MAPÚA UNIVERSITY

SCHOOL OF INFORMATION TECHNOLOGY

ITS120L- Application Development and Emerging Technologies 1 (Laboratory)

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Project Title	IoT-Integrated Web-Based Pet Information Management System with Microchip Detection
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Client (Organization Name, Department)	Bethlehem Animal Clinic
Team Lead	DENIÑA, Julia Abigail B.

Project Requirement

Look for a specific problem faced by any company, organization, or practically anyone and think of a possible IT solution. The solution can be web-based or mobile application.
Describe the problem here and include details.

Specify clearly the what AI or security method to apply in a specific system in a particular business.

Ex: IMPLEMENTING AI-based Biometrics for SECURITY in Coffee Shop Inventory System

Note:

a. PROJECT SHOULD HAVE AI OR SECURITY FEATURE OR BOTH EITHER IN WEB APP OR MOBILE APP.
b. PROJECT TOPIC/TITLE SHOULD BE UNIQUE IN EACH GROUP IN ALL SECTIONS OF ITS120L.

Background & Specific Problem

Managing pet information securely and efficiently has become increasingly important as the number of pet owners and veterinary service providers continues to grow. Traditional methods of pet identification, such as manual record-keeping or relying solely on ID tags, are prone to **loss, tampering, and human error**. In many cases, when a pet is lost or transferred between branches, verifying its identity and retrieving its complete records can be slow and inconsistent. This lack of a centralized system leads to **delays in accessing vital information**, including vaccination history, medical records, and owner details.

Furthermore, without a secure and automated identification process, unauthorized access to sensitive pet and owner data becomes a significant risk. As pet-related businesses and veterinary services expand, there is a growing need for a **centralized, secure, and IoT-enabled solution** to manage pet profiles efficiently and protect sensitive information.

Proposed IT Solution

To address these challenges, we propose developing an **"IoT-Integrated Web-Based Pet Information Management System with Microchip Detection."** This system uses **RFID-enabled microchips** implanted in pets and an **IoT-compatible microchip scanner** to provide a secure, efficient, and centralized method for managing pet information.

When a microchip is scanned, the IoT-enabled device transmits the pet's **unique identification number** to the web-based platform, which retrieves the corresponding pet profile from a secure database. The system will display essential details.

By integrating IoT technology, the system ensures **real-time data synchronization** across multiple branches, preventing inconsistencies and reducing manual verification processes. Security measures such as **encrypted data transmission** and **role-based access control** will also be implemented to protect sensitive information from unauthorized access.

This solution provides a **faster, safer, and more reliable** approach to pet identification and information retrieval, improving operational efficiency and enhancing overall customer trust.