A logo of a university

Description automatically generated

**CEBU INSTITUTE OF TECHNOLOGY**

**UNIVERSITY**

COLLEGE OF COMPUTER STUDIES

**API INTEGRATION/GOOGLE CONTACTS**

*VIRTUE M. LAZAGA*

The implementation began with setting up Google API credentials by creating a Google Cloud project, enabling the People API, and generating OAuth 2.0 credentials for authentication. The OAuth consent screen was configured with the necessary scopes to access Google Contacts. For the backend, Spring Boot was used to implement OAuth 2.0 authentication and develop REST endpoints for retrieving, adding, editing, and deleting contacts. The frontend was built using Thymeleaf, providing a user-friendly interface to display contacts, along with input forms for adding and editing them. Buttons were implemented for updating and deleting contacts, ensuring smooth user interactions.

Testing involved running the application to verify authentication, performing CRUD operations through the web interface, and debugging API-related errors. Several challenges were encountered, including handling OAuth token expiration, managing API rate limits and permissions, synchronizing data between the local UI and Google Contacts, and resolving authentication issues. Despite these challenges, the final outcome was a fully functional web application that allows users to seamlessly view, add, edit, and delete contacts within an intuitive interface.