# Camera Characteristics for Smart Vision Attendance System

To implement the **Smart Vision Attendance System (SVAS)** effectively, the camera should have the following characteristics:

1. **Resolution**:
   * Supports at least **1080p (Full HD)** resolution for clear and detailed video streams.
   * Higher resolutions (e.g., 2K or 4K) are ideal for environments with larger crowds.
2. **Field of View**:
   * Wide-angle lens with a field of view of **90–120 degrees** to cover large areas.
   * Suitable for classrooms, offices, or hallways.
3. **Pan-Tilt-Zoom (PTZ) Capability**:
   * **Pan**: Horizontal movement to adjust the view across a wide range.
   * **Tilt**: Vertical movement for covering different heights.
   * **Zoom**: Optical zoom for focusing on specific individuals or smaller areas.
4. **Low-Light Performance**:
   * Equipped with **infrared (IR)** or **night vision** for clear video in low-light or nighttime conditions.
   * Suitable for use in varying lighting environments.
5. **Frame Rate**:
   * Minimum of **25–30 frames per second (fps)** for smooth real-time video processing.
   * Higher frame rates are preferred for environments with fast movement.
6. **Connectivity**:
   * **Wi-Fi or Ethernet-enabled** for seamless integration with the network.
   * Must support live streaming to the processing system.
7. **Compatibility**:
   * Compatible with popular video processing libraries (e.g., OpenCV) and facial recognition frameworks.
   * Support for standard video protocols like **RTSP** or **ONVIF** for easy integration.
8. **Build Quality**:
   * Durable and lightweight.
   * Compact design for easy installation in different locations.
9. **Power Supply**:
   * Supports **USB power** or **AC adapter** for flexible installation.
10. **Storage Option (Optional)**:

* Onboard **SD card slot** for local video storage.
* Useful for offline recording and backup.