**Slide 1:**   
  
**Aims:**   
To design and construct a simple, low-cost electronic water level indicator using resistors, transistors, LEDs, wires, and a breadboard that visually displays different water levels in a tank, demonstrates the use of transistors as switches, and helps in monitoring water levels to prevent overflow and wastage.

Objectives :   
 **To design and implement a simple water level monitoring circuit** that indicates different levels of water using LEDs.

 **To study the working of transistors as electronic switches** in detecting water conductivity.

 **To provide a low-cost and efficient method** of monitoring water levels in a tank or container.

 **To learn practical application of basic electronic components** (resistors, transistors, LEDs, breadboard).

 **To develop a visual alert system** for preventing water overflow or shortage.

 **To demonstrate the concept of current conduction through water** and its effect on triggering an indicator.  
  
  
  
**Slide 2:**

**Introduction :**A water level indicator is a simple electronic system designed to monitor and display the level of water in a container or tank. Using basic components such as resistors, transistors, LEDs, wires, and a breadboard, the circuit works on the principle that water can conduct a small current, which activates transistors acting as switches to glow LEDs at different levels. This project provides a low-cost, practical, and reliable method to prevent water wastage due to overflow and ensures timely refilling during shortage, while also helping learners understand the real-life application of fundamental electronic components.

**Slide 3:   
  
Apparatus:**1. Breadboard   
2. 9V battery with holder   
3. BC 547 Transistors ( x4)   
4. Resistors 330 ohm (x4)   
5. Led (x4)   
6. Some wires  **Procedure:**

Got it 👍 I’ll rewrite your procedure clearly, keeping in mind:

* **4 transistors**
* **4 resistors**
* **4 LEDs**
* **5 probes** (1 common probe + 4 level probes)
* **4 wires from LED cathodes to make a common path**

**Procedure**

1. **Placement of Transistors**
   * Four NPN transistors were placed side by side on the breadboard, each representing one water level detection stage.
2. **Collector–Resistor Connections**
   * A resistor was connected to the collector terminal of each transistor to limit current and protect the LED.
3. **Emitter–LED (Anode) Connections**
   * The positive leg (anode) of each LED was connected to the emitter terminal of its respective transistors.
4. **Probe Connections (Base Control)**
   * Four probes were connected to the base terminals of the transistors. These act as water-level sensing wires and will be dipped into the container at different heights.
5. **LED Cathode Wiring**
   * The negative leg (cathode) of each LED was connected with separate wires, all leading to a common row of the breadboard to provide a return path for current.
6. **Common Probe Connection**
   * An additional fifth probe (the common probe) was connected to the same row as the LED cathodes. This probe was placed at the bottom of the container and serves as the reference for all water level detection.
7. **Repetition for All Stages**
   * The same setup of **transistor + resistor + LED + probe** was repeated for all four transistors to complete four levels of indication (25%,50%,75% and 100%).
8. **Power Supply Connection**
   * Finally, the positive terminal of the 9V battery was connected to the free ends of the resistors, while the negative terminal of the battery was connected to the common cathode wiring of the LEDs, thereby completing the circuit.

**Circuit :**   
