

Collection Exploration: From Sketch to Product

by Sasha Solovyeva

In my collection exploration, I will be looking at ways of implementing AR to activate the [From Sketch to Product](#) collection of the Cooper Hewitt Smithsonian Design Museum.

A note on the ideation process

I was originally planning to formulate my collection activation proposal in regard to two other collections of the Cooper Hewitt museum - Botanical Lesson and Botanical Explorations that are centered around the intersection of biology and design. I was going to look at how patterns, models, and objects that occur in nature inspire design approaches. I was interested in building an AR experience that would show natural habitats of botanical inspirations for the exhibits and/or excerpts from Smithsonian Libraries encyclopedia to provide background information on corresponding exhibits. For more detail on my original proposal, please refer to my blog post [here](#).

However, I have realized there was not enough web-accessible content for me to work from, and that the resources that were available would not work well in an AR context while keeping it specific to this medium. The remainder of this proposal will be dedicated to my current collection of choice, From Sketch to Product.

Background Information on the Museum

The Cooper Hewitt Smithsonian Design Museum features objects from a diverse set of design directions, approaches and time periods. For instance, collection highlights that are currently featured on their [collection webpage](#) are [Angry Graphics](#) (images in opposition to Reagan's and Bush's administrations), [20th-21st century Architectural Drawings](#), or [Lace from the Greenleaf collection](#). Cooper Hewitt positions itself as an interdisciplinary institution, and tries integrating knowledge from as many applicable disciplines as possible within an exhibition, often doing so with the help of digital media technology. Rather well-known for contemporary approaches to its curatorial process, the museum has tried many different digital mediation tools, such as:

- Ability to sort collections based on the exhibits' colors
- [“Pens”](#) as a visitor technology that lets highlight and save museum exhibits one likes to their personalized link
- Extension of the highlighting/saving ability to the collections presented online by letting the user press a Plus sign to save an exhibit they liked to their account
- Timelines (such as [here](#)) of a lifespan of an object documenting when it was created,

- gifted to the museum, and every time it was somehow documented or photographed
- Many more promotional digital use-cases, such as creating Zoom backgrounds inspired by museum objects, etc.

Background Information on the Collection

From Sketch to Product is an online-only collection that focuses not on the **end product** of an artistic/ engineering/design process but instead on the **process itself**. For example, it shows early sketches of a product or different objects that started as the same idea but got taken by their creators in completely different directions.

This collection provides an interesting perspective on the creative process, letting the outside observer see how long the product was being ideated and prototyped, and what parts of the idea were omitted, changed or added later in the process. It is relevant to note that some of the objects of this collection are currently on view in the Cooper Hewitt Museum’s physical space as **parts of other collections**. This online catalogue aggregates objects from many different departments of the museum as long as there is some documentation on their creation process.

Available media

Cooper Hewitt museum’s Collection Highlights From Sketch to Product contains images (photographs or scans) of relevant objects. As mentioned above, there

are primary colors and timelines mentioned for each object; depending on the amount of documentation on an object, there is also further information on its specifications, i.e. dimensions, inscriptions, accession history, etc. This information was helpful for my prototyping process to correctly present AR objects within the experience. Unfortunately, there are no 3D models which made it a little harder to present the AR experience as if it was happening in the actual museum space.

AR-App Proposal / Design Processes: Exploration

When the user the scans a QR code, a set of arrows appears to:

- Connect related objects (existing in the physical space) to one another
- Show stages of prototyping by overlaying corresponding images/sketches through AR

Why Augmented Reality?

For this app, AR allows to draw connections between objects at different stages of their development by making the user navigate around the branches of the “tree” (refer to illustration 1) and see what changes were made in-between prototyping stages, while having the physical object(s) as a reference in front of the user.

This would be an app a user can download on their

personal device; they would be able to use it as long as their device can switch to a landscape mode. The current xD prototype was designed for iPhone X.

Core features:

- Scanning the QR code of an object
- Navigation around the “tree” (in a 3D space), and reading the museum’s commentary that demonstrates and explains transitions in-between development stages
- Question mark UI component that allows to review the introduction to experience and instructions
- To keep with the current technology the Cooper Hewitt museum uses as mentioned in

the Background part of this proposal, I have decided to make labels with QR codes still contain the Cooper Hewitt-branded plus sign that allows to use their already-existing “Pen”

Navigation of the experience / how it starts and how it ends

1. The user scans a QR code of an object they are interested in
2. They are then prompted to rotate their device into a Landscape mode. The experience does not start until they do so.
3. When they are looking at the “branches” of an object, they may exit out of the experience at any point by clicking on an x-button UI

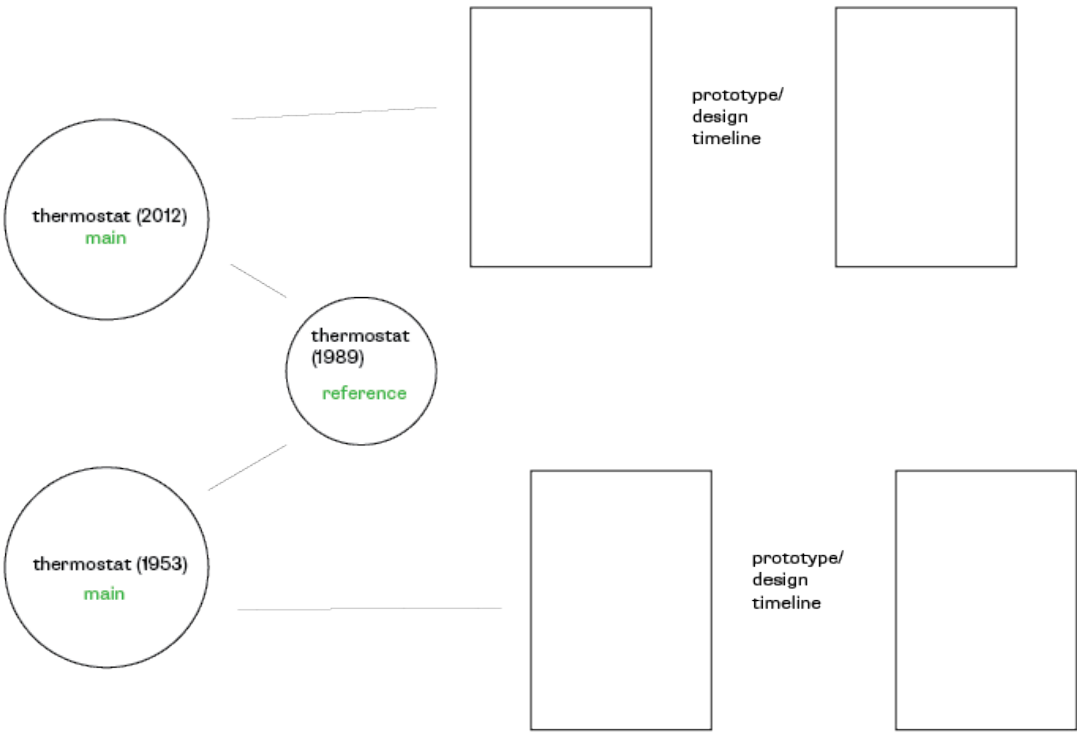


Illustration 1: the “tree”

component. The exit out of the experience is implemented in this way (and not in a way that would make them return to an object they are exploring before closing the information about it) is so that the user can rapidly switch to another object in a physical space if they see something that catches their attention while they are interacting with the “branches”.

4. They can click the question mark UI component at any point of the experience.



Illustration 2: the front desk

Instructions for the user

Cooper Hewitt Smithsonian Design museum boasts a collection of not only numerous fascinating design products and elements from around the world, but also documentation on artists' process of bringing these products to life. Sketches, handwritten ideas that came into artists' minds while looking at references, exploratory schemes - these are all a part of creating and designing for many designers, artists, engineers, and other makers out there.

This app allows you to get a glimpse into these processes: how some of the exhibits could have looked, how they were initiated and what inspired the changes made along the way. Just scan a QR code that says “Learn about production” next to an exhibit to see a fascinating web of decisions that brings design innovations to life.

How do visitors learn about downloading the app and joining the experience?

Even though I have originally considered including such prompt / short advertisement text into my prototype, I have realized that the long text would be bulky and efficient on a small wall label.

Therefore, I propose that a poster advertising the *Design Processes: Exploration* app is hanged next to museum's front desk (refer to the Illustration 2).

Notes on the prototype

To demonstrate the experience a visitor would have

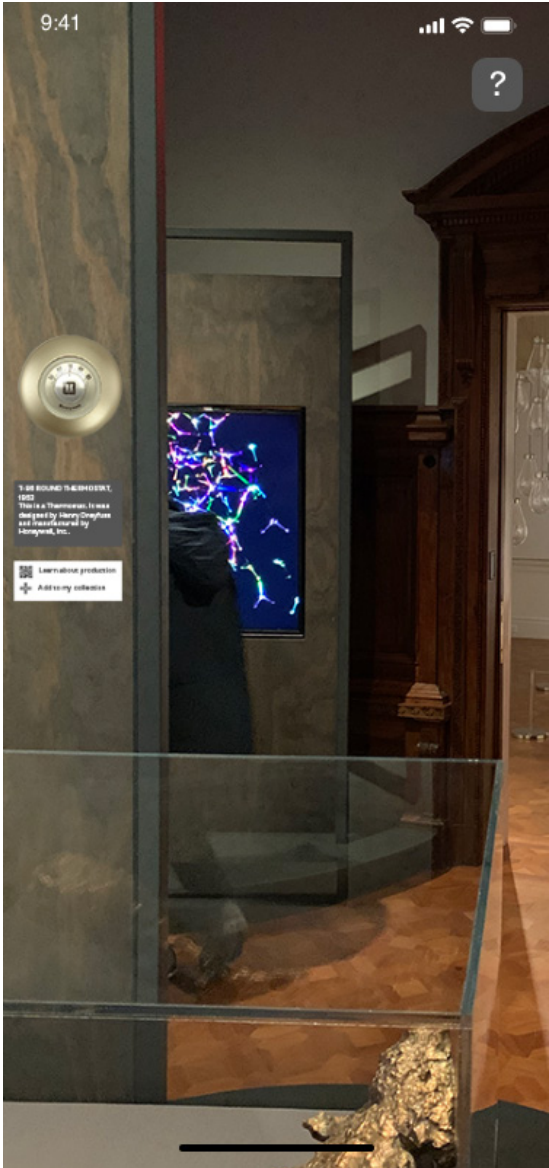
while using the AR app, I have built a visual prototype in Adobe Xd. For the purposes of the prototype, I have chosen a singular collection exhibit from the From Sketch to Product catalogue - a [thermostat](#). Even though it is by no means the most well-known or impressive exhibit of this collection, it was a perfect object to demonstrate the possibilities of AR when it comes to showing connections between objects and demonstrating complicated webs of connections. In documentation of From Sketch to Product catalogue, there was a lot of information about the creator's thinking and reasoning between every stage of production of the thermostat.

Furthemore, the catalogue features examples of designs of thermostats through the years from 1953 to 2012, which allows to show production processes not only within singular artist's work but also within the same product through the years of changing paradigms and evolving technology.

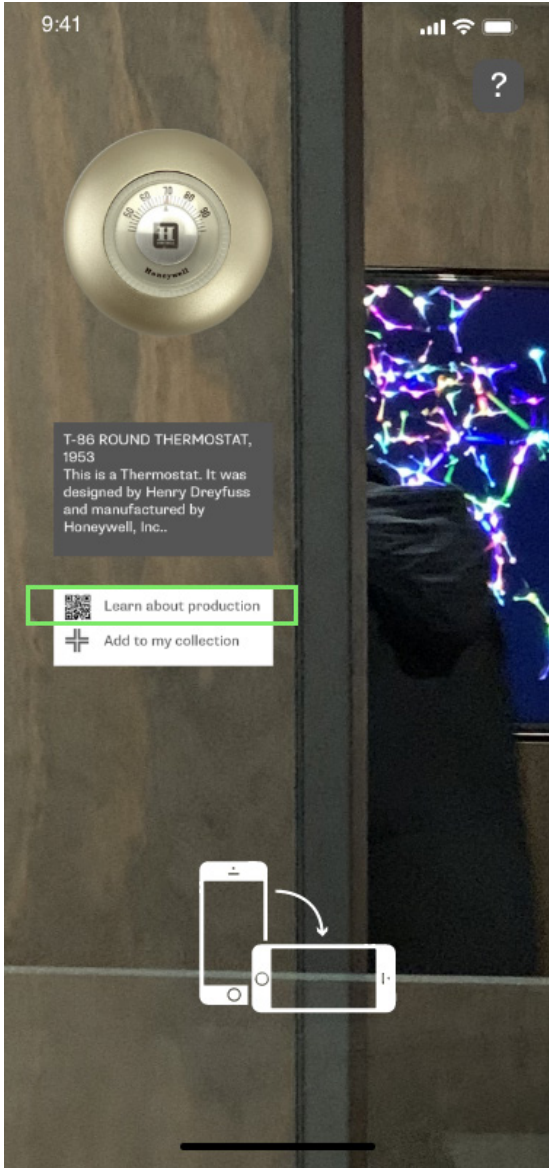
Trajectories for further development

- Positioning the “tree” objects in a spherical rather than flat configuration to allow all iterations and elements be seen from one vantage point instead of making the user walk around the space.
- Establishing more complicated connections between objects' sketches, i.e. showing how the first sketch of the 1953 thermostat and the first technical drawing of the 2012 thermostat connect to one another.

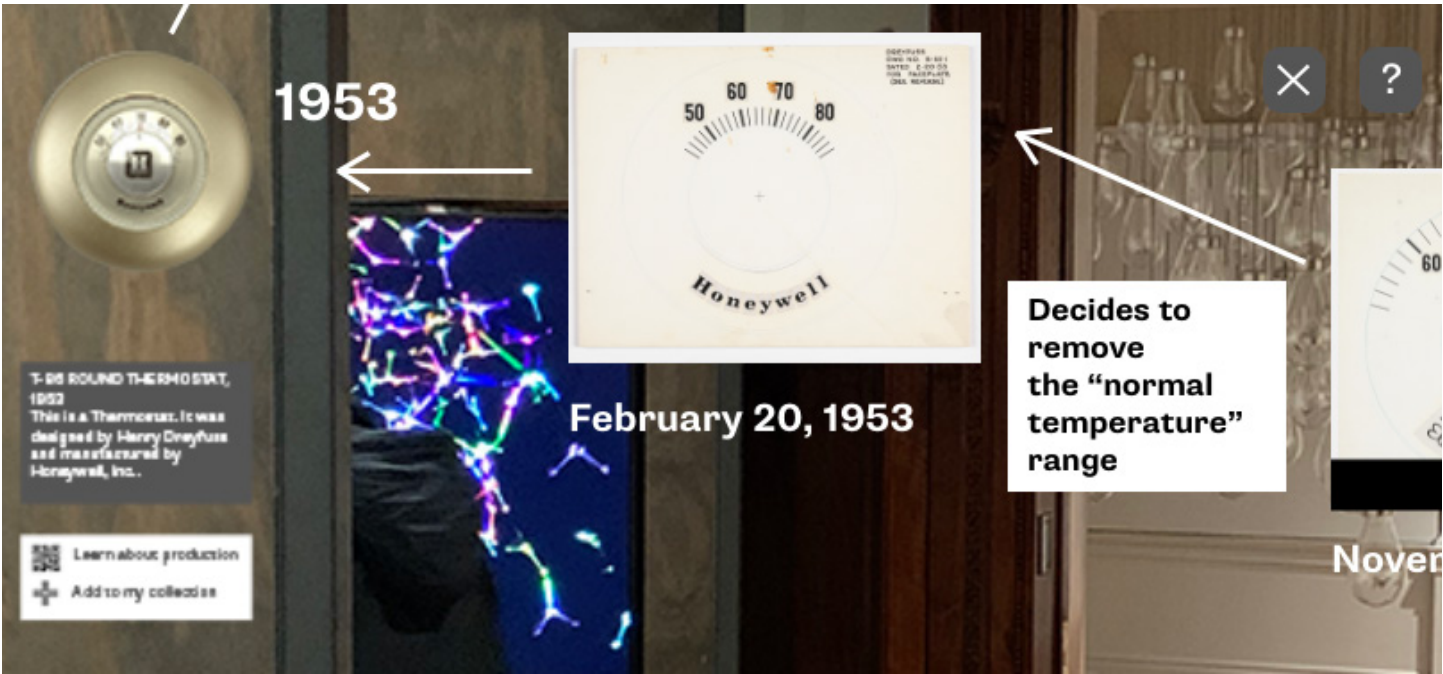
Full experience flow



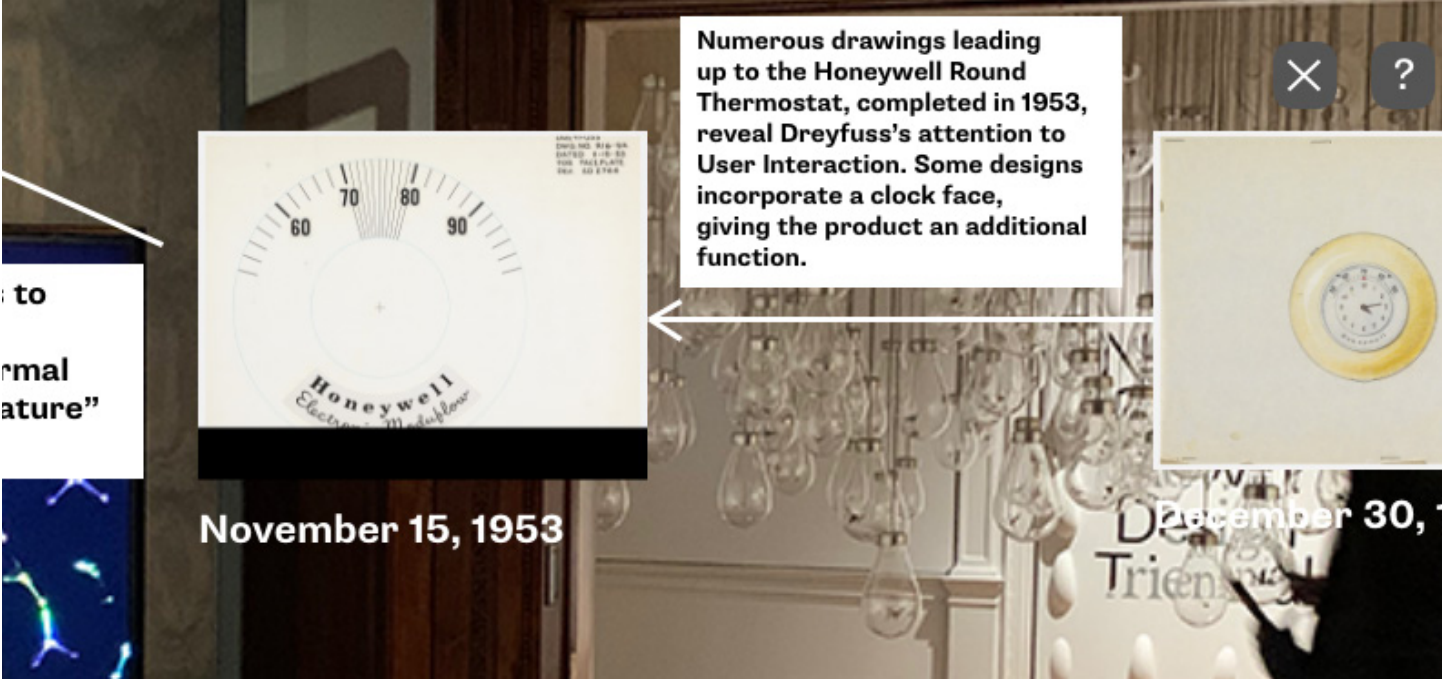
Screen 1: the user spots an exhibit they are interested in, and it has a “Learn about production” QR-code.



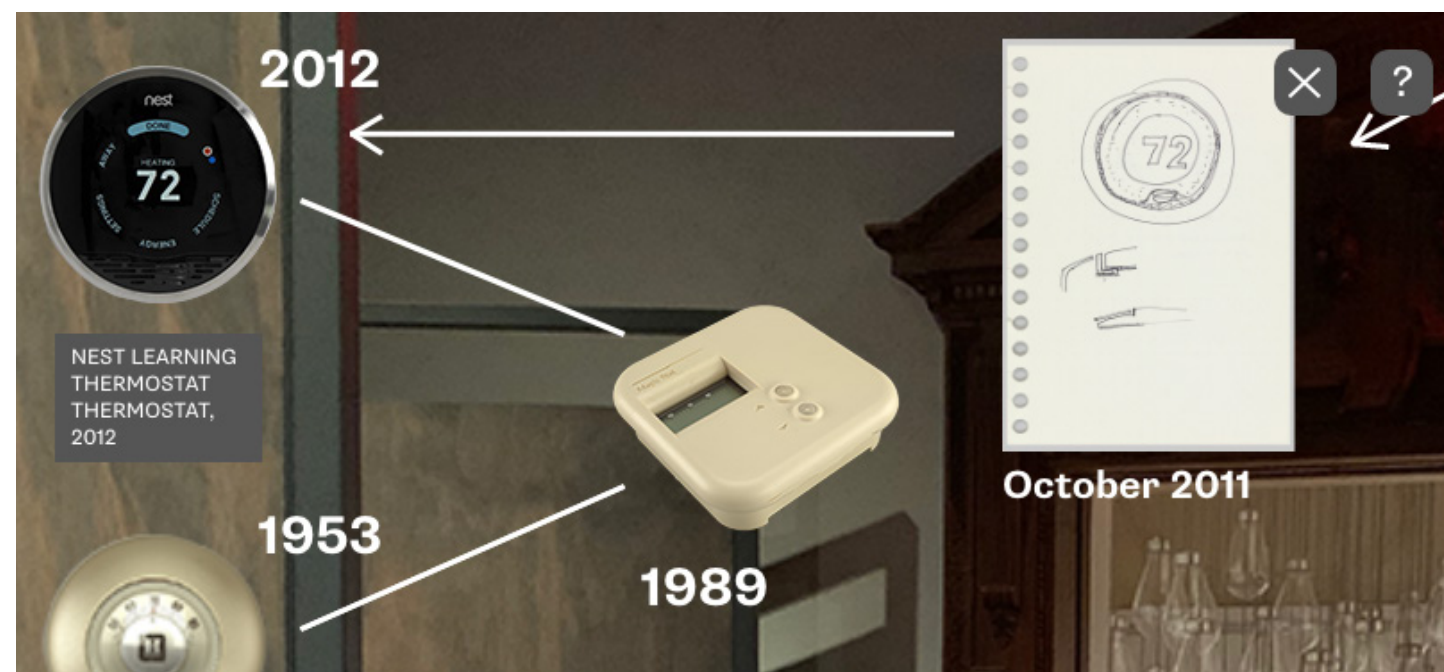
Screen 2: the user scans a QR code and is prompted to rotate their phone from portrait to landscape mode.



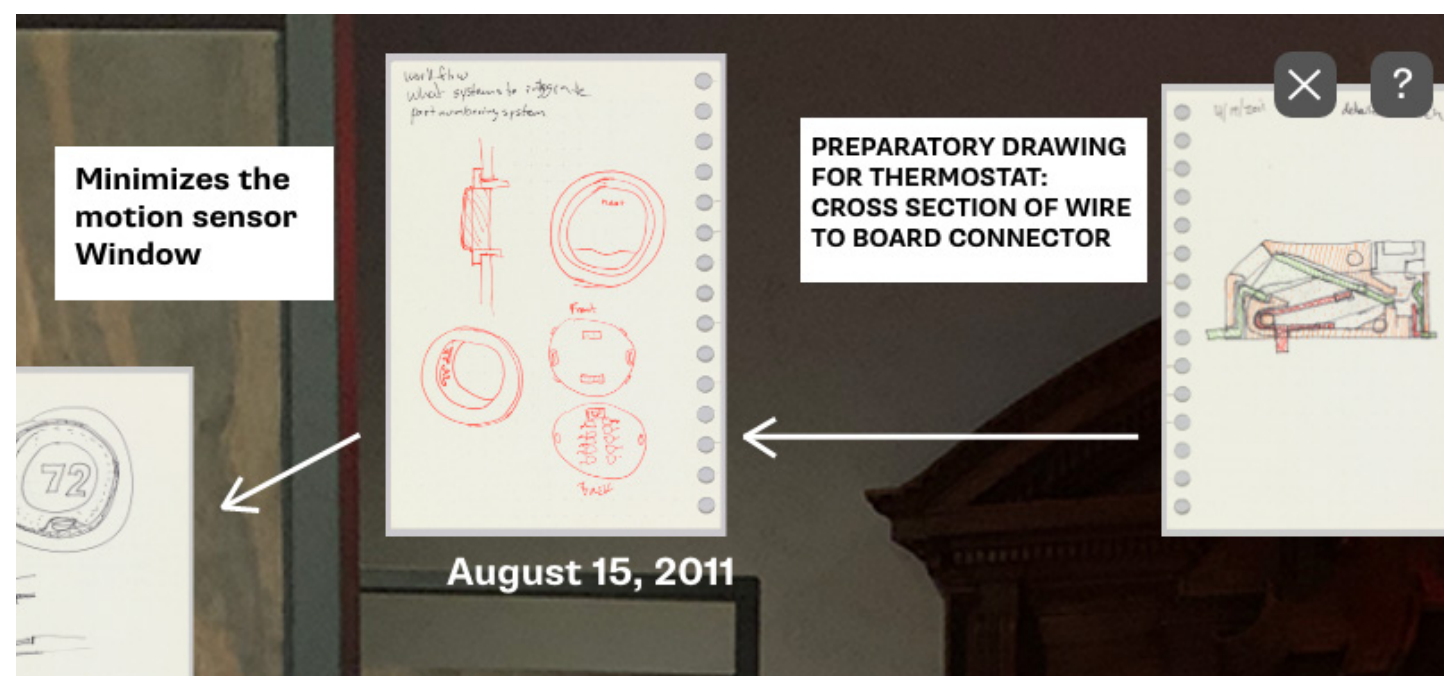
Screen 3: the informational overlay appears, denoting relevant dates (to showcase the progress) and demonstrating the previously mentioned sketches and materials.



Screen 4: the user walks around the “tree” to see further information on the development. Note the x-button in the top right that lets them leave the experience at any point.



Screen 5: the user now sees how another thermostat that is also on the wall (the 2012 one) connects to its earlier 1953 version, with an iteration that was developed in-between shown in AR.



Screen 6: the user can now see the timeline of iterations and development for this thermostat as well, which also attracts their attention to how different development processes between two thermostats look.

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Fall 2020, New York University, NYU Berlin
Augmenting the Gallery, Pierre Depaz

All exhibit images and a front desk image belong to the
Cooper Hewitt Smithsonian Design Museum.

The credit for portrait-to-landscape icon goes to
Kelig Le Luron, FR from the Noun Project.

A background image of the museum space used in
the prototype was taken by Sasha Solovyeva during
her visit of the Cooper Hewitt Museum in December
2019. This space has no relation to the thermostat
exhibit and was included for clarity and demonstration
purposes.

Font used for the prototype, illustration and brochure
is Supria Sans, which was chosen because of its similar
visual look to the Cooper Hewitt font.

Prototype assembled in Adobe Xd. The “tree scheme”
created in Adobe Illustrator. All material put together
in Adobe InDesign.