



**Tribhuvan University**  
**Faculty of Humanities and Social Science**

**AN INTERNSHIP PROPOSAL**

**ON**

**Python Django Intern**

**AT**

**Sipalaya Info Tech Pvt. Ltd**

**Submitted to**  
**Department of Computer Application**  
**Pascal National College**

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

**Submitted by**  
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# 1. INTRODUCTION

**Sipalaya InfoTech** is Nepal's premier IT training and placement marketplace that bridges the gap between emerging tech talent and industry demands. Headquartered in Kathmandu since 2022, the platform empowers students by providing practical, job-ready training in cutting-edge fields like web development, mobile apps, data science, and digital design. By aligning its continuously updated curriculum with real-world employer requirements, Sipalaya InfoTech has successfully equipped over 2,000 professionals with the essential skills needed to build thriving careers in the global IT ecosystem.

During my internship, as a Python Django Development Intern, I actively contribute to the development and maintenance of robust web applications. Working under the direct guidance of a technical supervisor, my responsibilities include writing clean backend logic, managing database structures, and integrating essential APIs. Additionally, I support the development lifecycle by conducting testing and debugging to ensure application reliability and performance.

The purpose of this internship contribution is to support a more reliable, user-friendly, and scalable digital platform while gaining hands-on experience in real-world projects and development.

# 2. COMPANY DETAILS

Sipalaya InfoTech is Nepal's premier IT training and placement institute, established in 2022 with the goal of bridging the gap between local talent and industry demands. Headquartered in Kathmandu, the platform helps students easily access comprehensive, practical training in critical technical domains such as web development, mobile app development, data science, digital marketing, and graphic design within Nepal's expanding digital landscape.

The company prioritizes educational quality, student-centric growth, and professional integrity. All programs and curricula are continuously updated to align with modern employer requirements, ensuring a reliable and transformative career path for aspiring technology professionals. Guided by its foundational values, Sipalaya InfoTech focuses on transparent, ethical practices to build South Asia's most trusted ecosystem for tech careers.

Sipalaya InfoTech uses robust hands-on methodologies, seasoned industry instructors, and collaborative community partnerships to deliver impactful, job-ready skills to Nepali youth. By providing an inclusive learning framework and a growing, supportive alumni network, it successfully drives economic opportunity, empowers students to compete globally, and directly accelerates Nepal's overall technological advancement.

As an intern, I am gaining practical experience in a collaborative environment that values innovation and continuous improvement. The opportunity to contribute to real development tasks has helped me enhance my skills while supporting an educational mission that aims to make a meaningful social and technological impact in Nepal.

### **3. PROBLEM STATEMENT**

The digital service ecosystem in Nepal lacks a centralized, secure platform to efficiently connect clients with verified service providers. This results in trust deficits and communication gaps for users, alongside limited market reach for skilled professionals. As a Python Django Developer, the challenge lies in engineering a reliable, secure backend infrastructure capable of handling complex user data verification, seamless multi-sector service routing, and robust data isolation to ensure privacy and system integrity.

### **4. OBJECTIVES**

1. Enhance Platform Functionality and Backend Architecture.
2. Develop Scalable Database Models and Features.
3. Build and Integrate Secure APIs.
4. Troubleshoot, Optimize, and Maintain Code Quality.

### **5. DESCRIPTION OF INTERNSHIP WORK**

During my internship as a Python Django Development Intern, my work mainly focuses on custom backend web development, database management, and server-side logic engineering. I assist in designing and implementing robust database schemas, writing clean

and maintainable Python code, and building scalable backend structures using the Django framework to support the application's core functionalities.

I also support the development team by creating and integrating secure RESTful APIs, configuring authentication systems, troubleshooting server-side performance issues, and debugging codebase defects to ensure smooth, high-performance web operations. My tasks include optimizing database queries, writing and executing test cases to validate code reliability before deployment, and collaborating with senior developers and supervisors to translate system requirements into technical solutions.

Through these activities, I am learning how custom, enterprise-level web applications are architected and maintained, how secure API endpoints and relational databases are handled, and how to manage continuous integration and backend updates in a professional, agile software development environment.

## 6. INTERNSHIP DETAILS

|              |                                |
|--------------|--------------------------------|
| Organization | Sipalaya Info Tech Pvt Ltd     |
| Address      | Narephat, Koteswor , Kathmandu |
| Email        | infotech@sipalaya.com          |
| Start Date   | 15th June 2026                 |
| Duration     | 3 Months                       |
| Position     | Python with Django Intern      |
| Mentor       | Saurab Karki                   |
| Office Hour  | 10am-6pm                       |

## **7. INTERNSHIP PLAN**

The internship plan is designed to provide hands-on exposure and progressive learning in Backend Development, website management, and team collaboration at Sipalaya Info Tech. The plan focuses on building practical web development skills, improving troubleshooting ability, and gaining experience in real project development.

### **1. Orientation & Familiarization (Initial Phase)**

- Introduction to the Platform: Familiarization with Sipalaya InfoTech's project architecture, service ecosystems, and development standards.
- Backend Stack & Architecture: Understanding custom MVC/MVT patterns, Django framework internals, configuration settings, and database environments (e.g., PostgreSQL).
- Workflows & Collaboration: Overview of team communication practices, technical git branch management workflows (GitHub/GitLab), and project tracking tools.

### **2. Backend Logic & Database Design (Early Phase)**

- Database Modeling: Assisting in creating, executing, and modifying relational database schemas, models, and migrations using Django's ORM.
- Core View Implementation: Learning to write functional and class-based views to handle backend system logic and process user data requests.
- Shadowing & Code Review: Observing senior developers to understand query optimization, system performance best practices, and clean code principles.

### **3. API Development & Feature Integration (Mid Phase)**

- RESTful API Engineering: Contributing to building, extending, and structuring endpoints using the Django REST Framework (DRF).
- Authentication & Security: Implementing secure user registration, token-based authentication (JWT/Session), role-based access control, and secure data isolation guidelines.
- Third-Party Integration: Supporting the team in connecting external services, payment gateway pipelines, or media storage management systems.

#### **4. Testing, Optimization & Debugging (Advanced Phase)**

- **Unit Testing:** Writing and executing structured test suites using Django's testing tools to ensure backend reliability and prevent regressions.
- **Debugging & Query Tuning:** Profiling database queries, optimizing `select_related` and `prefetch_related` calls, and resolving server-side functionality bugs.
- **Deployment Workflows:** Assisting in configuring environment variables, understanding server deployment pipelines (e.g., Docker, Gunicorn, Nginx, or cloud platforms), and monitoring runtime logs.

#### **5. Documentation & Report Preparation (Final Phase)**

- **API & System Documentation:** Maintaining clean Postman collections, Swagger documentation, and structured codebase markdown files for onboarding or handovers.
- **Task Logging:** Summarizing regular task outputs, technical logic designs, and architectural breakthroughs achieved throughout the internship.
- **Final Report Compilation:** Preparing the final technical internship report emphasizing core contributions, engineered features, and practical backend software engineering skills acquired.

### **8. EXPECTED OUTCOME**

Upon completion of the internship at Sipalaya Info Tech, the expected outcomes include:

- **Advanced Backend Engineering Skills:** Enhanced proficiency in Python and the Django framework, with hands-on experience in building scalable custom server-side applications and managing complex MVT/MVC architectures.
- **Database Mastery & Query Optimization:** Improved ability to design robust relational database schemas using Django's ORM, execute safe migrations, and optimize database queries to ensure efficient data retrieval.
- **API Development & Integration Experience:** Practical knowledge of engineering secure RESTful APIs using the Django REST Framework (DRF) and integrating third-party services and authentication systems.

- Quality Assurance & Modern Workflows: Practical understanding of backend unit testing, logging, debugging, and live deployment processes alongside production-level team collaboration workflows using Git.

## 9. REFERENCES

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