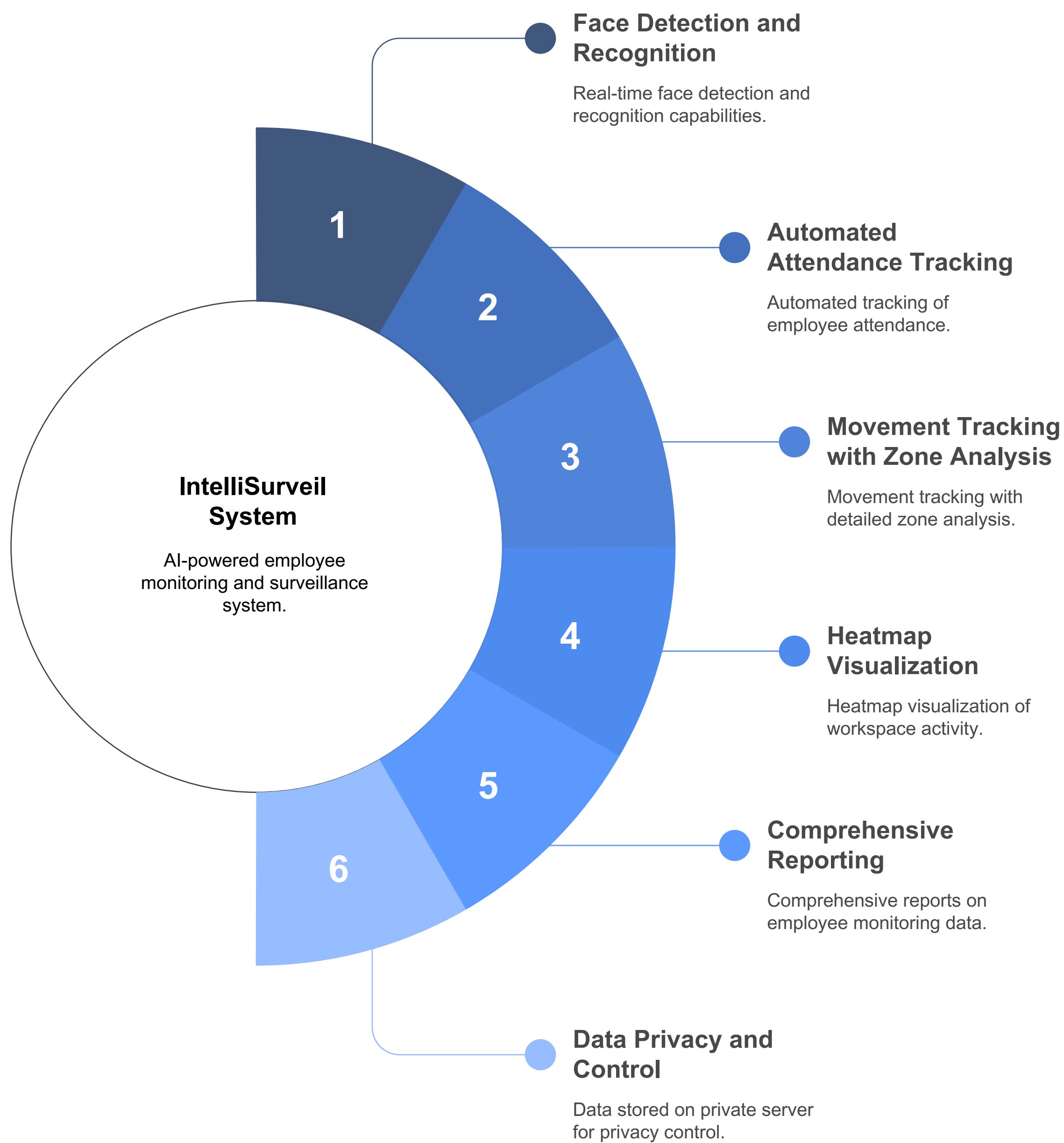


# IntelliSurveil – Employee Monitoring & Surveillance System - Product Requirements Document

This document outlines the requirements for IntelliSurveil, an AI-powered employee monitoring and surveillance system. The system aims to enhance security and provide insights into employee activity within a workspace by leveraging existing security camera infrastructure. Key features include real-time face detection and recognition, automated attendance tracking, movement tracking with zone analysis, heatmap visualization of activity, and comprehensive reporting. All data, including video footage and reports, will be stored on the user's private server to ensure data privacy and control.

# Unveiling IntelliSurveil's Multifaceted Capabilities



## 1. Objective

The primary objective is to develop an AI-powered surveillance software solution that integrates seamlessly with existing security camera systems. This system will monitor employee movement, perform real-time face detection, automate attendance tracking, measure time spent on tasks versus breaks, and visualize activity patterns through heatmaps. A crucial aspect of the system is the secure storage of all video footage and generated reports on the user's private server, ensuring data security and compliance with privacy regulations.

## 2. Key Features

### A. Face Detection and Recognition

- **Real-time Face Detection:** The system must be capable of detecting faces in real-time from IP/CCTV camera feeds.
- **Employee Matching:** Detected faces should be matched against a pre-populated employee database.
- **Automated Entry/Exit Logging:** Automatically log employee entry and exit times based on facial recognition.
- **Unknown Person Alert:** Generate an alert when an unknown person (i.e., a face not present in the employee database) is detected.

### B. Attendance System

- **Automated Attendance Marking:** Automatically mark employee attendance based on facial recognition data.
- **Time Calculation:** Calculate in-time, out-time, total work hours, and idle time for each employee.
- **Data Export:** Provide options to export attendance data to common formats like Excel, PDF, and CSV.

### C. Real-time Movement Tracking

- **Employee Movement Logging:** Track and log the movements of each employee throughout the office space.
- **Zone Definition:** Allow the definition of specific zones within the monitored area (e.g., front desk, restroom, break area, workspace).
- **Time in Zone Measurement:** Measure and record the amount of time each employee spends in each defined zone.

### D. Heatmap Visualization

- **Heatmap Generation:** Display heatmaps visualizing employee movement patterns within the monitored area.
- **Crowding/Idle Zone Tracking:** Track and identify areas with high or low employee activity over time.
- **Customizable Time Frames:** Allow users to customize the time frame for heatmap generation (e.g., per day, week, or month).

### E. Activity Reports

- **Summary Reports:** Generate daily, weekly, and monthly summary reports of employee activity.

- **Per-Employee Breakdown:** Provide a detailed breakdown of activity for each employee, including:
  - Days present
  - Total productive hours
  - Idle/break time
  - Zone visits (frequency and duration in each zone)
- **Behavior Pattern Identification:** Identify potential behavior patterns, such as frequent breaks or late arrivals.

## F. Storage & Server Integration

- **Local/Private Server Storage:** Store all video footage and generated reports on the user's local or private server.
- **Footage Organization:** Organize video footage by date and camera location for easy retrieval.
- **Secure Access Control:** Implement secure access control mechanisms for stored videos, limiting access to authorized personnel.
- **Scheduled Backups (Optional):** Provide an option for scheduled backups of video footage and reports.

## G. Admin Dashboard

- **Live Camera Feed:** Display a live camera feed view with real-time face tags.
- **Daily Attendance Overview:** Provide a quick overview of daily attendance.
- **Alerts & Notifications:** Display alerts and notifications for unknown or unauthorized access.
- **Heatmap Playback & Data Filtering:** Allow users to playback heatmaps and filter data based on various criteria.

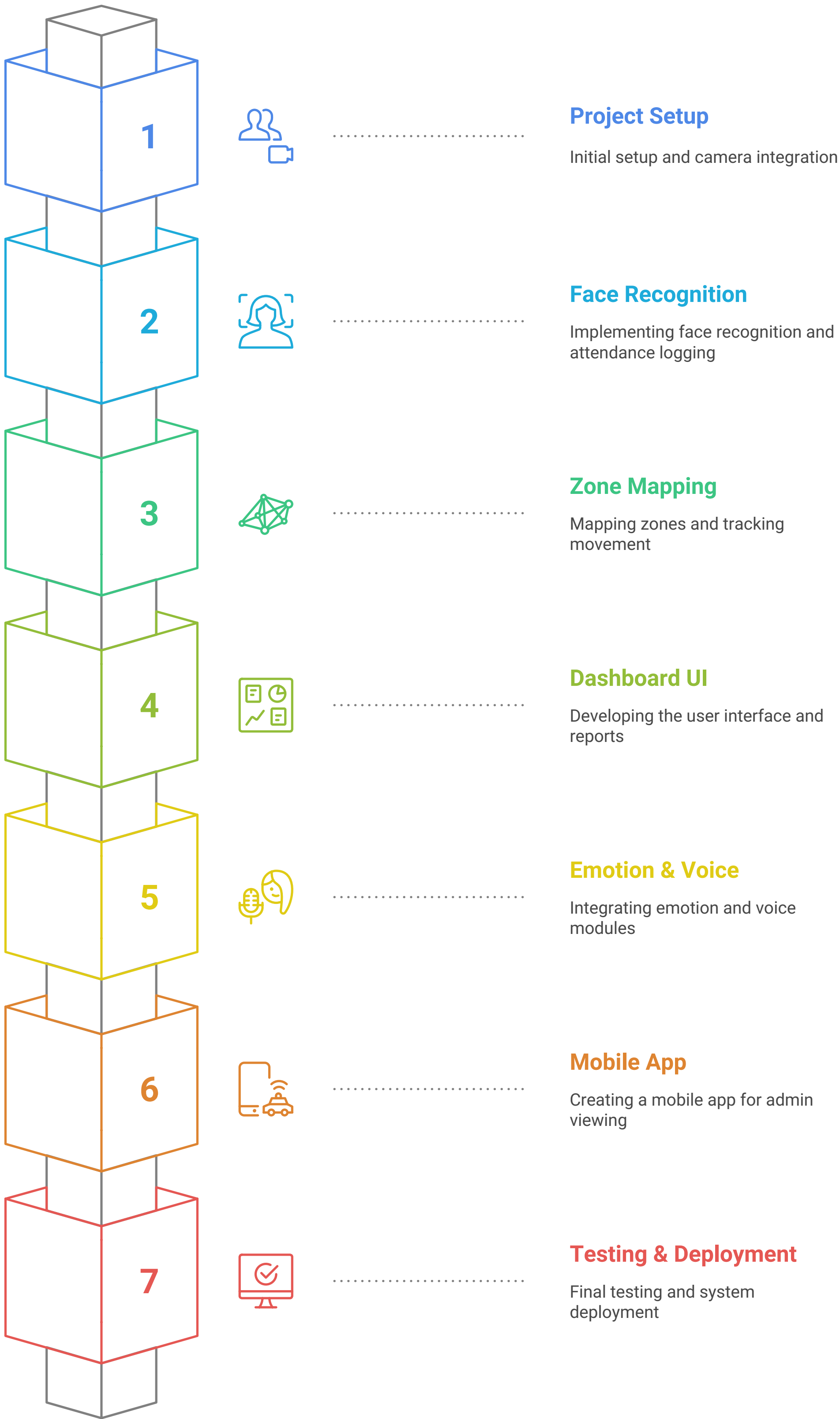


## Additional Advanced Features

- ◆ 1 . Emotion Recognition (Detect Stress/Fatigue)
  - Analyze facial expressions in real-time using deep learning.
  - Tag emotional states: **neutral, happy, sad, angry, stressed, tired.**
  - Log emotion trends per employee throughout the day.
  - Flag high stress/fatigue levels for HR/admin intervention.
- ◆ 2 . Voice Command & Emergency Detection
  - Integrate microphone input from zones like reception or cabins.
  - Recognize emergency keywords like “help”, “fire”, “emergency”.
  - Alert admin instantly via the dashboard or SMS/email.
  - Allow voice commands for admin like “Show today’s attendance”, “Play footage of Zone 1 at 2 PM”, etc.
- ◆ 3 . Mobile App for Admin Viewing
  - View real-time attendance, alerts, heatmaps.
  - Push notifications for unknown persons or emergencies.
  - Live camera feed access with face tags and playback.



# IntelliSurveil Development Journey



## 6. Security & Privacy Considerations

- End-to-End Encryption of all stored videos and logs.
- Role-based dashboard access.
- Local server support to avoid third-party cloud storage.
- Secure face data handling and GDPR-compliant logging.

## 7. Success Metrics

- 95%+ face recognition accuracy
- Alert response within <2 seconds
- Heatmap generation in <5 seconds
- 100% log accuracy for attendance
- Admin dashboard uptime  $\geq 99.5\%$