

Thermostats Home Energy Readings

Research Assessment



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EXECUTIVE SUMMARY

The goals and objectives our stakeholders have proposed, we have created a set priority based on what the research team can accomplish through user interviews.

This analysis performed by the entire user research team we had access in the following:

- Business goals
 - Research objectives and methods
 - Data analysis and synthesis
-



BUSINESS GOALS

The project goal is to focus on home thermostat and its sleep comfort preferences.

- Engage proper maintenance
- Cost savings benefits
- Regulate proper temperature by seasons
- Sleep patterns to better health
- A programmable thermostat
- Controls on app devices

May consider lowering the thermostat at night while you sleep and efficient cost savings.

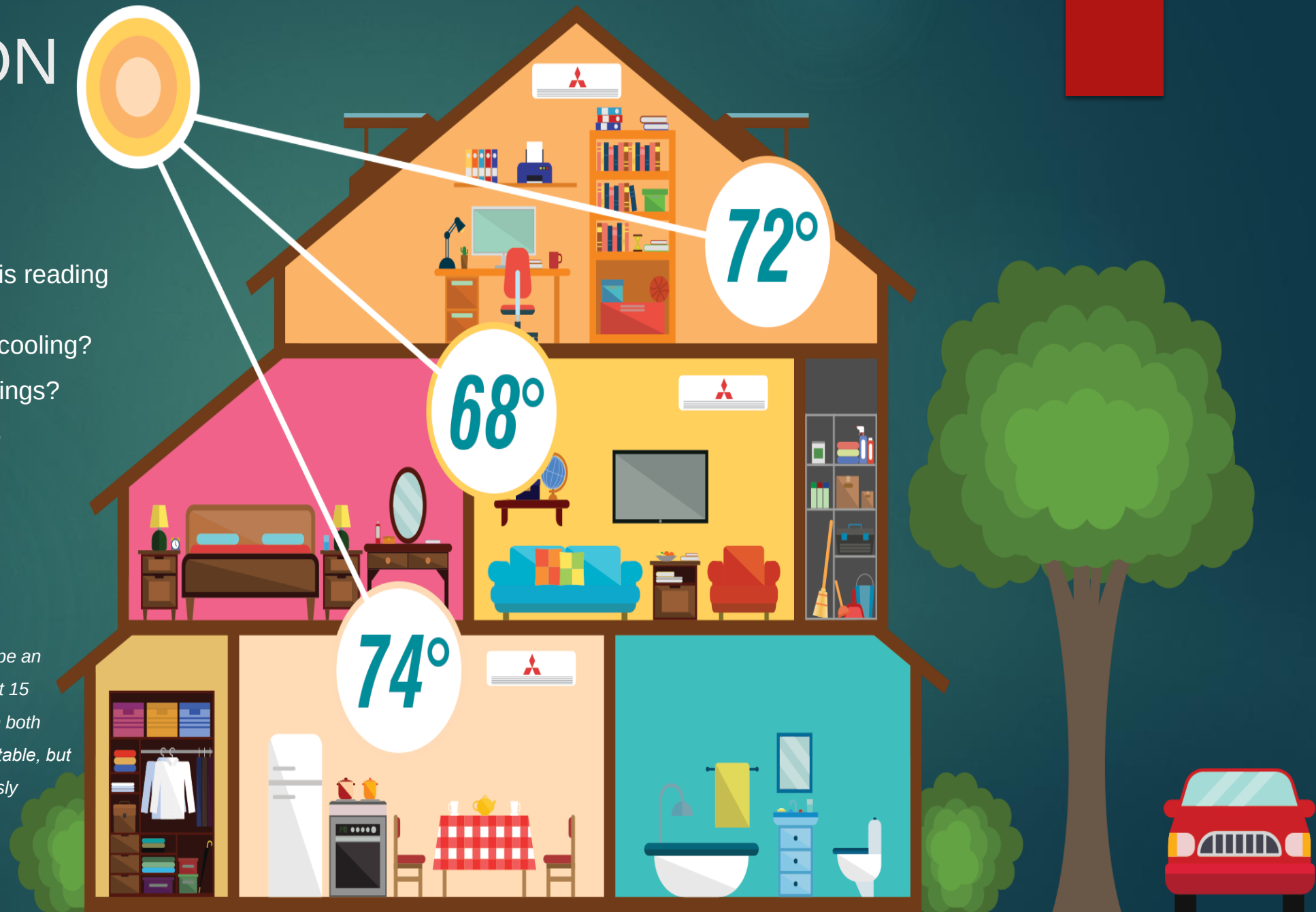


OBSERVATION DATA

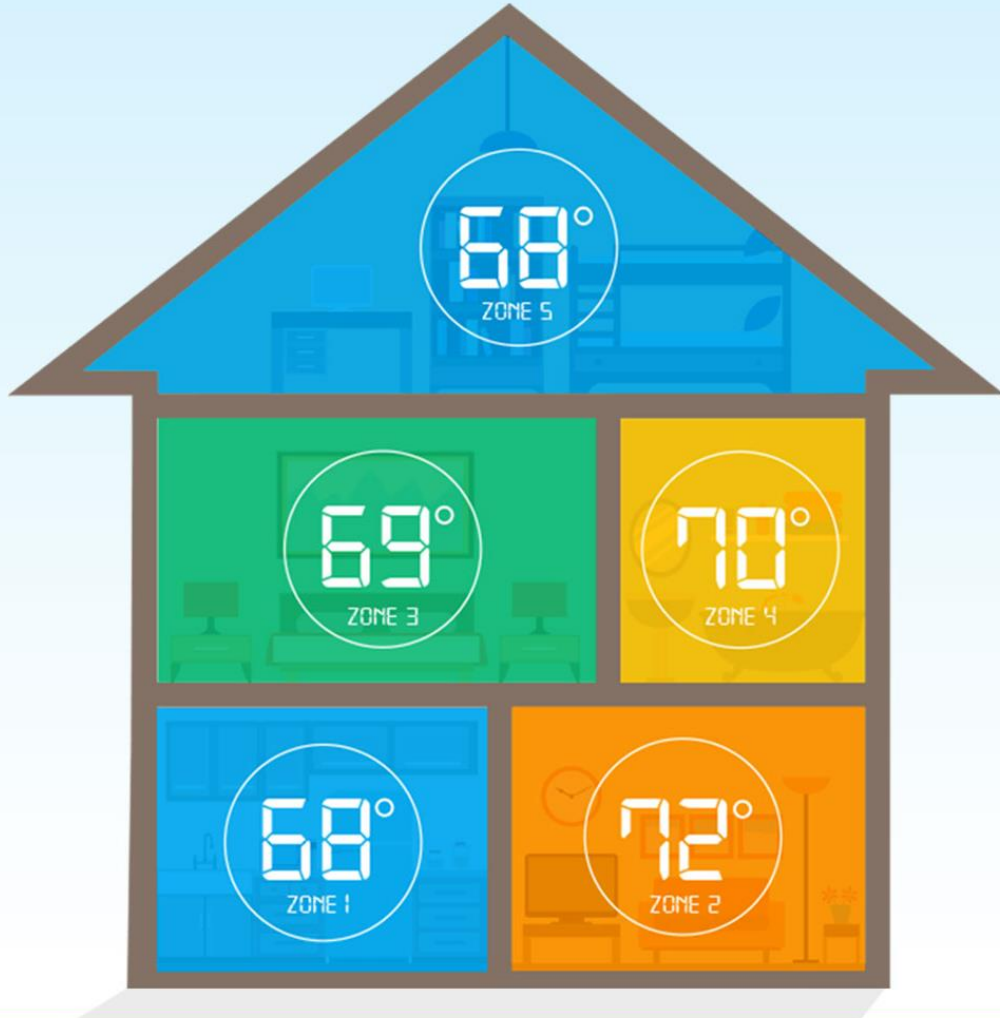
- How do I know if my thermostat is reading the correct temperature?
- What ways to save on heating / cooling?
- Which device has accurate readings?
- Maintenance / solutions observe

Tip:

To do so, locate your home's **thermostat** and tape an **accurate** thermometer on the wall next to it. Wait 15 minutes and **check the temperature reading** on both devices. A variance of +/- 3°F is generally acceptable, but anything outside **that** range means your previously **accurate thermostat** may require service.



WHY ARE SOME ROOMS COLDER THAN OTHERS?



RESEARCH OBJECTIVES / METHODS

PARTICIPANTS:

Two homeowners were recruited for this research. A third-party service recruited the participants and paid \$50 for participating in the interviews.

Questionnaire Checklist:

- How do you know if your Thermostat is Bad?
- Does your thermostat have power or is it unresponsive?
- Does your heater or A/C won't turn ON?
- Is your A/C or heater runs constantly and won't turn OFF?
- Are all of the room(s) temperature match?
- Is your thermostat on the right setting?

PARTICIPANTS

Personas Overall Comparison - Sheet

Google doc:

<https://docs.google.com/spreadsheets/d/1OfqQtj6otFFdzIPPIIRYQPdDQTtlrJAjPHfYY-w7Pkw/edit#gid=0>



PARTICIPANT - 1

David, Male, 56yr old – Homeowner for 20yrs

Preference to sleep in cooler temperature room

Video: (due to technical difficulty – inconclusive)

https://video.kent.edu/media/David_Participant+1_Home+Temperature+Settings/1_6pjvmwqf

- Chicago, IL
- 20-yrs; Police Officer



PARTICIPANT - 2

Cindy, Female, 49yr old – Homeowner for 7yrs.

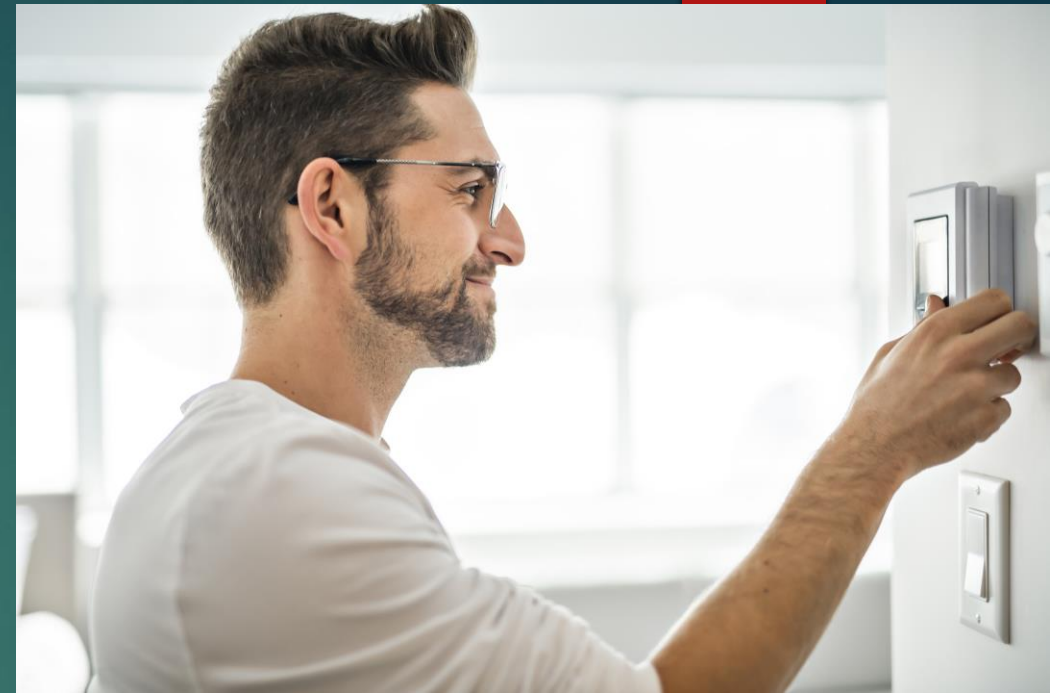
Preference to have ALL rooms above average.

Prefers much warmer temperature room is ideal to sleep.

Video: (due to technical difficulty – inconclusive)

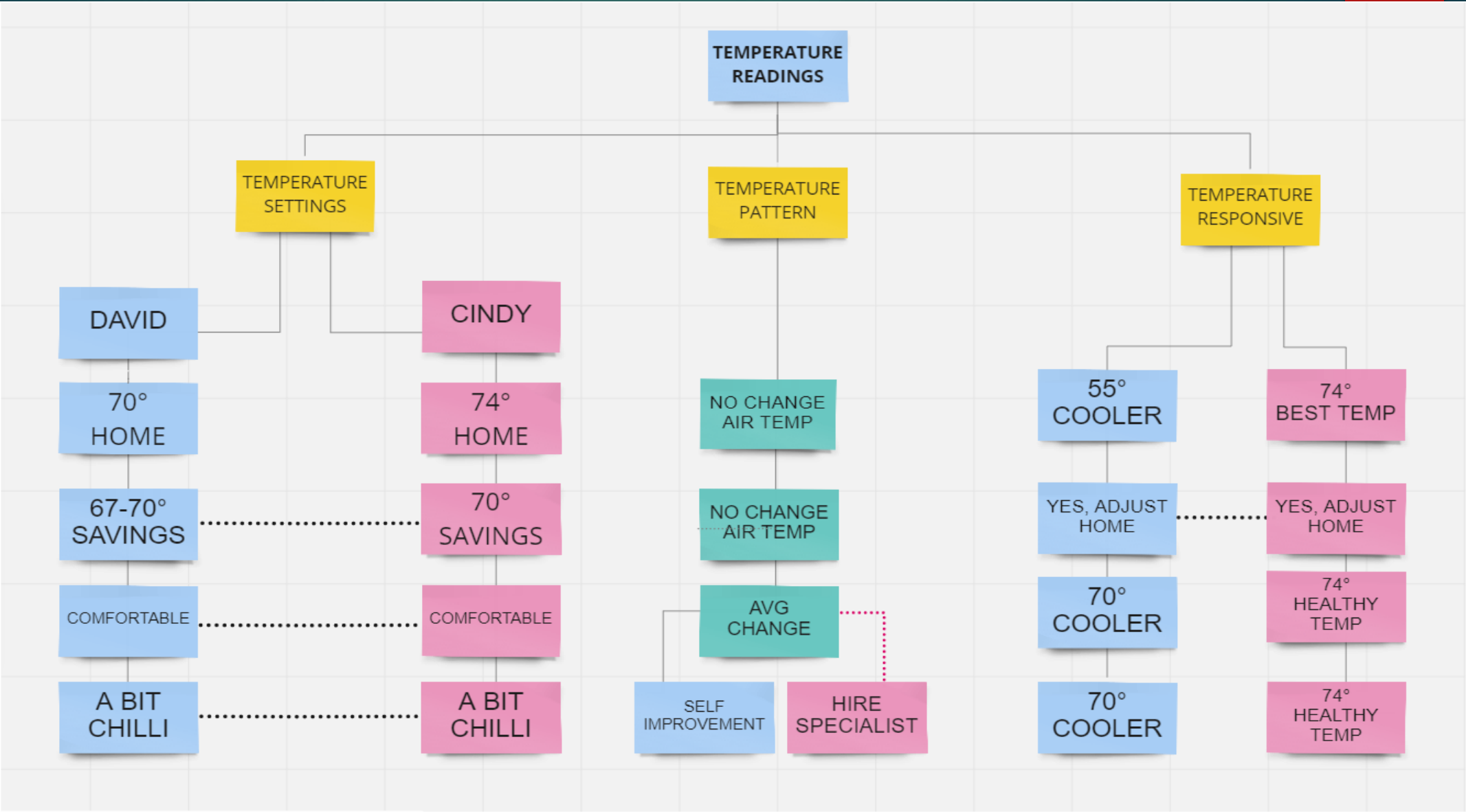
https://video.kent.edu/media/Cindy-Home+Thermostats+Readings/1_dnldjfvb

- Chicago, IL
- 14-yrs; Banker



Mapping Journey

<https://miro.com/welcome/44yoO5UIE1FblqTaryD3PW3FiudR6CuCwu5lubWjVHUZnYMTE96Lprhbf5raKaXA>



THEME QUESTIONNAIRES

- What temperature should my house be?
- Do you know the cost savings advantage?
- How do you know if the thermostat is reading correctly?
- How do you know if you need a new thermostat?
- How do you know when your thermostat is bad in your house?
- How do you know if my central heating thermostat is working?
- How often do you replace a home thermostat?
- Do you know how to fix an unresponsive thermostat?
- What is the best room temperature to sleep at night?
- Is 78 degree too hot for a house?
- What is the healthiest temperature to keep your house?
- Is it unhealthy to sleep in a hot room?
- How often do you adjust your room temperature?



RESEARCH OBJECTIVES / METHODS

A mixed method approach for this user research project, combining both moderated in person interviews and a moderated usability testing with predefined tasks.

Objective Goals:

- Engage proper maintenance
- Cost savings benefits
- Regulate proper temperature by seasons
- Sleep patterns to better health
- A programmable thermostat
- Controls on app devices
- Collect data

Scope:

- Prep questionnaires / moderator's script
- Schedule 2-participants
- One-on-one recorded live sessions

Sum of Data:

- Create a comparison chart
- Overall analysis result
- Conclude final report



DATA ANALYSIS & SYNTHESIS RESULTS

Home's ideal temperature for your heating and cooling system should provide convenience and comfort to your indoor environment. Thermostat settings for both comfort and energy savings are important to every homeowner.

One simple solution to managing your heating and cooling system is to adjust your thermostat temperature according to your habits, preferences and the temperature outside. The closer your thermostat setting is to the outside temperature, the more you'll save.



DATA ANALYSIS & SYNTHESIS RESULTS

It is estimated that for every degree higher you set your thermostat over 78 degrees Fahrenheit in the summer months, you could save approximately six to eight percent off your home energy bill, per degree.

Typically, adjusting temperatures 5 – 8 degrees (down in winter, up in summer) can help save energy if you are going to be away from home for several hours.

YOUR HOME TEMPERATURE'S EFFECT ON SLEEP



OVERALL ANALYSIS RESULT

Tips to consider:

- Install your thermostat away from heating or cooling registers, appliances, etc.
- Keep the thermostat set at energy-saving temperatures for long periods of time
- Set the “hold” button at a constant energy-saving temperature when going
- Change your batteries each year if your programmable thermostat runs on batteries. Some units will indicate when batteries must be changed.



CONCLUDE FINAL REPORT

So, keeping your home's temperature slightly higher and using the best settings for spring and summer can ultimately help save you money.

If the thermostat is on an external wall, it will register the temperature on the wall. This will be much warmer, or colder, than the average temperature in the home.

Being in a comfortable environment is essential for healthy **sleep**.

