

# Human-Machine Interaction with professor Lecolinet: Lab Statecharts

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## 1 Overview

This document outlines the design choices made while implementing the state machine for a microwave oven's control panel in Qt. All questions from the assignment have been implemented

## 2 Design Choices

### 2.1 State Machine

The system follows a modular approach:

- **Idle State:** Displays the current time, updated every second.
- **Clock Setting:** Uses the dial to set hours and minutes, ensuring the updated time is reflected correctly.
- **Setup States:** Power, Mode, and Defrost each lead to a duration-setting step before cooking starts.
- **Cooking:** Defaults to 60 seconds if started from Idle. Clicking Start during cooking adds 60 seconds.

### 2.2 Dial Behavior

A single QDial is repurposed for different settings based on context, improving efficiency. The UI updates dynamically as the dial value changes.

### 2.3 Clock Updates

An idle clock timer ensures continuous time updates. When modified via the Clock button, changes persist correctly.

## 3 Conclusion

The implementation ensures an intuitive, well-structured control panel with a functional state machine and a responsive UI.