

Process flow for a License plate recognition system For IT Park

1. Vehicle Arrival:

- As a vehicle enters the IT park premises, it approaches a designated entry point equipped with a camera.

2. Image Capture:

- The camera captures an image of the vehicle as it approaches the entry point.
- The image is then processed by the license plate recognition (LPR) software.

3. License Plate Extraction:

- The LPR software analyzes the image to locate and extract the license plate region.

4. Character Segmentation:

- The characters on the license plate are segmented from the plate image.
- This step is crucial for accurately recognizing individual characters.

5. Character Recognition:

- The segmented characters are fed into an Optical Character Recognition (OCR) algorithm.
- The OCR algorithm identifies and recognizes the characters on the license plate.

6. Plate Number Verification:

- The recognized characters are combined to form the license plate number.
- The system verifies the license plate number against a database of authorized vehicles.

7. Alert Generation:

- If the license plate number matches an entry in the database, the system generates an alert indicating a recognized, authorized vehicle.
- If the license plate number does not match any entry, the system generates an alert for an unrecognized or unauthorized vehicle.

8. Database Update:

- The system updates the database with the timestamp and details of the vehicle entry, whether authorized or unauthorized.

9. Safety Team Notification:

- An alert is sent to the safety team's monitoring station or mobile device.

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- The alert includes details such as the license plate number, vehicle type, and entry status.

10. **Safety Team Response:**

- Upon receiving the alert, the safety team can take appropriate action based on the entry status:
 - For authorized vehicles: No action may be necessary, or the team may choose to monitor the vehicle's movements within the IT park.
 - For unauthorized vehicles: Security personnel can be dispatched to intercept the vehicle and take necessary measures.

11. **Exit Tracking (Optional):**

- Similarly, when a vehicle exits the IT park, the process can be repeated to track and verify the license plate number.

12. **Logging and Reporting:**

- All vehicle entries, including timestamps and entry statuses, are logged for future reference and reporting purposes.
- Reports can be generated periodically to analyze vehicle traffic patterns and security incidents.