Components List / Bill of Materials

Core Components

- **Arduino Board**: ELEGOO UNO R3 - Controller board compatible with Arduino IDE
- **Ultrasonic Sensors**: HC-SR04 (3 units) - For water level detection and container presence
- **Water Pump**: 5V DC Mini Water Pump - For water dispensing
- **Relay Module**: 5V Relay Module - For controlling the water pump
- **LCD Display**: 1602 LCD Screen - For user interface

Indicators and Interface

- **LEDs**: Red and Green LEDs - For status indication
- **Buzzer Module**: Piezo Buzzer - For audio feedback

Power Supply

- **Arduino Power**: Portable Power Bank - For powering the Arduino board
- **Pump Power**: 9V Battery with Connector - For powering the water pump

Structural Components

- **Water Reservoir**: 1.5 liter square water bottle - For storing water
- **Tubing**: Transparent PVC Tubing - For water transport
- **Frame Material**: Polystyrene boards - For structural support

Wiring and Miscellaneous

- **Jumper Wires**: Jumper Wire Kit - Male to Male, Male to Female, Female to Female
- **Resistors**: Resistor Kit - Various values for electrical components
- **Breadboards**: Breadboard Set - One large and one small breadboard for prototyping circuits

Kit Components

Most of the electronic components needed for this project can be found in the ELEGOO Super Starter Kit: including:

- Various resistors and capacitors
- LEDs and switches
- Connecting wires
- Buzzer
- Breadboards

Tools Recommended

- Soldering iron and solder
- Wire cutters/strippers
- Hot glue gun
- Multimeter
- Screwdriver set

Notes

- All electronic components should be protected from water exposure.
- Ensure proper voltage regulation for all components.
- Double-check polarity when connecting LEDs and other polarized components.