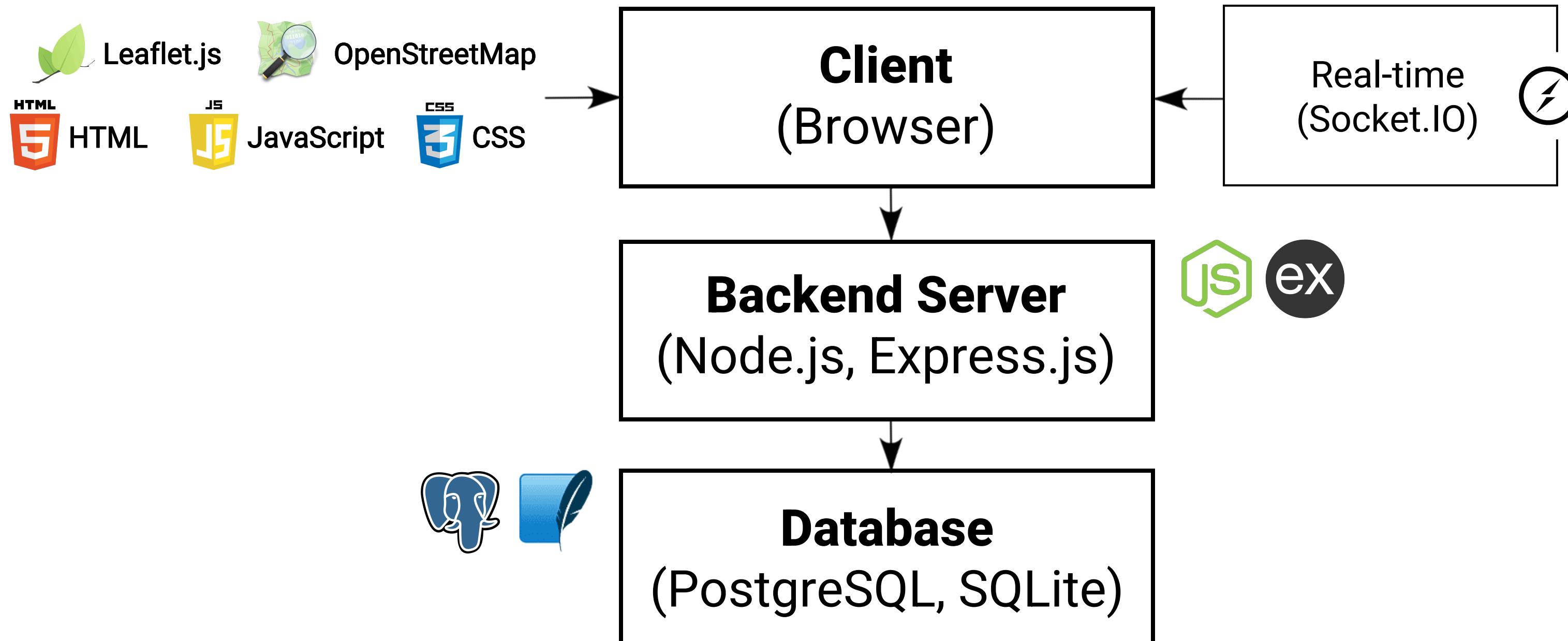
Documentation &
Version Management



Seoeun Bae

UI/UX Design &
Branding

System Architecture



Deployment:

Map-based registration and search

UniLost Campus Lost & Found Management Hello, Admin 1

[Register Item](#) [Search/Map](#) [Admin](#) [Chat](#) [Logout](#)

Register Item

Register lost or found items

Upload Photo

[Choose File](#) No file chosen

Item Name/Description

e.g., Black wallet, Blue umbrella, AirPods case

Detailed description (color, brand, features, found/lost situation)

※ Items are automatically classified based on description. Manual changes available if needed.

Auto Classification Result

Waiting for auto classification... [Auto Classify](#)

Location (Address)

e.g., Sejong University, Building Name, Address [Find Address](#)

Or click on the map to set location

37.551676 127.073396

Accuracy Radius (meters) 50

Verify Location on Map

Registration Location

Leaflet | © OpenStreetMap contributors

Click [Find Address](#) after entering address, or click on the map to set coordinates.

Accuracy Radius (meters) 50

Real-time chat system

 **UniLost** Campus Lost & Found Management Not logged in

Register Item Search/Map Admin Chat Login

Student/Admin Chat

Communicate with all users in real-time

Nickname (anonymous if empty)

Message

Send (Enter)

Connected

Chat Log

2025. 11. 17. 오후 2:30:37

student6
Lost my umbrella yesterday. Hope someone found it.

2025. 11. 17. 오후 2:30:37

admin1
We're working on adding notification features. Stay tuned!

2025. 11. 17. 오후 2:30:37

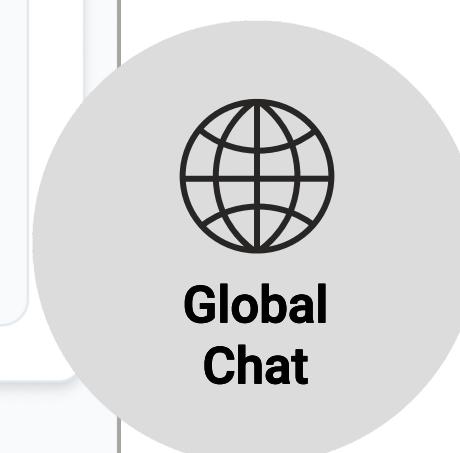
student5
Is there a way to get notifications when items are found?

2025. 11. 17. 오후 2:30:37

student4
The system is really helpful! Found my student ID quickly.

2025. 11. 17. 오후 2:30:37

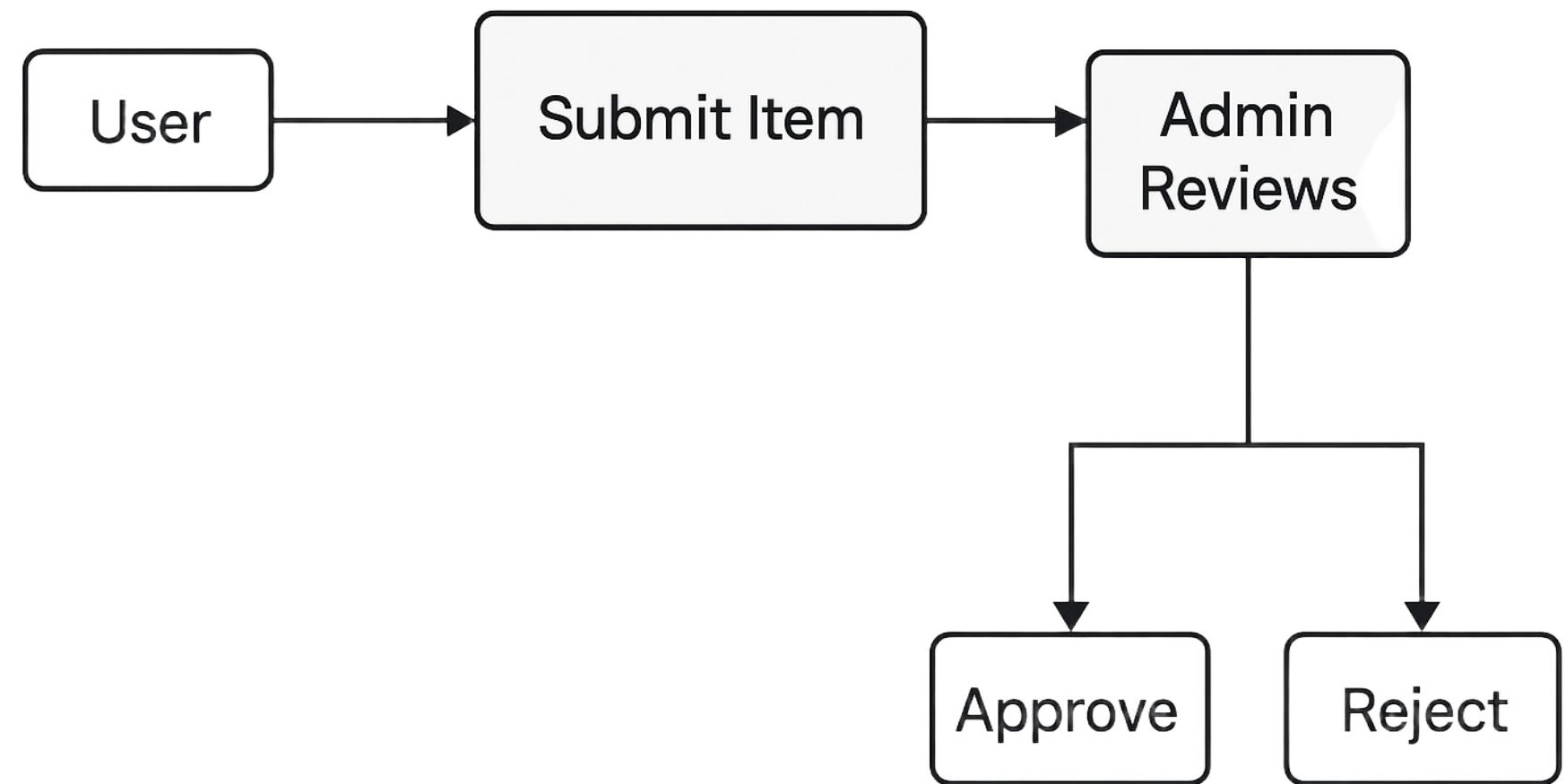
admin2
Remember to update your contact information if you've lost something.



Administrator Management System

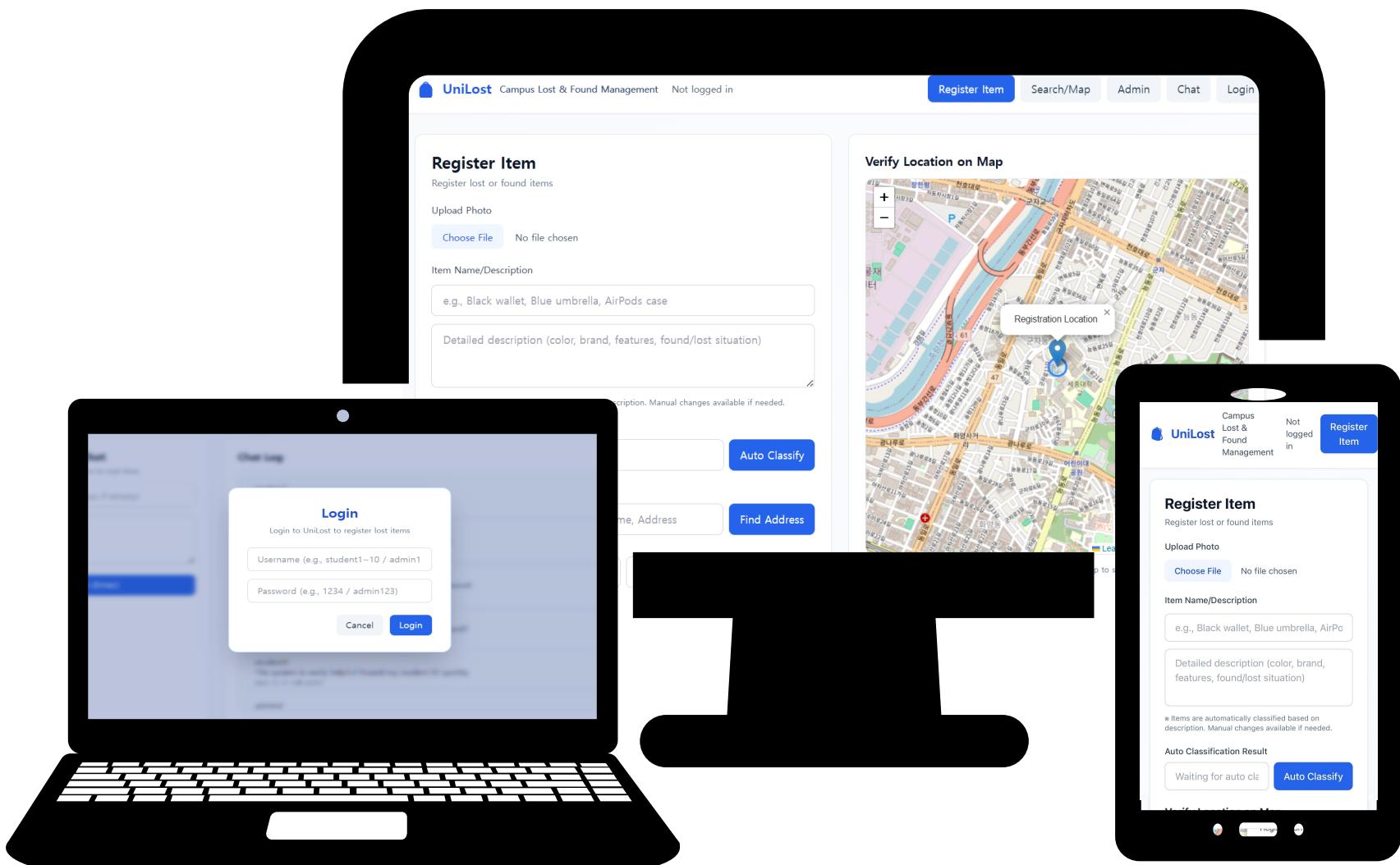
Admin Features

- Item approval/rejection workflow
- Storage location management
- User management
- Quality control for registered items



User Experience - PC, Mobile

Responsive design



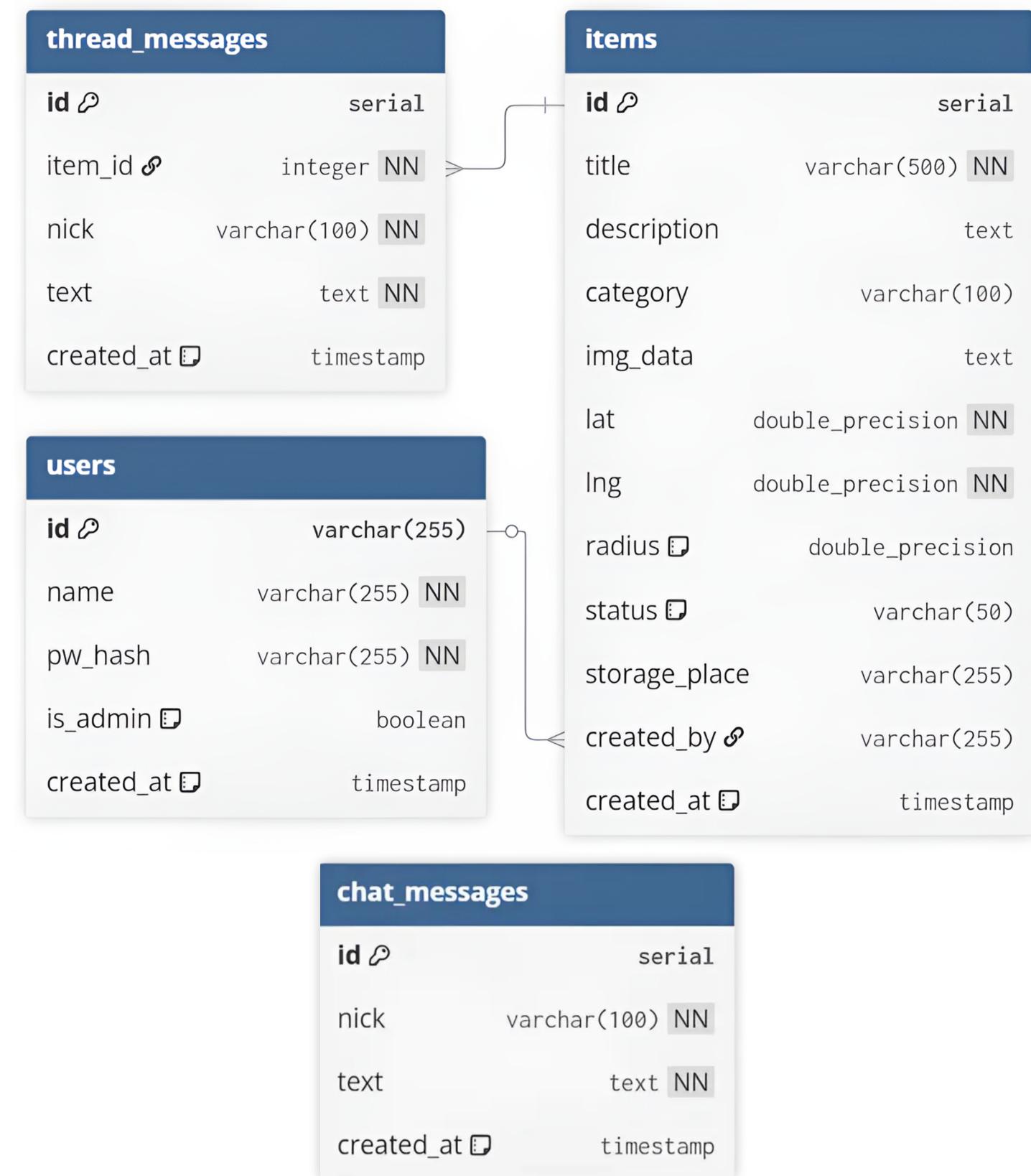
Modern UI with
Tailwind CSS

Clean, intuitive
interface

Accessibility
considerations

Technical Highlights

- **Backend:** Node.js, Express.js
- **Database:** PostgreSQL(production) / SQLite(development)
- **Real-time:** Socket.IO
- **Frontend:** HTML, JavaScript, Tailwind CSS
- **Maps:** Leaflet.js, OpenStreetMap
- **Documentation:** Sphinx(Read the Docs), Jekyll(GitHub Pages)



Deployment & Documentation

Deployment

- Live Demo: <https://unilost.onrender.com>
- Project Website: <https://jin040907.github.io/UniLost/>
- Documentation: <https://unilost.readthedocs.io/>



Documentation & Community

- Comprehensive Sphinx documentation
- Jekyll-powered project website

Deployment & Documentation

Deployment

- Live Demo: <https://mlt.conference.com>
- Project Website: <https://innoconference.com/MLT/>
- Documentation: <https://mlt.conference.com/docs/>

Documentation & Con

- Comprehensive Specification documentation
- Jekyll-powered project website

Current status (v0.9.0)

- Fully functional web application
- Deployed and accessible online (Render, GitHub Pages)
- Comprehensive documentation (Sphinx, Jekyll)
- Active community (GitHub Discussions)
- Open-source (Apache License 2.0)
- Scalable architecture (PostgreSQL/SQLite)

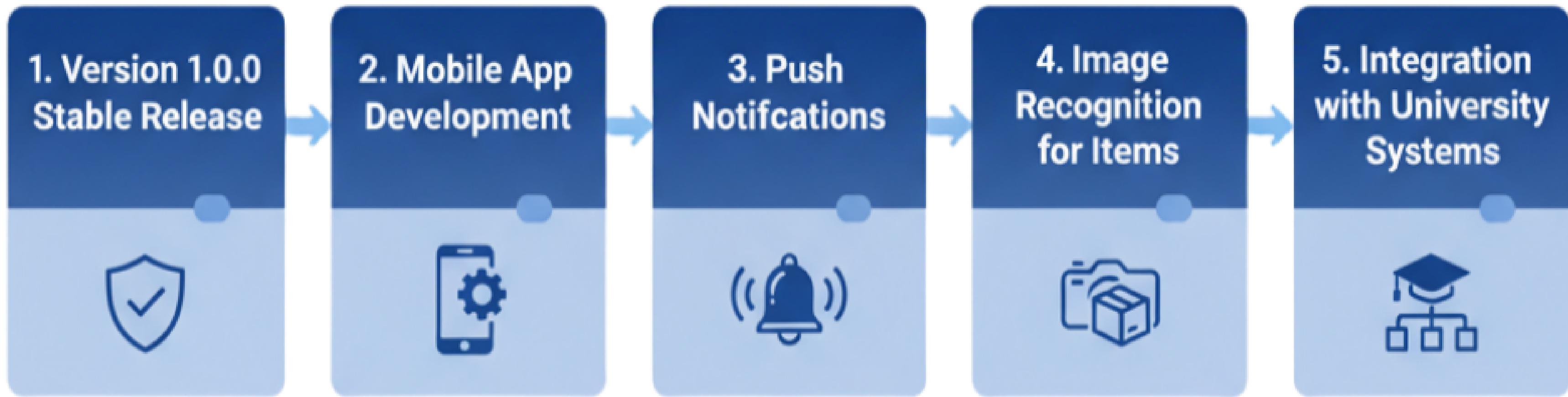


Future Roadmap

Limitations

- **Render free plan:** Sleeps after 15 minutes of inactivity (slow first request)
- **Internet Explorer 11 and below:** Not supported
- **Offline mode:** Not supported (requires server connection)
- **Image upload:** Base64 encoding only (no direct file upload)
- **Email notifications:** Not implemented
- **Advanced search:** Limited to category filtering
- **Mobile app:** Web-only (no native mobile applications)

Future Roadmap



Key Takeaways

Technical Skills

- Full-stack development
(Node.js, Express.js, PostgreSQL/SQLite)
- Real-time communication (Socket.IO)
- Map integration (Leaflet.js, OpenStreetMap)
- RESTful API design

Project Management

- Agile development and team collaboration
- User-centered design approach
- Problem-solving and iterative improvement

Open Source Practices

- Collaborative development and code review
- Comprehensive documentation
(Sphinx, Jekyll)
- Community engagement and contribution guidelines
- CI/CD pipeline for deployment

Lessons Learned

- System development lifecycle
- Importance of clear documentation
- Benefits of open-source collaboration

THANK YOU

- Google Groups: unilost@googlegroups.com (<https://groups.google.com/g/unilost>)
- GitHub Repository: <https://github.com/jin040907/UniLost>
- GitHub Discussions: <https://github.com/jin040907/UniLost/discussions>
- Live Demo: <https://unilost.onrender.com>
- Project Website: <https://jin040907.github.io/UniLost/>
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