

Faculty of  
Department of Computer science

## **Internship Proposal**

Student's Name : Siek Chhengly  
Company Name: : SINET  
Internship Position : Web developer  
Internship Project Title : User Authentication  
Internship Started Date : 16<sup>th</sup> January 2024  
Internship Ended Date : 16<sup>th</sup> April 2024

### **1. About Company**

SINET (pronounces S.I NET) founded in 2009 is a Specialist Dedicated Internet and Telecom Service Provider with strong focuses on engineering excellence and reliable support. SINET is one of the biggest providers of nation-wide Fiber, DWDM, SDH and a Metro Ethernet backbone. We own and operate over 200 active network POPs across the country, not only in all main cities and provincial towns but also in remote districts and villages.

SINET is a registered trademark of S.I Group Co. Ltd., a diverse Cambodia-based company engaged in key sectors like Trading, Property, FMCG, Travel, Hospitality, and ICT for over 20 years. The company's vision is to empower businesses and individuals in Cambodia with seamless and high-speed communication anytime and anywhere. SINET's mission is to transform itself into a comprehensive one-stop shop for ICT services, achieving this through the delivery of high-quality Internet and Telecom Services, leveraging engineering excellence, and maintaining a strong focus on customer service. Additionally, SINET takes pride in motivating its staff to attain the highest standards of personal excellence.

### **2. Project Description**

The project will focus on the development of secure and user-friendly user authentication. This system will handle user registration, sign in, and password recovery functionality. It is intended to be a smaller scale project suitable for a 3-month internship, with the potential to integrate into a larger project if completed efficiently.

#### **2.1. Project Objectives**

- Implement secure user registration and account creation processes.
- Develop a strong password policy and encryption mechanism to protect user credentials.
- Implement session management to control user access and enhance overall system security.
- Provide a user-friendly interface for account recovery and password reset processes.
- Design the authentication system to be scalability.

- Consider load balancing for handling increased user traffic.
- Ensured compatibility with the front-end and other components.
- Providing a good Rest API of login, reset password, register and user profile to mobile team.

## 2.2. Functional for Administrator

Features	Description
Manage user	<ul style="list-style-type: none"> <li>• Admin can manage the list of users.</li> <li>• Admin can block and delete user.</li> <li>• Admin can add new/Edit user information</li> </ul>
Grand permission	<ul style="list-style-type: none"> <li>• Manage user by departments.</li> <li>• User selection: special permission</li> </ul>
User interface (UI) for admin	<ul style="list-style-type: none"> <li>• Include options to assign or revoke specific permissions from other users.</li> <li>• Admin can view and modify permission.</li> </ul>

## 2.3. Technologies Used

- Python Django is the framework of Python language, we use this framework for back-end control.
- Database we are using PostgreSQL.
- RESTful APIs we are using Python Django RESTful APIs
- GitLab is used to collaboration.

## Methodology/Activities

### Python foundation

- Gain proficiency in python syntax and data structure
- Control flow

### Python Django framework

- Get familiar with basics Django.
- Understanding Python MVC (Models, Views and Controller)
- Understanding Python RESTful APIs
- Understanding about structure of Admin panel with Python Django
- Explore Django's ORM (Object-Relational Mapping) and Querysets
- Handle User Authentication and Authorization
- Handle Static Files and Media Files
- Django REST framework core concepts
- Understanding about create RESTful APIs

## Database design

- Design PostgreSQL database schema to store user information securely.
- Include fields for user detail, hashed password, and any additional information.
- Utilized Django migrations for applying changes to the database.

## User Registration

- Implement a user registration view that securely stores user data into PostgreSQL database.
- Validate user input.
- Implement email verification.

## User Login

- Generated authentication tokens using Django REST Framework.
- Ensured secure password handling.

## Password Recovery

- Implemented a password recovery view that sent reset links to user emails.
- Designed a secure mechanism for users to reset their passwords.

## RESTful API Design

- Utilized Django REST Framework to create API views.
- Defined serializers for user-related data.
- Created API endpoints for registration, login, password recovery, and user details.

Approved by Supervisor

Seen and Approved by Advisor

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