

ABSTRACT

This report documents the work and learning outcomes of my internship as a Backend Python Developer at Khalti Pvt Ltd, where I was primarily tasked with developing a secure and scalable user email change process. The project aimed to enhance the user experience by allowing users to update their email addresses while maintaining the highest standards of data security and integrity.

The report details the entire development process, from initial requirement gathering and architectural design to implementation and extensive testing. Key tasks included implementing robust authentication mechanisms, secure token generation using HMAC encryption, and ensuring comprehensive error handling and edge case management. The project also involved developing and integrating multiple API endpoints to facilitate the email change process, ensuring seamless interaction between various system components.

Testing played a critical role in the project, with a combination of unit tests, integration tests, and user acceptance testing (UAT) conducted to validate the system's functionality, security, and usability. Additionally, rigorous security testing was performed to safeguard against potential vulnerabilities, ensuring that the feature met the stringent security requirements typical of fintech applications.

The learning outcomes from this internship were significant. I gained practical experience in backend development, deepened my understanding of secure software practices, and learned the importance of writing clean, maintainable code. Working closely with senior developers and cross-functional teams also enhanced my collaborative skills and provided valuable insights into the development processes in a real-world, high-stakes environment.

Overall, this internship not only provided me with technical knowledge and experience but also solidified my interest in pursuing a career in backend development, particularly in the field of financial technology.

Keywords: *Python, Mentorship, Talent Acquisition, Hands-on Experience, Opportunities*

