**ITLID601**

**INSTRATION OF IP BASED DEVICES**

**GROUP ASSIGNMENT**

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**QUESTIONS:**

1. What are the materials, tools and equipment (hardware and software) needed to install cctv camera? And give the function of each one.
2. Describe the different types of camera.

**Materials:**

* **CCTV Cameras:** These are the primary components capturing video footage. Choose cameras suitable for your specific needs (e.g., indoor, outdoor, dome, bullet).
* **Cables:** Depending on the camera type and setup, you'll need coaxial cables, Ethernet cables (for IP cameras), or power cables (for both).
* **Power Supply:** Power adapters or power over Ethernet (PoE) switches to provide electricity to the cameras.
* **Mounting Hardware:** Brackets, screws, and other mounting accessories to secure the cameras in place.
* **CCTV DVR or NVR:** Digital Video Recorder (DVR) for analog cameras or Network Video Recorder (NVR) for IP cameras. These devices record and store the video footage.
* **Hard Drive:** Storage device for storing recorded footage. Ensure sufficient capacity to store the required amount of video data.
* **Monitor:** Display unit for viewing live video feeds and recorded footage from the CCTV system.
* **Connectors and Adapters:** Various connectors like BNC connectors for coaxial cables, RJ45 connectors for Ethernet cables, and adapters for connecting different components.
* **Optional: PoE Switches/Injectors:** If using IP cameras, Power over Ethernet switches or injectors can simplify the wiring setup by delivering power and data over the same Ethernet cable.

**Tools:**

* **Drill:** For mounting cameras and running cables through walls or ceilings.
* **Screwdriver Set:** Different types and sizes of screwdrivers for assembling and mounting cameras.
* **Cable Tester:** To ensure proper connectivity and diagnose any cable issues.
* **Crimping Tool:** For terminating Ethernet cables with RJ45 connectors.
* **Cable Ties and Clips:** For organizing and securing cables to prevent tangling and ensure a neat installation.
* **Ladder:** For reaching high installation points, especially for outdoor cameras.
* **Voltage Tester:** To check electrical outlets and power sources for safety.
* **Measuring Tape:** For accurate placement and alignment of cameras.

**Software:**

* **CCTV Management Software:** Software provided with the DVR/NVR for configuring settings, viewing live feeds, and accessing recorded footage remotely.
* **Networking Tools**: Software tools for configuring IP addresses, setting up port forwarding, and managing network settings for IP cameras and NVRs.
* **Mobile Apps** Many CCTV systems offer mobile apps for remote monitoring and management, allowing users to view live feeds and playback recorded footage on smartphones and tablets.

1. **Dome Cameras:**
   * **Design:** Dome-shaped housing.
   * **Features:** They offer a discreet and aesthetic design, making them suitable for indoor installations. Some dome cameras come with vandal-resistant and weatherproof features for outdoor use.
   * **Applications:** Used in retail stores, offices, hotels, and indoor public spaces.
2. **Bullet Cameras:**
   * **Design:** Cylindrical or rectangular shape, resembling a bullet.
   * **Features:** Typically weatherproof and designed for outdoor use. They often have longer-range infrared (IR) capabilities for night vision.
   * **Applications:** Suitable for outdoor locations like parking lots, building perimeters, and entrances where long-range viewing is required.
3. **PTZ Cameras (Pan-Tilt-Zoom)**
   * **Design:** Can rotate horizontally (pan), vertically (tilt), and zoom in or out.
   * **Features:** Provide remote control capabilities, allowing operators to pan, tilt, and zoom to focus on specific areas or objects.
   * **Applications:** Widely used in large areas such as stadiums, airports, and city surveillance systems where flexible and comprehensive coverage is essential.
4. **Box Cameras:**
   * **Design:** Rectangular or square-shaped cameras with a separate lens and body.
   * **Features:** They offer flexibility in lens selection, allowing users to choose the appropriate lens for their specific monitoring needs.
   * **Applications:** Commonly used in indoor environments where customized lens options and image quality are priorities, such as casinos and banks.
5. **360-Degree Cameras:**
   * **Design:** Dome-shaped or spherical cameras with fisheye lenses.
   * **Features:** Capture panoramic views, eliminating blind spots and providing a comprehensive field of view.
   * **Applications:** Ideal for monitoring large open areas like parking lots, warehouses, and public plazas where a wide coverage area is required.
6. **Wireless Cameras:**
   * **Design:** Similar to dome, bullet, or box cameras but with wireless connectivity.
   * **Features:** Offer flexibility in installation as they don't require extensive cabling. However, they still need power sources.
   * **Applications:** Suitable for retrofitting existing structures or locations where running cables is challenging or not feasible.
7. **IP Cameras:**
   * **Design:** Can vary in form factor, such as dome, bullet, or PTZ, but use Internet Protocol (IP) for communication.
   * **Features:** Offer high-resolution video, advanced analytics, and remote access capabilities over a network.
   * **Applications:** Widely used in modern surveillance systems, offering scalability, flexibility, and integration with other network devices.