UXDG705: THERMOSTAT DESIGN - Spring 2024

Prof. Ascanio Colonna di Paliano

User Experience (UX) Design

Project Name: THERMOSTAT DESIGN - High-end and Innovative

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Problem space: The existing Google Nest Thermostat and its mobile app, while functional, lacked intuitive usability, cohesive visual identity, and transparency in key functions such as scheduling and energy usage. Users often experienced friction while navigating complex tasks like modifying temperature schedules or understanding energy consumption. The disconnect between the app and thermostat interfaces added to the cognitive load, creating a fragmented experience and increasing dependency on customer support. This highlighted a need for a unified, intelligent, and emotionally resonant interface that could streamline interaction, increase trust in automation, and enhance user engagement.

Solution: Our team reimagined the Nest Thermostat and mobile app through a unified, high-end design direction rooted in intuitive interaction, visual clarity, and system scalability. We developed a refined interface that simplifies temperature control, integrates dynamic scheduling, and promotes energy transparency through interactive graphs and Eco View guidance. Key innovations included a responsive globe component for temperature setting, drag-based scheduling on a timeline, and consistent UI patterns across devices to reduce the learning curve. The final deliverables included a polished design system, mid-to-high fidelity prototypes, and user-tested interactions that made the experience feel modern, fluid, and empowering.

Process: Our 10-week design process was structured into four iterative phases:

- **Phase 1: Visual & Strategic Foundation**

  We defined a design language inspired by modern, minimal aesthetics, supported by moodboards, color theory, and type studies. This laid the

groundwork for a cohesive tone and visual system.

- **Phase 2: Concept Development**

  Interaction models and wireframes were developed for both app and thermostat. We conducted A/B testing and usability validations early to inform our direction.

- **Phase 3: Systemization & Prototyping**

  We built a comprehensive design system—color palette, typography, grids, and components—and created interactive wireflows in Figma, ensuring clarity in user flows and edge cases.

- **Phase 4: Testing & Refinement**

  We tested with 10 users via SUS surveys, interviews, and task observations.

  Insights from real behavior drove refinements in visual hierarchy, feedback loops, and overall usability.

Each phase emphasized iterative design, user validation, and cross-platform consistency—leading to a robust, human-centered redesign of the Nest ecosystem.