MCU Alarm Clock Project Checklist

1. Planning and Part Selection

- ☐ Define feature set
- ☐ Design overall structure
- ☐ Choose parts
    - ☐ MCU
    - ☐ Display type
    - ☐ LED indicators
    - ☐ Input buttons
    - ☐ Audio
    - ☐ Power supply method
- ☐ Create Project Brief

2. Software Development

- ☐ Connect hardware to Dev board
- ☐ Create software project
    - ☐ Implement RTC
    - ☐ Implement time display
    - ☐ Implement LED indicators
    - ☐ Implement buttons
    - ☐ Implement audio
    - ☐ Implement set clock logic
    - ☐ Implement set alarm logic
    - ☐ Implement low-power mode
- ☐ Test software
    - ☐ Test clock functionality

☐ Test alarm functionality

☐ Test power-on reset behavior

3. PCB and Case Design

☐ Design custom PCB

☐ Create schematic

☐ Design PCB board

☐ Order PCB board and components

☐ Design Case

☐ Model case

☐ Test fit components

☐ Print prototype

☐ Verify all parts align/fit

4. Final Assembly and Testing

☐ Assemble circuit

☐ Solder components

☐ Flash firmware

☐ Test functionality

☐ Assemble case

☐ Insert and secure all components

☐ Test operation and durability

☐ Monitor time-drift and battery levels