Q3: Explanation of Each Component

1. **Ultrasonic Sensor (HC-SR04)**
    - **Principle:** Uses the time-of-flight method to measure distance.
    - **Types:** Different models exist, but HC-SR04 is common.
    - **Interfacing:** Connects to Arduino using Trig (trigger) and Echo (response) pins.
2. **Arduino Board**
    - **Principle:** Microcontroller processes input data and controls other components.
    - **Types:** Different models like Uno, Nano, Mega. Uno is commonly used.
    - **Interfacing:** Connects to sensor, servo, and display via digital pins.
3. **Servo Motor**
    - **Principle:** Rotates the ultrasonic sensor in small steps to scan an area.
    - **Types:** SG90 (plastic gears, low torque) or MG995 (metal gears, high torque).
    - **Interfacing:** Controlled by PWM signal from Arduino.
4. **Display (LCD/PC Processing Software)**
    - **Principle:** Converts distance readings into a radar-like graphical display.
    - **Types:** LCD (16x2 or 20x4) or software-based display using Processing.
    - **Interfacing:** Connects via I2C (LCD) or Serial (PC Processing Software).
5. **Power Supply**
    - **Principle:** Provides 5V power for Arduino and components.
    - **Types:** USB from PC or external 5V adapter.
    - **Interfacing:** Connected via Arduino's power input.