List of Components

Microcontroller Board:

- **Arduino Board** (e.g., Arduino Uno, Nano, or Mega)
- USB Cable (for programming the Arduino)
- 9V or 12V Power Adapter (if required for external power) **optional**
- Breadboard (for circuit connections)
- Jumper Wires (male-to-male, male-to-female, female-to-female)
- Basic Electronic Components:
- Resistors (220Ω, 1kΩ, 10kΩ, etc.)
- Capacitors (optional, for stability in some circuits)
- Push Buttons (for user input)

Sensors and Modules:
- Temperature Sensor (e.g., LM35, DS18B20,DHT11)
- Ultrasonic Sensor (e.g., HC-SR04)
- Bluetooth Module (e.g., HC-05 or HC-06)
- Keypad Module (4x4 or 4x3)

Display Modules:
- 13. **16×2 LCD** Display (I2C version recommended for ease of use)
- 14. **7-Segment Display** (single-digit)

LEDs and Indicators:
RGB LED
Standard LEDs (Red, Green, Blue, Yellow, etc.)

Motors and Motor Drivers:

- Stepper Motor (e.g., 28BYJ-48 with ULN2003 driver) or nema17
- DC Motor
- Motor Driver Module (e.g., L298N, L293D)

Other Components:
- **Potentiometer** (for contrast adjustment of LCD)
- **Relay Module** (optional, for controlling AC appliances)