TRIBHUVAN UNIVERSITY

FACULTY OF HUMANITIES AND SOCIAL SCIENCES

AN INTERNSHIP REPORT

SUBMITTED TO

Department of Computer Application

Reliance College

In partial fulfillment of the requirements for the Bachelors in Computer Application

SUBMITTED BY

Shreenarayan Shrestha

Tu_Reg_No: 6-2-522-197-2020

April, 2025

Under the Supervision of

Er. Prakash Khanal

Dhapakhel, Lalitpur

MENTOR'S RECOMMENDATION

I hereby recommend that this project prepared under my Mentorship by **SHREENARAYAN SHRESTHA** entitled **INTERNSHIP** in partial fulfillment of the requirements for the degree of Bachelor of Computer Application is recommended for the final evaluation.

…………………………

SIGNATURE

Mr. Ravi Bhattarai

MENTORSHIP

Six Sigma Black Belt &

Certified SCRUM Developer

Axon Systems Pvt. Ltd

Dhapakhel, Lalitpur

Letter of Internship From Axon System Pvt. Ltd

25th February, 2025

Subject: Letter of Internship for Mr. Shreenarayan Shrestha

This is to certify that Mr. Shreenarayan Shrestha, a student of Bachelor of Computer Application (BCA), successfully completed an internship as a Junior Flutter Developer at Axon Systems Pvt. Ltd. The internship program was initially scheduled for a duration of 4 months from December 1, 2024 to March 30, 2025. However, due to academic examinations in the final month, Mr. Shreenarayan Shrestha completed 3 months of the internship from December 1,2024 to February 25, 2025.

During the internship period, Mr. Shrestha showed excellent commitment and contributed meaningfully to several aspects of the project. His primary contributions include:

1. Worked on app localization, helping adapt the mobile application for multiple languages and regions, improving accessibility and user reach.
2. Prepared detailed technical documentation for features, APIs, and workflows, aiding the development process and ensuring project maintainability.
3. Collaborated effectively with the development team, participating in regular discussions, code reviews, and testing cycles to support smooth progress.

Mr. Shrestha demonstrated professionalism, attention to detail, and a strong team spirit throughout his internship.

We wish him all the best in his academic and future professional endeavors.

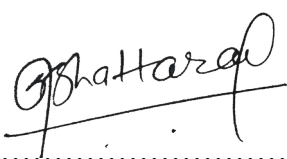Ravi Bhattarai, Six Sigma Black Belt & Certified SCRUM Developer

Founder Chairman/CEO
Axon System PVt. Ltd.

TRIBHUVAN UNIVERSITY

FACULTY OF HUMANITIES AND SOCIAL SCIENCES

Reliance College

SUPERVISOR'S RECOMMENDATION

I hereby recommend that this project prepared under my supervision by **SHREENARAYAN SHRESTHA** entitled **INTERNSHIP** in partial fulfillment of the requirements for the degree of Bachelor of Computer Application is recommended for the final evaluation.

…………………………………..

Er. Prakash Khanal

Project Supervisor

Bachelor of Computer Application (BCA)

Saraswatinagar, Chabahil , Kathmandu

TRIBHUVAN UNIVERSITY
FACULTY OF HUMANITIES AND SOCIAL SCIENCES
Reliance College

LETTER OF APPROVAL

This is to certify that this project prepared by **SHREENARAYAN SHRESTHA** entitled **INTERNSHIP** in partial fulfillment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

…………………………….. **Er. Prakash Khanal** **Supervisor** Bachelor of Computer Application (BCA) Chabahil , Kathmandu	…………………………….. **Mr. Ayush Dhital** **Co-Ordinator** Bachelor of Computer Application (BCA) Chabahil , Kathmandu
Bhattarai ……………………………. **Mentor**	……………………………. **External Examine**

ACKNOWLEDGEMENT

ABSTRACT

During my internship at Axon System Pvt. Ltd., I worked as a Frontend Developer on Edu360, a comprehensive educational platform designed to enhance the efficiency of academic institutions. The project was developed as a mobile application using Flutter with Odoo as the backend, providing features such as student and teacher management, attendance tracking, fee management, and exam scheduling. My role involved designing, localizing and developing an intuitive user interface, ensuring a seamless user experience. I also worked on API integration to facilitate real-time data synchronization between the frontend and backend, allowing efficient handling of user authentication, data storage, and retrieval. One of the major tasks I undertook was integrating Khalti payment gateways, enabling secure and convenient digital transactions for school fees and other payments. This required implementing proper API calls, handling responses, and ensuring a smooth user experience for payment processing. Throughout the internship, I gained hands-on experience in Flutter development, state management, API integration, and UI/UX optimization. Additionally, I collaborated with the backend team to ensure seamless data flow between the mobile application and the Odoo-based system. This internship provided me with a deep understanding of mobile application development, third-party service integration, and working in an agile software development environment, significantly strengthening my technical and problem-solving skills.

Keywords: *Flutter, Odoo, API Integration, Payment Gateway, Khalti, Mobile App Development, UI/UX Optimization, State Management, Agile Development, Attendance Tracking, Fee Management.*

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List of Abbreviations

AI	Artificial Intelligence
API	Application Programming Interface
CRM	Customer Relationship Management
CRUD	Create → Read → Update → Delete
ERP	Enterprise Resource Planning
IDE	Integrated Development Environment
IT	Information Technology
JSON	JavaScript Object Notation
LMS	Learning Management System
SDK	Software Development Kit
SMS	School Management System
SRS	Software Requirements Specification
UI/UX	User Interface / User Experience

Chapter 1: Introduction

1.1 Introduction

This internship report outlines the experience gained as a Frontend Development Intern at Axon System Pvt. Ltd., contributing to the development of Edu360, a comprehensive educational platform aimed at enhancing the operational efficiency of academic institutions. The platform was implemented as a mobile application using Flutter, with Odoo serving as the backend system, supporting features such as student and teacher management, attendance tracking, fee management, and exam scheduling (Flutter, n.d.).

During the internship at Axon System, the primary responsibilities involved designing and localizing the user interface, ensuring a seamless user experience, and integrating APIs for real-time data synchronization. A notable task during this period was the integration of Khalti payment gateways, which enabled secure digital transactions for school fees and related payments. This included implementing API calls, managing response handling, and optimizing the payment flow to ensure a smooth user experience.

The internship spanned three months, offering substantial exposure to Flutter development, state management, UI/UX optimization, and API integration. Collaboration with the backend team ensured smooth data exchange between the mobile application and the Odoo-based system (Odoo, n.d.).

This report presents a detailed account of the internship experience, highlighting the projects contributed to, the technical skills acquired, and the overall learning outcomes. It also reflects on the technical growth and problem-solving capabilities developed through hands-on involvement in mobile application development and third-party service integration within an agile development environment.

1.2 Problem Statement

Managing academic institutions efficiently requires a comprehensive digital solution that simplifies administrative tasks, enhances communication, and streamlines financial transactions. Traditional methods of managing student records, attendance tracking, fee payments, and communication between students, teachers, and parents can be inefficient and time-consuming.

A key challenge in implementing a school management system is ensuring real-time data synchronization, seamless user experience, and secure online transactions. Additionally, integrating multiple payment gateways like Khalti is crucial for enabling hassle-free digital payments for school fees and other transactions.

The goal of this internship project was to develop and enhance Edu360, a Flutter-based mobile application with Odoo as the backend, addressing the following key issues:

- Providing students with real-time access to assignments, attendance, and school events via a mobile application.

- Enabling secure digital payments through Khalti, reducing dependency on manual fee collection.

- Ensuring seamless API integration to synchronize data between the frontend (Flutter app) and the backend (Odoo system).

- Enhancing UI/UX design for an intuitive and user-friendly experience for students, teachers, and parents.

1.3 Objectives

The objective of this internship report is to propose, develop, and enhance the Edu360 school management system. Specifically, the objective is to ensure easy access to school-related information for students, parents, teachers, and administrators. The main objectives are:

- To develop a mobile-based platform where students and parents can view attendance, exam results, assignments, and school notices.

- To enable teachers to manage student attendance, assign tasks, and upload subject-related assignments efficiently.

- To provide super-admins with tools to manage students, teachers, fees, attendance, and class schedules within a centralized system.

1.4 Scope and Limitations

The main objective of this internship was to collaborate closely with the development team to enhance the Edu360 mobile application. The focus was placed on improving the user interface, integrating APIs, and implementing digital payment solutions to ensure a seamless user experience. Throughout the internship, practical experience was gained in Flutter development, accompanied by continuous guidance from mentors to adhere to industry-standard practices.

Scope and Limitations

1. **Mobile App Development:** Contributed to the enhancement of the Edu360 mobile app using Flutter, focusing on UI/UX improvements and the development of new features.

2. **API & Payment Integration:** Implemented real-time API connections between the Flutter frontend and Odoo backend, and integrated Khalti for secure digital payments.

3. **Limited Timeframe:** The short internship period restricted involvement in more advanced or long-term features of the project.

4. **Data & Resource Constraints:** Testing was based on sample data due to limited access to real-time user data, and backend development exposure was minimal.

1.5 Report Organization

The organization of an internship report will depend on the specific requirements and guidelines of the internship program, as well as the nature of the research or analysis being conducted. Here is a general outline of the typical sections that may be included

in an internship report:

Chapter 1: Introduction

The first one chapter describe the Overall introduction of the project. Beside that it also describes the problems, objectives as well as scope and limitation of the project.

Chapter 2: Introduction to Organization

This chapter describe the details of the organization and its hierarchy. It includes working domains of the organization and talks about the intern department or unit.

Chapter 3: Background Study and Literature Review

This chapter describe the background study (Description of fundamental theories, general concepts and terminologies related to the project) and literature review (Review of the similar projects, theories and results similar the projects during internship)

Chapter 4: Internship Activities

The intern's roles and responsibilities were clearly defined, including tasks and projects assigned. A weekly log was kept of technical details, including software and tools used, tasks completed, and challenges encountered. The intern was involved in multiple projects, with an overview, objectives, and specific contributions outlined.

Chapter 5: Conclusion and Learning Outcomes

It is a last chapter of this project. In this chapter we discuss the outcome of the project as well as conclusion of the overall project work. Beside that we include future recommendation for this project also

Chapter 2: Introduction to Organization

2.1 Organizational Details

Axon System is an IT company in Nepal that has been at the forefront of Open Source Software implementation since its establishment in April 2011. Founded by Ravi Bhattarai, the company is dedicated to supporting local businesses through the deployment of advanced technologies such as Learning Management Systems, ERP, and CRM systems.

Adopting an open business model, Axon System ensures transparency and fosters strong partnerships with open-source collaborators in the country, making it a trusted name in the industry.

Table 2.1

Organizational Details

| Name	Axon System Pvt. Ltd.
Website	https://www.axonsystem.com.np
Business Email	mail@axonsystem.com.np
Phone Number	+977 9851053064
Location	Dhapakhel, Lalitpur

2.2 Organization Hierarchy

At Axon System, the organizational hierarchy is deliberately designed to be flat, embodying the company's philosophy of empowering its leaders to steer products and services without the constraints of a conventional hierarchical framework.

Drawing inspiration from the open-source software and business model, Axon System cultivates an environment where autonomy, collaboration, and decentralized decision-making thrive. Leaders serve as facilitators rather than authoritative figures, offering guidance and resources to support their teams while trusting employees to take ownership of their responsibilities.

This structure eliminates unnecessary layers of management, promoting transparency and open communication across the organization. Mirroring open-source principles, Axon System encourages a culture of shared knowledge and innovation, enabling the company to remain agile and responsive while fostering a strong sense of trust and belonging among its team members.

Figure 2.1

Axon Organization Hierarchy
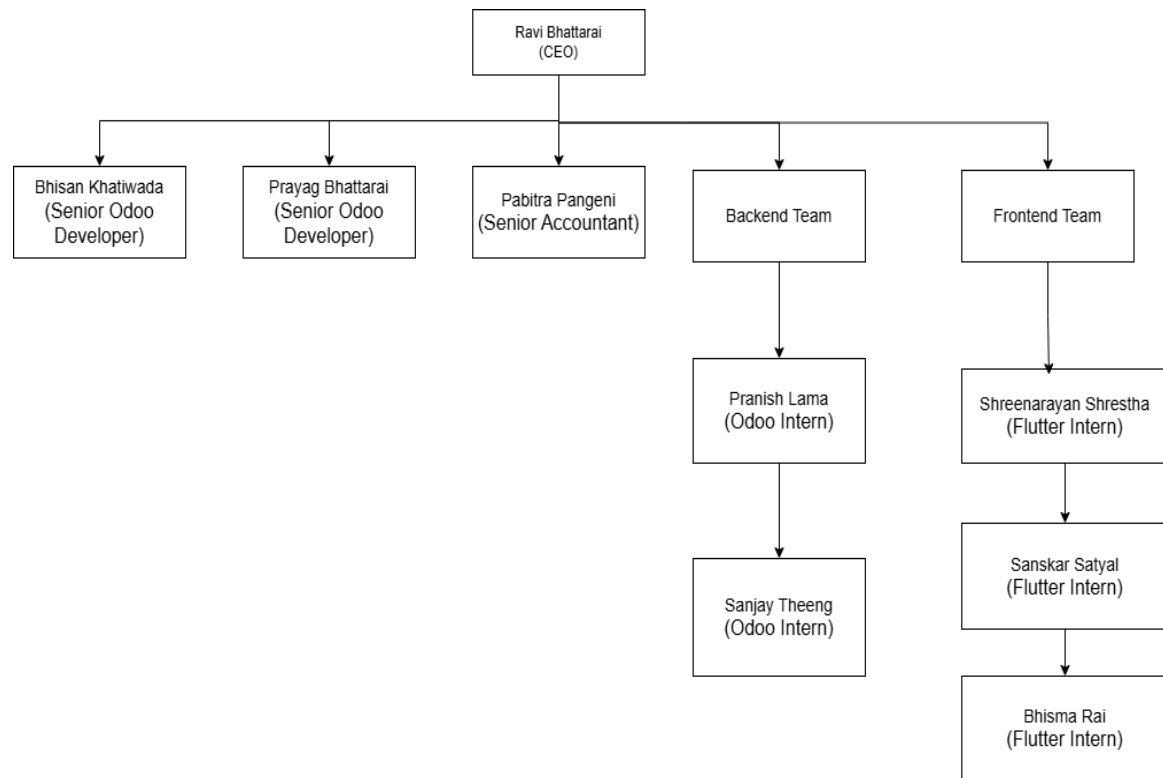
2.3 Working Domains of Organization

Axon System operates across three core domains: ERP, CRM, and LMS, providing specialized services in implementation, customization, and ongoing support.

In the ERP (Enterprise Resource Planning) domain, the company helps businesses integrate essential processes such as finance, inventory, and human resources into a unified system, fostering improved decision-making and operational efficiency.

Within the CRM (Customer Relationship Management) domain, Axon System enables organizations to effectively manage customer interactions across sales, marketing, and service, strengthening relationships and driving business growth.

In the LMS (Learning Management System) domain, the company supports educational institutions and businesses in delivering, managing, and tracking learning content and training programs, promoting knowledge development and skill enhancement.

Axon System ensures that clients can fully leverage tailored solutions to meet their unique needs and achieve strategic objectives.

2.4 Description of the Intern Department

The Intern Department at Axon System plays a pivotal role in the company's commitment to open-source software development and community engagement. Through its internship programs, Axon System provides aspiring developers with hands-on experience in real-world projects, enabling them to contribute to meaningful work while learning from seasoned professionals.

Interns are immersed in a collaborative environment, working alongside experienced developers to gain insights into best practices and the complexities of open-source development. Beyond practical experience, the department prioritizes education, offering structured learning opportunities such as workshops, seminars, and mentorship to support interns' technical and professional growth.

Nurturing new talent, Axon System not only invests in its own future but also strengthens the broader open-source community, promoting the sustainability and expansion of this vital ecosystem.

Chapter 3: Background Study and Literature Review

3.1 Background Study

A background study of a School Management System involves understanding the educational ecosystem and analyzing the key requirements and constraints associated with building such systems. School Management Systems (SMS) have become essential tools for automating administrative and academic processes within schools and colleges. These systems must be built considering various technical, functional, and user-centric factors.

Several theoretical foundations are relevant to the development of such systems, including Information Systems Theory, Human-Computer Interaction, Data Management Theory, and Software Engineering principles. Additionally, marketing, operations management, and stakeholder communication theories also come into play (Fowler, 2003).

The background study of the Edu360 School Management System covered:

- **Competitor Analysis:** We reviewed existing applications like OpenSIS, eSchool, Veda, and SchoolWorkflow from nearby institutions such as Texas College to understand their features and limitations.

- **Industry Trends and Market Needs:** The growing demand for digitization, mobile-first design, and real-time communication in schools was acknowledged.

- **Technical Requirements:** We assessed the best stack for development, beginning with Supabase as a temporary backend and integrating Odoo for ERP capabilities (Supabase, n.d.).

- **Legal and Security Considerations:** Data privacy for students and payment security through integration of digital wallets like Khalti were important components.

- **Budget and Resource Planning:** We utilized open-source tools and AI-assisted development to speed up the process without compromising quality.

Some of the key features considered for Edu360 included:

- **Digital Payment Integration:** Linking Khalti for student fee payment with real-time confirmation and receipts (Khalti, n.d.).

- **Attendance Tracking:** Admin-managed attendance reports for employees, and teacher-managed attendance logs for students.

- **Timetable and Noticeboard:** Up-to-date academic schedules and important school-wide notices.

- **Localization and Mobile Optimization:** Ensuring the app works smoothly across devices and languages.

3.2 Literature Review

To develop a competitive and user-friendly School Management System, a comprehensive literature review was conducted, studying both academic research and real-world systems. These systems aim to integrate school operations digitally, including attendance, communication, fee collection, task management, and academic performance tracking.

Several international and local systems were reviewed:

- **OpenSIS** and **eSchool** provided insights into essential modules like student records, scheduling, and result management, though many lacked mobile optimization (OpenSIS. 2024).

- **Veda** and **SchoolWorkPro** were studied for UI/UX design inspiration and functional comparisons, especially from the context of nearby colleges eSchool Software, n.d.).

- **SchoolMasterPlus** (2010), a system based in India, offered parent-teacher communication, examination reports, and fee tracking, setting a benchmark in school automation.

Research by **Dr. Elizabeth Johnson** in her book *"Transforming Education: The Power of Technology"* (2015), emphasized how digital transformation in schools improves learning outcomes, transparency, and administrative efficiency. Her work validated the goal of

Edu360 — to offer a modern, minimalistic, and mobile-first solution to educational institutions (eSchool Softwarem, n.d.).

Additionally, ERP systems like **Odoo** were examined for backend integration, showcasing the power of modular development and customization across administrative tasks like inventory, employee records, and purchasing.

Chapter 4: Internship Activities

4.1 Roles and Responsibilities

During the internship at Axon System Pvt. Ltd., the role of Frontend Developer was undertaken for the Edu360 mobile application, a comprehensive school management platform aimed at streamlining academic operations. The application was developed using Flutter for the frontend and Odoo for the backend. Responsibilities included designing and developing responsive, user-friendly UI components while collaborating with the backend team to ensure seamless API integration.

Key contributions involved the implementation of essential modules such as student and teacher dashboards, attendance tracking, fee management, and assignment views, with a focus on delivering a smooth and intuitive user experience. Additionally, efforts were made toward the localization of the user interface, making the application accessible to users across various regions.

The internship also included the integration of Khalti payment gateways into the mobile application to facilitate secure and efficient online fee payments. This task encompassed handling API requests and responses and ensuring a reliable user flow during payment transactions. Support was also provided in testing and refining application modules to enhance overall usability and performance.

Key Highlights:

- Developed and maintained UI components for Edu360 using Flutter Flow.

- Collaborated with backend developers for API integration with the Odoo backend.

- Implemented Khalti payment gateways for secure fee transactions.

- Worked on localization to enhance app usability.

- Participated in bug fixing, testing, and UI/UX optimization.

- Contributed to real-time features like attendance, tasks, and notice updates.

My internship at Axon System Pvt. Ltd. provided me with valuable hands-on experience in mobile app development, third-party service integration, and real-time system

implementation. It helped me enhance my technical capabilities in Flutter, API handling, and UI/UX design, while also improving my collaboration and problem-solving skills in a real-world development environment.

4.2 Weekly Log

A weekly log for an internship in Axon System Pvt. Ltd. is a document that records the My Daily activities, tasks, and accomplishments of the intern on a week-by-week basis. It can be used as a record-keeping tool for the intern, as well as a way to communicate their progress to the supervisor or mentor.

A typical weekly log for an internship might include the following information:

- **Date and week number:** This helps to keep track of the timeline of the internship.

- **Tasks and responsibilities:** This might include a list of the specific tasks that the intern worked on during the week, as well as any new responsibilities or projects that were assigned.

- **Accomplishments:** This might include any notable achievements or successes that the intern had during the week, such as completing a project or gaining new skills.

- **Challenges and difficulties:** This might include any obstacles or challenges that the intern encountered during the week, and how they were overcome or addressed.

- **Goals for the next week:** This might include a list of specific tasks or objectives that the intern plans to work on in the following week.

- **Performance Appraisal by Mentor:** A performance appraisal by a mentor is a process in which the mentor provides feedback and evaluation on the intern's performance during the internship.

- **Observations:** Observations are records of what a person has seen, heard, or noticed during a particular event or activity. In the context of an internship,

observations might include notes on the intern's performance, interactions with coworkers or customers, and overall experience during the internship

Table 4.1

Weekly Activity Log Sheet

Week	Task Assigned	Activities Perform
1	• Install and set up Ubuntu 24.04.2 • Set up Flutter development environment. • Study SCRUM Agile framework.	• Installed required dependencies and configured IDE and emulator. • Studied SCRUM methodology and documented learnings. • Practiced basic Flutter and FlutterFlow components.
2	• Develop a basic Resume App using Flutter.	• Created a Resume UI displaying personal info, skills, and experience • Integrated a QR code linking to a GitHub profile • Explored rapid prototyping using AI tools
3	• Draft initial Software Requirement Specification (SRS) • Align with backend development goals	• Drafted the initial SRS document • Participated in backend alignment meetings • Outlined user roles, system diagrams, and feature list
4	• Research international education platforms	• Analyzed features of platforms like OpenSIS and eSchool • Evaluated dashboards, attendance, result, and fee modules • Documented advantages and limitations of each platform

5	• Compare Edu360 with local platforms.	• Compared Edu360 with Veda, eSchool, and Texas College apps • Took screenshots and documented UI/UX elements • Identified potential areas for user experience improvement
6	• Design mockups for Edu360 modules.	• Used FlutterFlow to design mockups • Designed screens for dashboard, attendance, timetable, and noticeboard • Created reusable UI components
7	• Develop frontend for Edu360 student/admin interfaces • Implement localization • Use Supabase backend	• Developed core UI interfaces • Implemented localization and user authentication • Used Supabase for real-time data and temporary backend
8	• Continue frontend development • Update UI and improve flow	• Focused on mobile responsiveness and minimal design • Updated UI components for better interaction • Revised SRS and removed redundant code/screens
9	• Integrate Khalti payment gateway.	• Implemented and tested Khalti using sandbox credentials • Handled payment callbacks (success/failure)
10	• Install and configure Odoo 18 • Explore core modules	• Installed Odoo on a local server • Explored modules like Purchase and Inventory • Performed CRUD operations in the Inventory module

11	• Study Odoo API and connect to Flutter	• Explored Odoo authentication and endpoints • Built a basic service layer in Flutter • Retrieved and parsed data from Odoo using JSON
12	• Finalize API structure with backend team • Integrate APIs into Edu360	• Collaborated with backend developers • Used Postman for testing API responses • Mapped JSON responses to Flutter models • Implemented CRUD features for students and teachers

4.3 Description of the Projects Involved During Internship

During the internship at Axon System Pvt. Ltd., the primary focus was on the development and enhancement of Edu360—a comprehensive School Management System designed to streamline administrative and academic workflows for educational institutions. The project aimed to deliver a seamless experience for both students and administrative users through mobile applications built using Flutter.

Edu360 is a feature-rich platform encompassing modules such as attendance tracking, timetable scheduling, notices, dashboard analytics, online fee payment integration, and localization support. As a member of the frontend development team, significant contributions were made to the design and implementation of UI/UX components, frontend development using Flutter, and integration with both temporary and production backends, including Supabase and Odoo.

The internship also included collaborative activities such as drafting the Software Requirements Specification (SRS), conducting a competitive analysis of existing school management platforms including OpenSIS, eSchool, Veda, and Texas College, and identifying areas for improvement in Edu360. FlutterFlow was utilized for the creation of low-fidelity mockups, which were subsequently translated into functional Flutter

components following modern UI principles emphasizing minimalism and responsiveness.

In the later stages of the project, the Khalti payment gateway was integrated to facilitate secure and efficient online transactions. Additionally, the Odoo 18 platform was explored, with hands-on work in modules such as Purchase and Inventory, alongside an in-depth understanding of its API structure. A service layer was built in Flutter to consume Odoo APIs using JSON-based REST communication, in close coordination with the backend team.

The project concluded with comprehensive testing and quality assurance across multiple devices, detailed documentation of features, and a final demo presentation summarizing the development journey. This internship provided valuable hands-on experience in mobile application development, system integration, and collaborative product development within an agile environment.

4.4 Tasks / Activities Performed in Projects

During the internship at Axon System Pvt. Ltd., active involvement was maintained across a range of technical, analytical, and development tasks related to the Edu360 School Management System. The following summarizes the major responsibilities and contributions made during the internship period:

• **Flutter App Development**
  • Designed and developed a Resume App as a proof-of-concept to demonstrate rapid UI prototyping using AI-assisted tools.

  • Created mobile UI screens tailored to student and admin roles, following Flutter best practices.

  • Focused on building minimalist, responsive, and user-centric interfaces to enhance overall usability and mobile experience.

• **Software Requirements Specification (SRS)**
  • Participated in the drafting and maintenance of the SRS document in collaboration with the backend development team.

- Continuously updated the SRS to reflect changes in feature sets, user roles, and technical dependencies as the project progressed.

• UI/UX Design & Mockups
- Utilized FlutterFlow to create low-fidelity prototypes and visual mockups for key modules including Attendance, Timetable, Noticeboard, and Dashboard.

- Followed a component-based UI architecture to ensure reusability and visual consistency across the application.

• Competitive Research & Analysis
- Conducted a detailed feature and UI/UX analysis of prominent international platforms such as OpenSIS and eSchool.

- Benchmarked Edu360 against local competitors like Veda and Texas College to identify opportunities for optimization in workflow and design.

• Backend Integration
- Implemented Supabase as a temporary backend during the early stages of development for authentication, real-time data syncing, and database operations.

- Integrated the Khalti payment gateway using the khalti_checkout_flutter package, enabling secure and seamless digital fee payments within the app.

• Odoo Exploration & Integration
- Installed and configured Odoo 18 on a local server to explore its capabilities.

- Investigated modules such as Inventory and Purchase, and understood the structure of Odoo's RESTful APIs.

- Collaborated with the backend team to consume Odoo APIs within Flutter using HTTP requests, JSON parsing, and Flutter service layers.

• Localization and Internationalization
- Implemented multi-language support using Flutter's built-in localization framework to improve accessibility for users across different linguistic backgrounds.

• Testing and Quality Assurance
- Conducted manual testing on various devices to evaluate UI behavior and feature performance.

- Addressed bugs, improved user flows, and optimized UI based on mentor feedback and internal QA reviews.

Chapter 5: Conclusion and Learning Outcome

5.1 Conclusion

The internship at Axon System Pvt. Ltd. as a Frontend Developer offered valuable real-world exposure to mobile application development, UI/UX design, technical documentation, and collaborative software engineering practices. Contributing to the Edu360 – School Management System, academic concepts were effectively translated into practical implementations, resulting in a scalable, user-friendly, and responsive mobile application developed using Flutter.

Active participation was maintained throughout various stages of the Software Development Life Cycle (SDLC) including requirement analysis, SRS preparation, UI mockup design, backend integration using Supabase and Odoo, and the final phases of testing and deployment. Comparative research on international academic systems and analysis of competing educational platforms facilitated the identification of key areas for improvement to enhance the overall efficiency and usability of Edu360.

Close collaboration with the backend development team enabled seamless API-based integration, including secure digital payment processing through the Khalti Payment Gateway. Work in areas such as localization, minimalist UI design, and performance optimization deepened the understanding of how to build inclusive and high-performance applications.

In conclusion, this internship significantly strengthened technical competencies in Flutter and mobile application development, while also enhancing team collaboration, problem-solving, and technical writing skills. It served as a critical step toward a professional career in software development by providing hands-on experience and building confidence to face future industry challenges.

5.2 Learning Outcome

During the internship at Axon System Pvt. Ltd., extensive hands-on experience was gained in mobile application development, project planning, and professional

collaboration. Involvement in the development of Edu360 – School Management System contributed to both technical and professional growth, while offering deep insights into real-world software development workflows.

Key learning outcomes include:

- **UI/UX Design**: Strengthened the ability to design user-centric mobile interfaces using FlutterFlow, focusing on clean, modern, and responsive UI aligned with industry standards.

- **Backend Integration**: Gained practical knowledge in working with third-party services such as Supabase and Odoo, including understanding of API communication, data flow, and backend system architecture.

- **Requirement Analysis & SRS Documentation**: Understood the importance of clear and structured requirement gathering, and how effective Software Requirements Specification (SRS) supports development consistency and communication across teams.

- **Version Control & Collaboration**: Developed proficiency in using GitHub for source control and participated in team-based workflows through code reviews, branching strategies, and coordinated development.

- **Localization & Minimalism**: Recognized the impact of localized content and minimalist design principles in improving accessibility and usability for diverse user groups.

- **Third-Party Integration**: Successfully integrated the Khalti payment gateway, gaining knowledge in plugin integration, payment flow handling, and secure transaction management in mobile applications.

- **Project Lifecycle Awareness**: Acquired comprehensive exposure to the entire software development lifecycle, including planning, research, prototyping, development, testing, and final implementation phases.

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APPENDIX
Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 1   **Date: 2024/12/01 - 12/07**

Responsibilities:

- Install and set up Ubuntu 24.04.2.
- Set up Flutter development environment.
- Studied and took notes on the SCRUM Agile framework.

Activities:

- Installed dependencies and configured emulator and IDE.
- Practiced basic Flutter and Flutter Flow components to get comfortable with the framework..
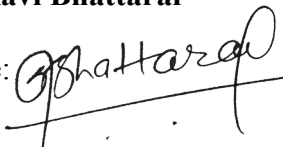
Observations:

- Excited to work in an agile environment and explore real-world project structure.
- Learning curve for Flutter setup is manageable and well-documented.

Next Step:

- Develop a Resume app in any language you know.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 2   **Date: 2024/12/08 - 12/14**

Responsibilities:

- Developed a basic Resume App using Flutter to test rapid prototyping using AI tools.

Activities:

- Designed a basic Resume UI displaying personal details, skills, and experience, including a QR code that redirects to the individual's GitHub profile.

Observations:
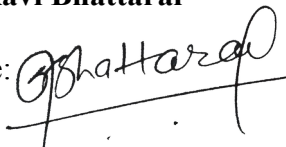
- Flutter with AI tools enables quick app scaffolding and iterative UI design. - Learning curve for Flutter setup is manageable and well-documented.

Next Step:

- Start SRS documentation and requirement gathering for School Management System(Edu360). - Discuss core features with team to define scope.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 3   **Date: 2024/12/15 - 12/21**

Responsibilities:

- Drafted initial Software Requirement Specification (SRS). - Participated in discussions with backend team to align development goals.

Activities:

- Outlined modules and features required for Edu360. - Created user roles, system diagrams, and technical dependencies.
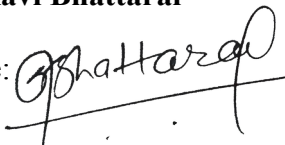
Observations:

- Clear documentation helps align cross-functional teams effectively. - Early collaboration reduces rework in later stages.

Next Step:

- Conduct research on international academy management systems. - Compare with existing education management platforms.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 4   **Date: 2024/12/22 - 12/28**

Responsibilities:

- Researched international education platforms like OpenSIS and eSchool.   - Identified features essential for Edu360.

Activities:

- Analyzed dashboards, attendance, results, fee modules and other features.   - Documented pros and cons of each system.

Observations:
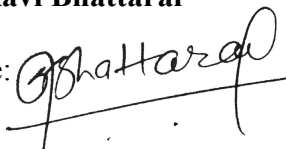
- Most systems lacked modern UX or mobile responsiveness.   - Customization options are limited in some platforms.

Next Step:

- Benchmark existing systems and prepare improvement suggestions.   - Present comparative findings to the team.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 5   **Date: 2024/12/29 - 2025/01/04**

Responsibilities:

- Compared Edu360 with Veda, eSchool, and Texas College apps.

- Analyzed workflows and screen designs.

Activities:

- Took screenshots and performed feature-by-feature comparison.

- Identified areas for better user experience.
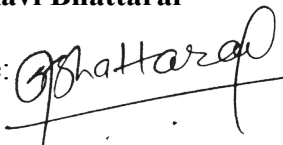
Observations:

- Edu360 should adopt minimal and task-oriented UI.

- Competitive analysis reveals trends in design language.

Next Step:

- Begin UI mockup design with FlutterFlow.

- Focus on simplifying user journey.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 6   **Date: 2025/01/05 - 01/11**

Responsibilities:

- Designed Edu360 mockups for major modules. - Used FlutterFlow to accelerate UI prototyping.

Activities:

- Designed attendance, timetable, dashboard, and noticeboard screens. - Created reusable components for app consistency.
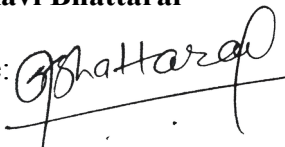
Observations:

- Rapid prototyping saves development and review time. - Mockups serve as reference during actual implementation.

Next Step:

- Start coding UI in Flutter for both student and admin panels. - Incorporate localization from the start.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 7   **Date: 2025/01/12 - 01/18**

Responsibilities:

- Developed Edu360 frontend for student/admin interfaces.

- Implementing localization for better useability.

- Used Supabase for temporary backend services.

Activities:

- Implemented localization, user auth, and dashboard modules.

- Synced real-time data using Supabase services.

Observations:
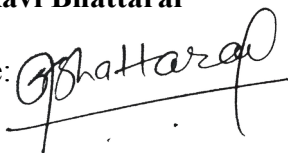
- Supabase offers effective backend for initial development/testing.

- Localization enhances inclusivity across regions.

Next Step:

- Extend admin functionalities and clean UI further.

- Start Coding for Student side in flutter with all its features along with localization.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 8   **Date: 2025/01/19 - 01/25**

Responsibilities:

- Start coding along with localization.
- Prioritized mobile responsiveness and design minimalism.
- Revised and updated SRS documentation post development.

Activities:

- Updated UI components and flow for better user interaction.
- Cleaned redundant widgets and screens.
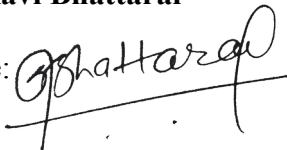
Observations:

- Minimal UI enhances user engagement and performance.
- Iterative reviews keep documentation accurate.

Next Step:

- Begin payment integration with Khalti.
- Conduct plugin feasibility test for production use.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 9   **Date: 2025/01/26 - 02/02**

Responsibilities:

- Integrated Khalti payment gateway into Edu360. - Created a demo showcasing fee payments.

Activities:

- Implemented `khalti` and tested with sandbox credentials. - Handled payment success/failure callbacks.
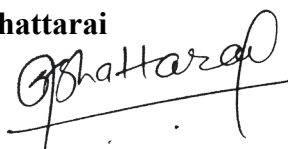
Observations:

- Integration was smooth with proper plugin and documentation. - Flutter package management simplifies SDK handling.

Next Step:

- Explore Odoo backend and begin setup. - Connect Flutter with Odoo API in future iterations.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 10   **Date: 2025/02/03 - 02/09**

Responsibilities:

- Installed and configured Odoo 18 on local server.   - Explored built-in modules like Purchase and Inventory.

Activities:

- Ran Odoo on localhost and explored customization.   - Performed basic CRUD inside Inventory module.

Observations:
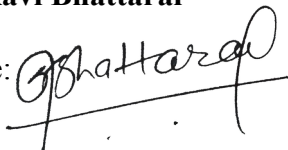
- Odoo offers robust enterprise-level module system.   - Configuration and deployment require technical understanding.

Next Step:

- Explore Flutter-Odoo API communication.   - Research token-based auth with Odoo.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 11   **Date: 2025/02/10 - 02/16**

Responsibilities:

- Studied Odoo API endpoints and authentication.
- Established connection from Flutter app to Odoo.

Activities:

- Built basic service layer in Flutter for Odoo API.
- Fetched data using API with JSON parsing.

Observations:
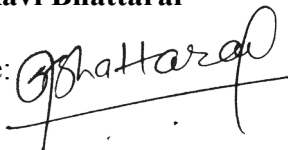
- API layer requires secured auth for production use.
- JSON parsing in Flutter is efficient with model mapping.

Next Step:

- Collaborate with backend team to finalize APIs.
- Set up sample data for demo purpose.
- Use Postman for testing the API.

Name: Ravi Bhattarai

Signature:

Weekly Activity Log Sheet

Name: Shreenarayan Shrestha

Project: School Management System (Edu360)

Company: Axon System Pvt. Ltd.

Week No: 12   **Date: 2025/02/17 - 02/23**

Responsibilities:

- Worked with Odoo backend team to finalize API structure.
- Integrated core features of Edu360 using those APIs.
- Use Postman for testing the API.

Activities:

- Mapped JSON responses to Flutter models.
- Implemented student and teacher CRUD operations.
- Used Postman for API testing to ensure backend routes were responding correctly.
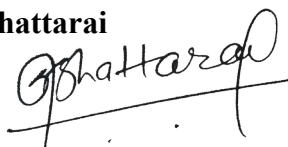
Observations:

- Close collaboration boosts development pace and clarity.
- Model binding reduces API-related bugs.

Next Step:

- Finding and fixing the bugs and errors.
- Presenting the app demo to mentor's.

Name: Ravi Bhattarai

Signature:

Student

- Login Page

- Home Page

- Student Profile
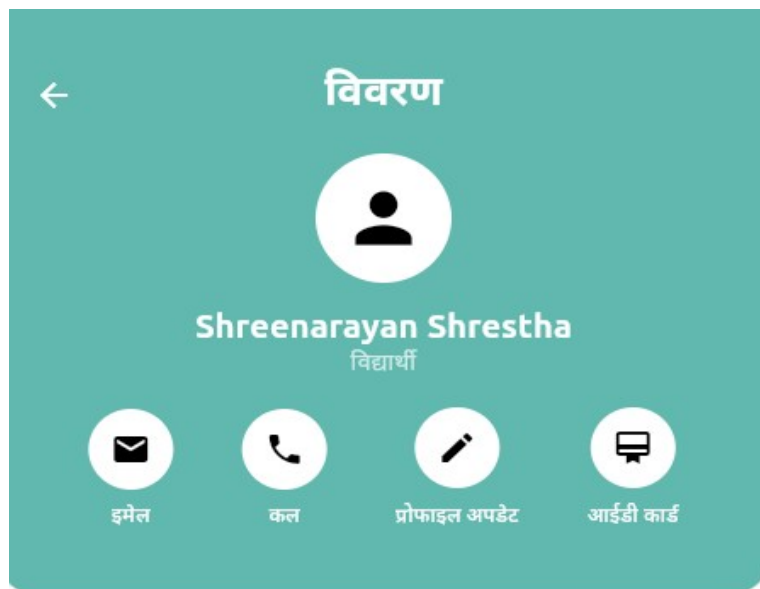
- Id Card
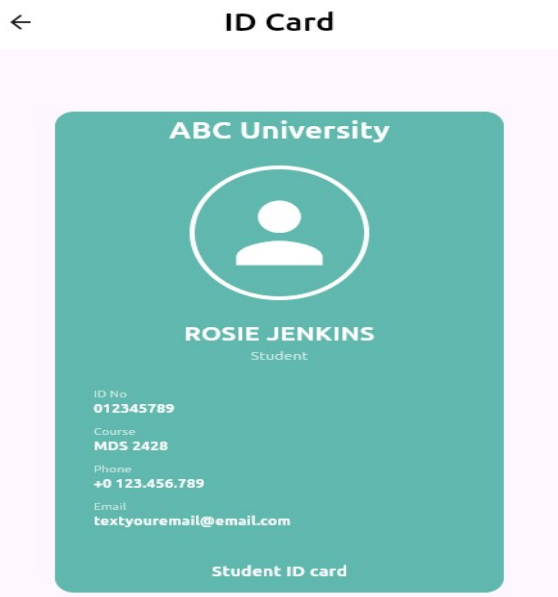
- Notice
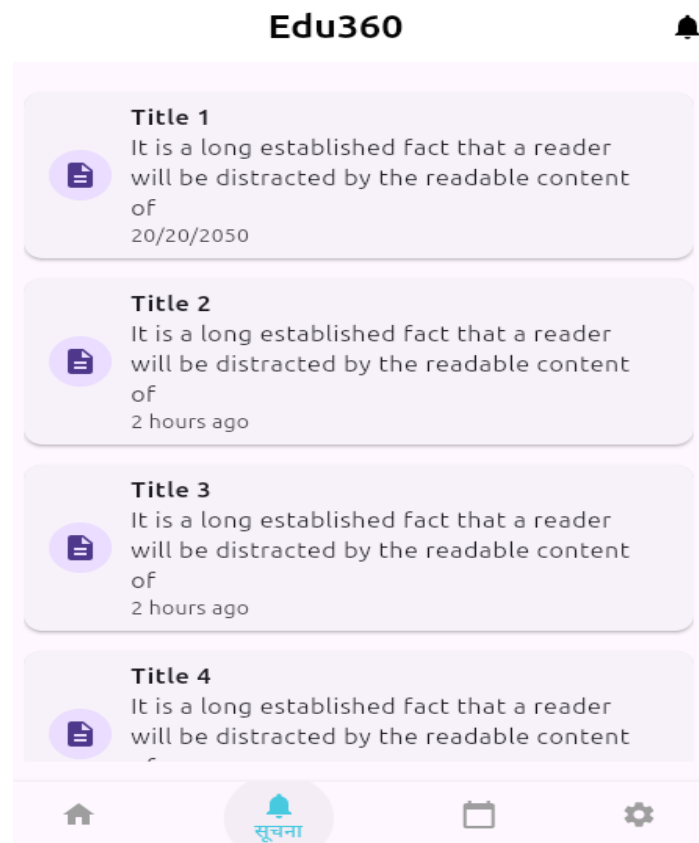
- Calender

- Setting

- Leave Request

- Timetable

- Result

- Fees

- Khalti Payment

Admin/Teachers

- Login Page

- Home Page
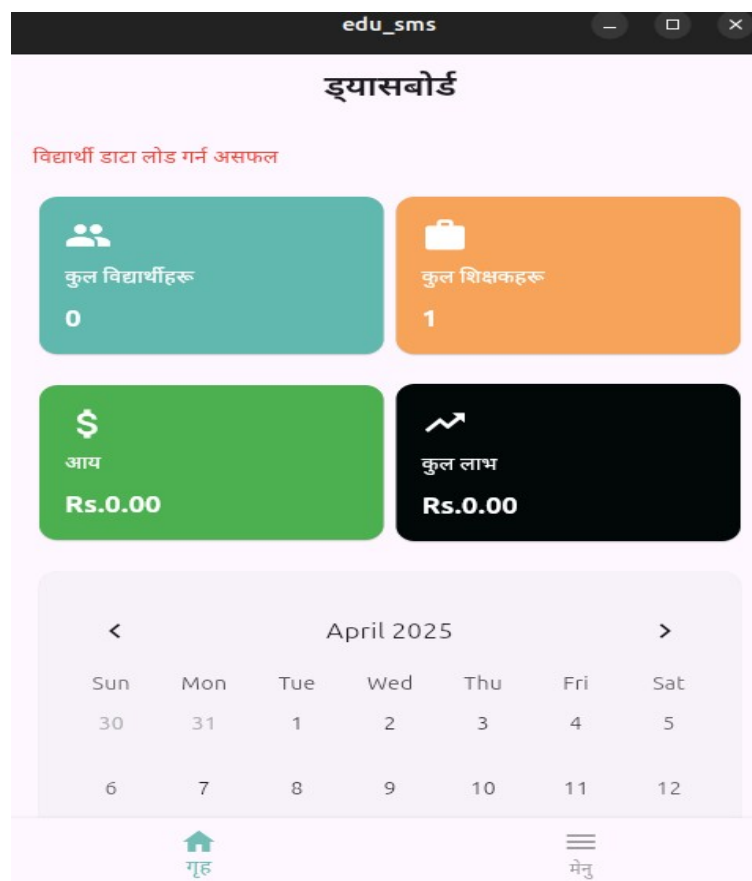
- Menu Page
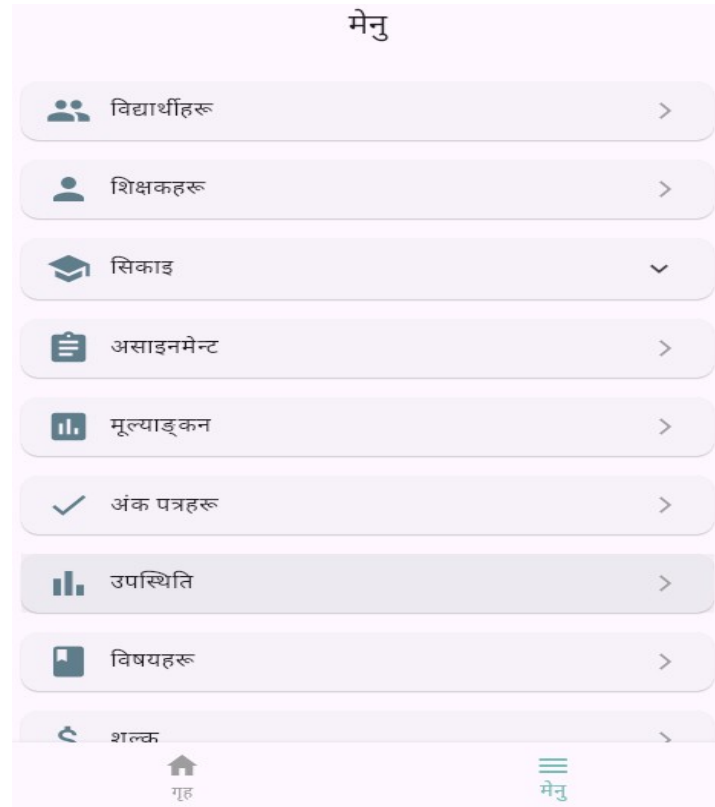
- Teachers

- Learning Curriculum

- Assignment

- Marksheets

- Fees