### **Sprint 1 Plan (Weeks 3–4): Focus on ANPR Development**

**Sprint Objectives:**

* Develop a deep understanding of ANPR systems.
* Implement license plate detection using object detection models.
* Integrate OCR for character recognition.
* Store detected data in a database.

**Tasks:**

1. **Research & Learning**
   1. Basics of object detection, OCR, and databases (Day 1-3).
   2. Interns study deep learning models suitable for plate detection (e.g., YOLO).
2. **Implementation**
   1. Train object detection models for license plate detection.
   2. Apply OCR techniques to extract alphanumeric characters.
3. **Integration**
   1. Integrate the detection system with video streams (e.g., video feeds).
4. **Review & Retrospective**
   1. Sprint-end review of models and learning outcomes.
   2. Identify gaps for Sprint 2 preparation.

### **Sprint 2 Plan (Weeks 3–4): Focus on ATCC Development**

**Sprint Objectives:**

* Develop a vehicle classification model.
* Implement dynamic traffic classification and vehicle counting logic.
* Ensure real-time responsiveness.

**Tasks:**

1. **Research & Learning**
   1. Study vehicle classification models and datasets (Day 1-3).
   2. Explore dynamic traffic classification and vehicle counting algorithms and their role in traffic management.
2. **Implementation**
   1. Train and evaluate a vehicle classification model (e.g., cars, buses, trucks).
   2. Develop dynamic vehicle counting system based on classified traffic volumes.
3. **Review & Retrospective**
   1. Analyze model performance and discuss next steps for integration in Sprint 3.

### **Sprint 3 Plan (Weeks 5–6): Integration and Basic Testing**

**Sprint Objectives:**

* Combine ANPR and ATCC into a unified system.
* Optimize the system for performance and test functionality.

**Tasks:**

1. **Integration**
   1. Merge ANPR and ATCC systems into a cohesive platform.
   2. Ensure data exchange and decision-making between components.
2. **Optimization**
   1. Improve real-time performance of detection and classification.
   2. Test the system's responsiveness using test datasets.
3. **Testing**
   1. Conduct unit and integration testing.
   2. Identify major issues for the next phase.
4. **Review & Retrospective**
   1. Gather intern feedback and discuss key learnings.
   2. Prepare a knowledge base for further system validation in real-world scenarios.