

Chapter 4: Conclusion and Learning Outcomes

4.1. Conclusion

During my tenure as a Backend Python Developer intern at Khalti Pvt Ltd, I was tasked with developing and securing the user email change process, a critical feature within the company's ecosystem. This project provided me with a comprehensive experience, encompassing the entire software development lifecycle—from requirement analysis and architectural design to implementation and rigorous testing.

The primary objective was to create a secure, scalable, and user-friendly process that would allow users to update their email addresses while ensuring the integrity and security of their data. To achieve this, I implemented robust authentication mechanisms, including password and biometric validation, and developed a secure token generation system using HMAC encryption. These measures were essential in safeguarding user information against unauthorized access and ensuring that only legitimate requests were processed.

Moreover, I collaborated closely with senior developers and cross-functional teams, which enhanced my ability to write clean, maintainable code and emphasized the importance of thorough documentation. This collaborative environment was instrumental in refining the design and implementation of the feature, ensuring that it met the high security and usability standards required in a fintech application.

The testing phase was particularly intensive, involving unit tests, integration tests, and user acceptance testing (UAT). These tests were crucial in verifying the functionality, security, and user experience of the email change process, ensuring that the feature was both reliable and user-friendly.

This internship provided me with invaluable hands-on experience in backend development within a real-world, high-stakes environment. It also significantly deepened my understanding of secure software development practices, particularly in the context of financial technology. The mentorship and support I received throughout this project were instrumental in my professional growth, equipping me with the skills and confidence to tackle complex challenges in future endeavors.

Overall, this experience has solidified my interest in backend development and has been a critical stepping stone in my career as a software developer.

4.2. Learning Outcome

Here are the key areas where I gained substantial knowledge and practical experience:

- i) **Technical Skills Development:** Enhanced proficiency in Python programming language, including advanced concepts and libraries, acquired practical experience in web development frameworks such as Django and Django Rest Framework. Mastered techniques for web scraping, API development, database management, and task automation.
- ii) **Collaboration and Teamwork:** Developed strong communication and collaboration skills through active participation in team meetings, discussions, and code reviews. Worked effectively in a team environment, contributing ideas, sharing progress, and providing feedback to colleagues.
- iii) **Problem-Solving and Critical Thinking:** Discovering and developing analytical and problem-solving skills was a significant aspect of internship journey. Learned how to dig deep to find the

root causes of issues and devise effective solutions. Through this process, gained insights into own capabilities and strengths. It was empowering to see myself grow and tackle challenges with greater confidence and competence. This newfound understanding of abilities has been invaluable, shaping my approach to problem-solving and contributing to my personal and professional development.

