Novel 3D Ways to Influence Design for Accessibility

Charu Pandhi, Hope Turner, Phill Jenkins
IBM Design & Accessibility

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Agenda

- Introduction
- Design Challenge
- 3D Design Exploration
- Insights + Outcomes

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Introduction

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Presenters

Charu Pandhi
IBM Design, Accessibility Leadership Team
Senior Accessibility consultant /Innovator

Hope Turner
IBM CloudPak for Automation,
Senior UX Designer/Researcher

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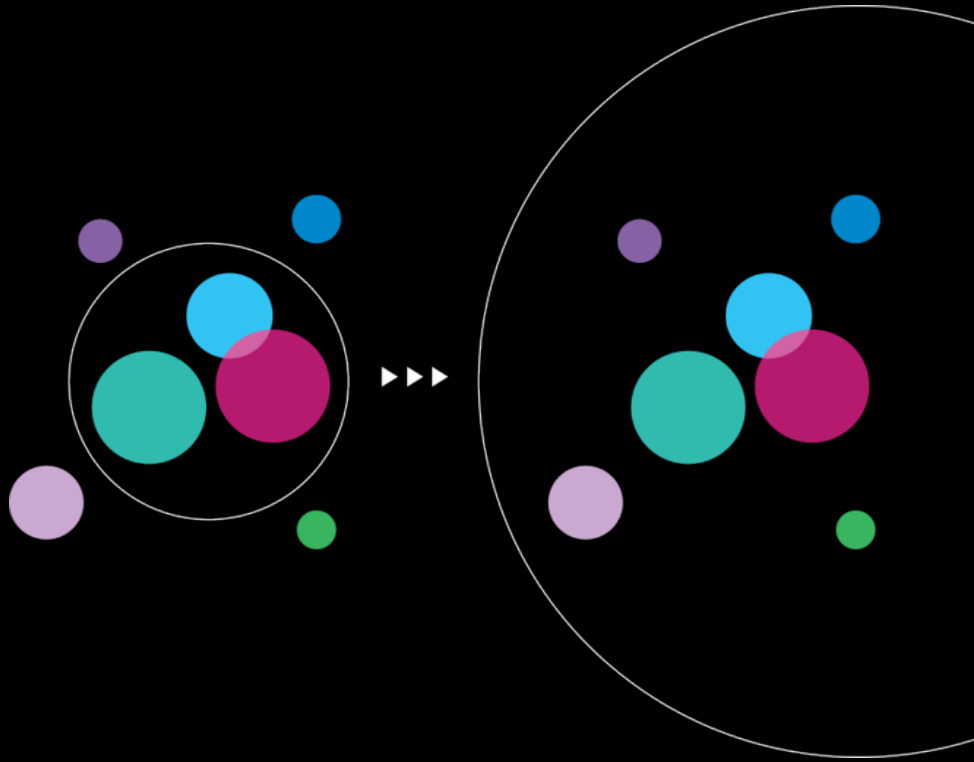
IBM Accessibility Team

At IBM, we have a rich history of working to **ensure people with diverse abilities have equal access** to technology. Our accessibility team is driven to not only to support our business, but to educate and share out knowledge and resources.

In 2019, our accessibility team moved into the IBM Design organization to better partner with our designers to deliver enterprise offerings which are **delightful and inclusive.**

IBM Design

Trained to be empathetic for users in IBM Enterprise Design Thinking, our designers are experimenting with new methods of extending empathy for users with diverse abilities -- and including those users in the design process.



Design Challenge

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Meet Our Designers

Janelle Arita

Steven Raden

Jenny Lanier

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Design Team's Challenge

The design team was working on a project with Randy, a dev manager who is legally blind. Randy uses JAWS, a screen reader, he identified some serious accessibility issues when he evaluated the page.

Witnessing Randy struggling with screen reader, gave them a new perspective to generated ideas of how they might be able to improve their process of working with him.

How can we…

Incorporate accessibility into the design phase?

Enable teammates with visual impairments to provide actionable feedback earlier in the process?

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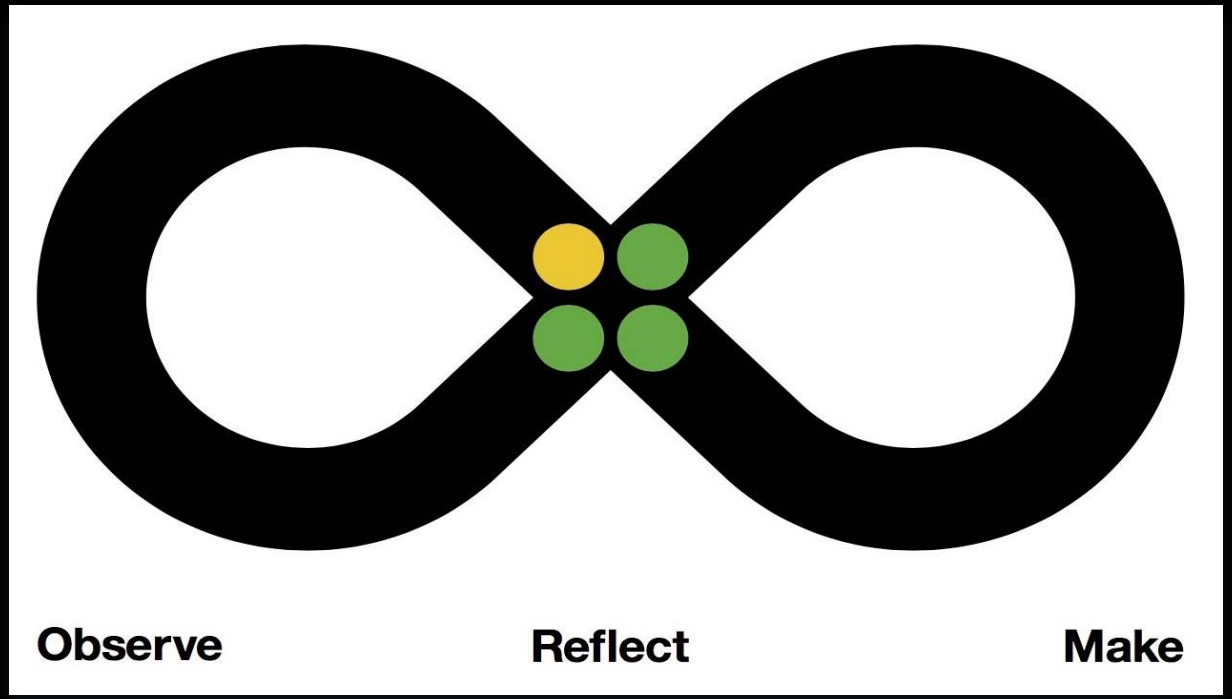
IBM Design Thinking



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Personas

Janelle, Steven and Jenny approached this design challenge as illustrated by the relationships of the following 3 personas…

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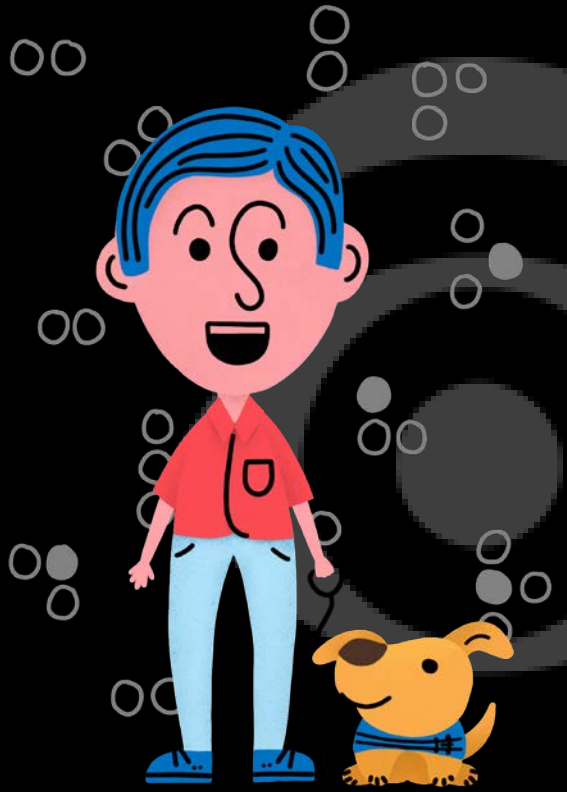
Randy, Dev Manager

- Has a background in web development and works as a development manager at CloudLand, a cloud computing company.
- Lives with vision impairment and is assisted by a guide dog.
- Accessibility advocacy is not his primary responsibility.
- Uses screen readers to give feedback to dev and design teams.



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Pain point...

Randy is unable to give feedback until later stages of development…
meaning his input often goes unaddressed.

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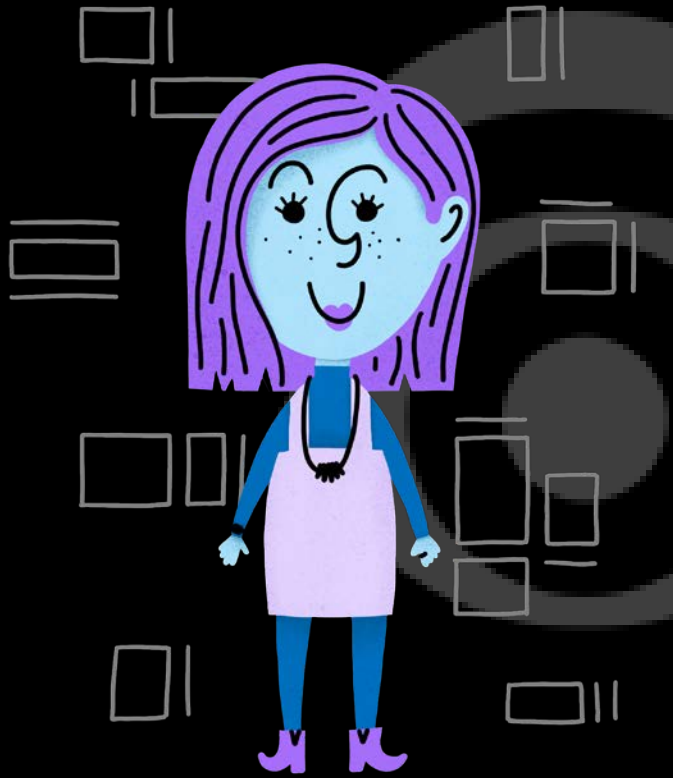
Desi, Designer

- UX designer also works at CloudLand.
- Creates wireframes and Invision interactive prototypes to explain interactions to her development teams.
- Prototypes are tested on a variety of participants, and generally consist of point-and-click interactions.



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Pain point....

Desi cannot get Randy's feedback on accessibility because her designs ***must be coded before he can use a screen reader to evaluate them.***

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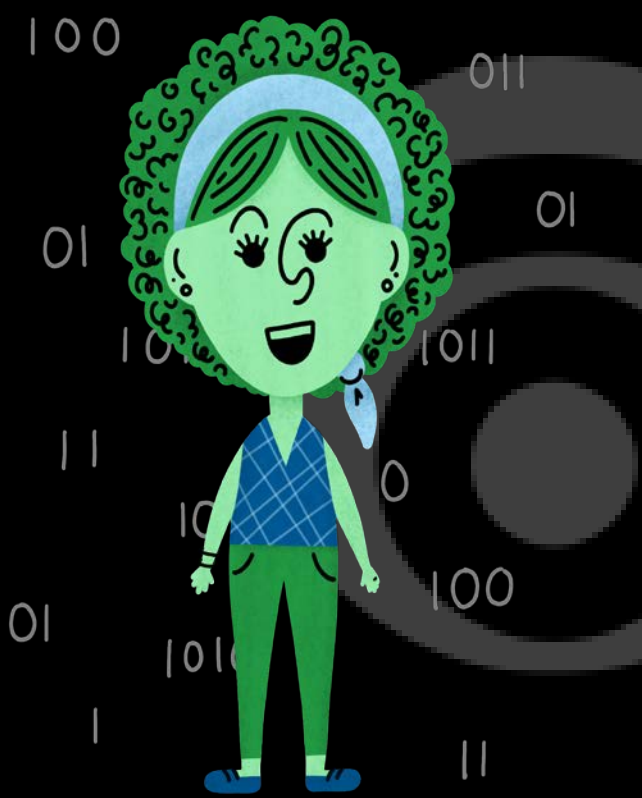
Tonya, Developer

- Front-end developer at CloudLand.
- Collaborates with Desi and the design team to create coded, production-level experiences.
- Primary concerns are focused on the product release being functional and accurate to designs.



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Paint point...

Tonya can **spend significant time refactoring designs** to account for accessibility issues.

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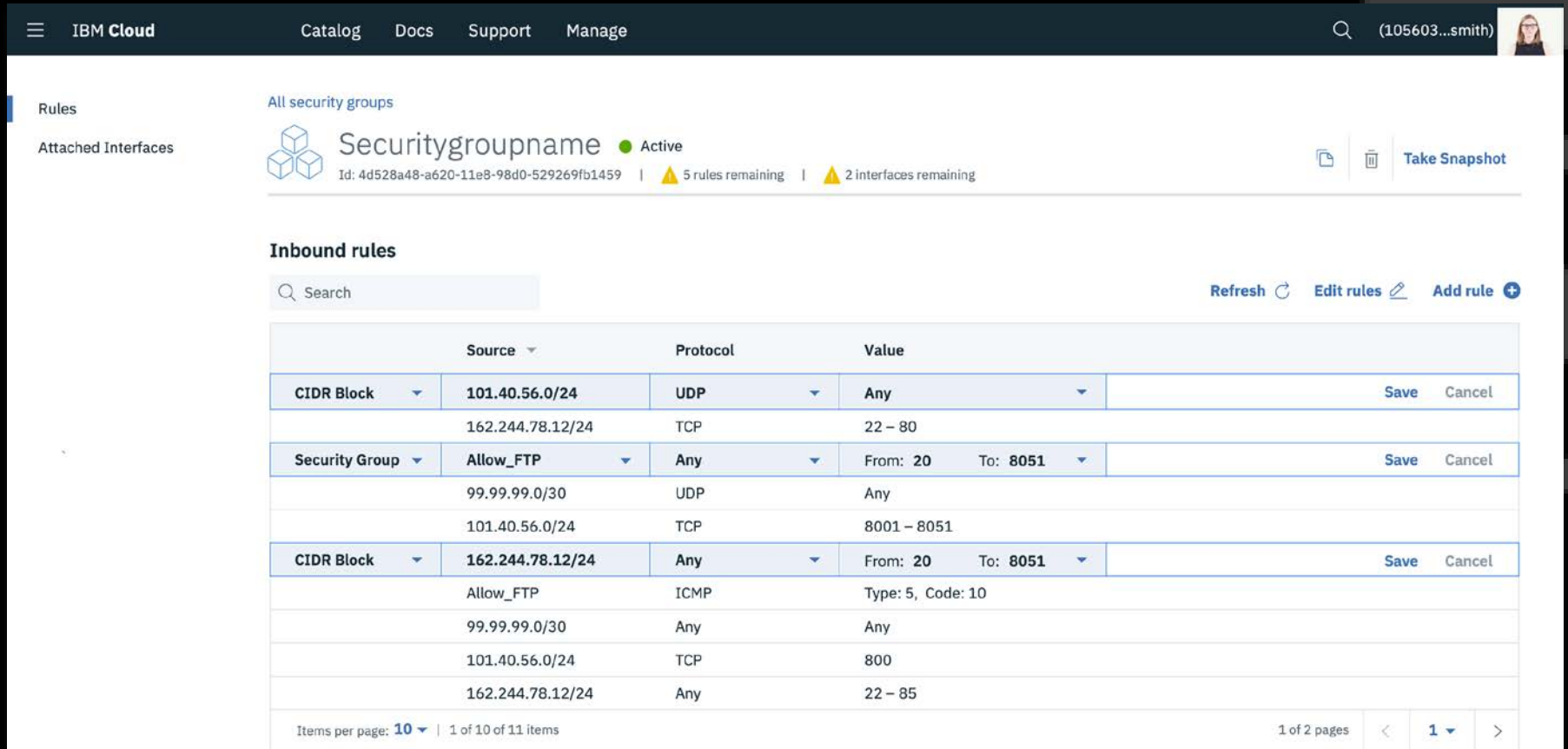
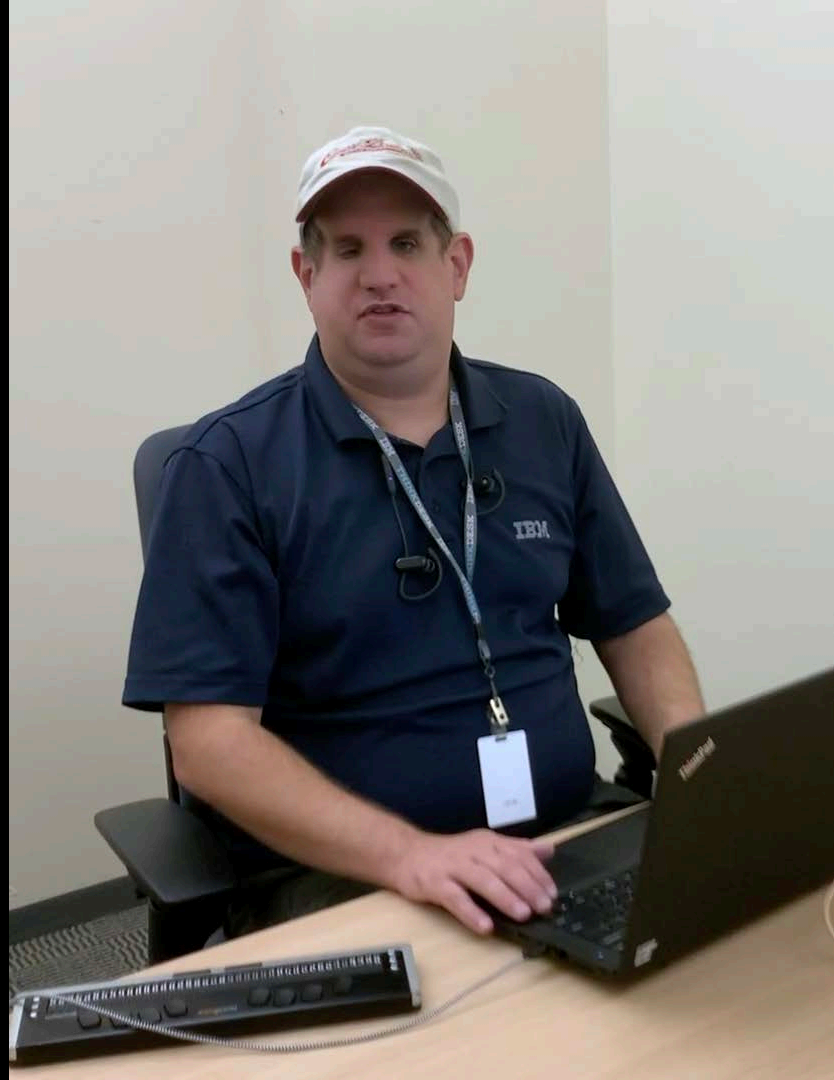
As-Is Use Case



Goal...

For Randy to provide early feedback by engaging with wireframes **before they ever become live code.**



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3D Exploration

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Phase 1:
Material Exploration

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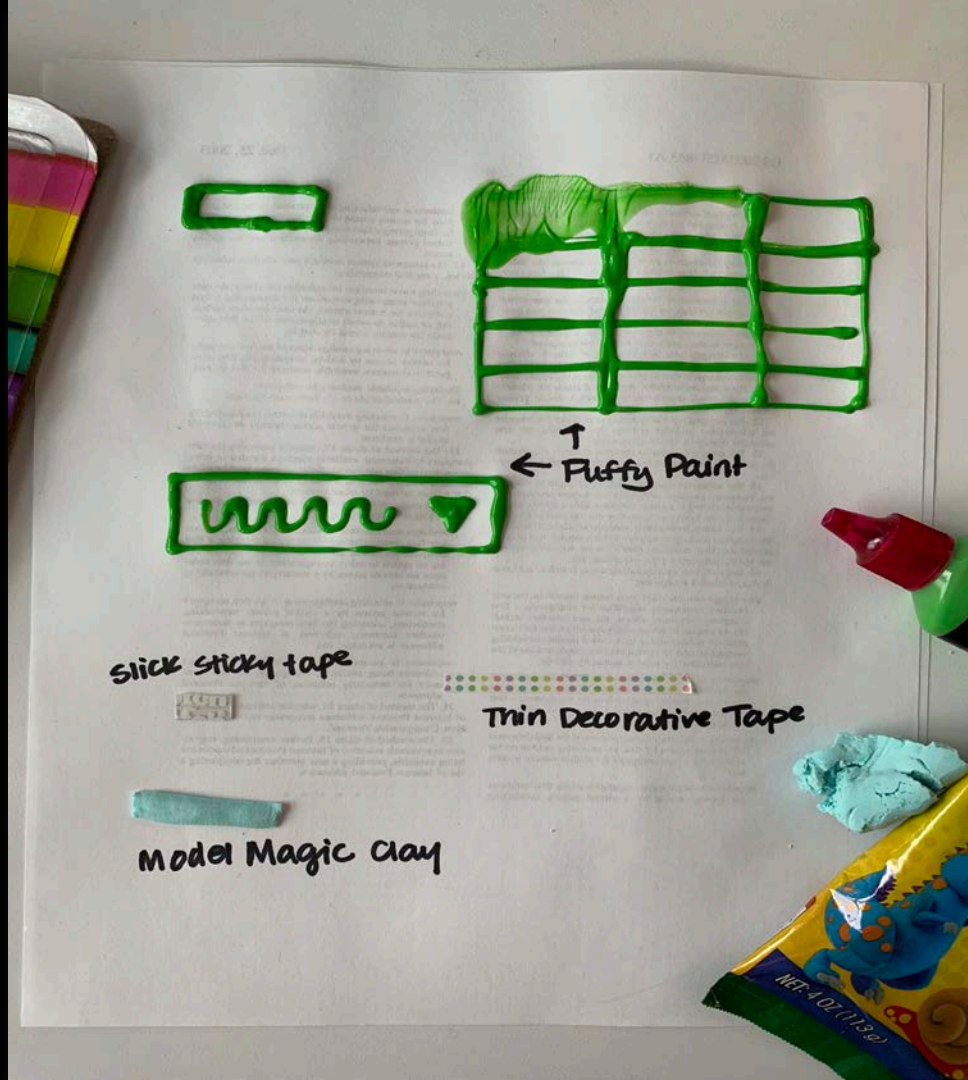
Needs

- Easy to work with
- Reusable, durable and inexpensive
- Randy could identify



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Things Ruled Out

- Extrusion and 3D printers
- Braille embosser

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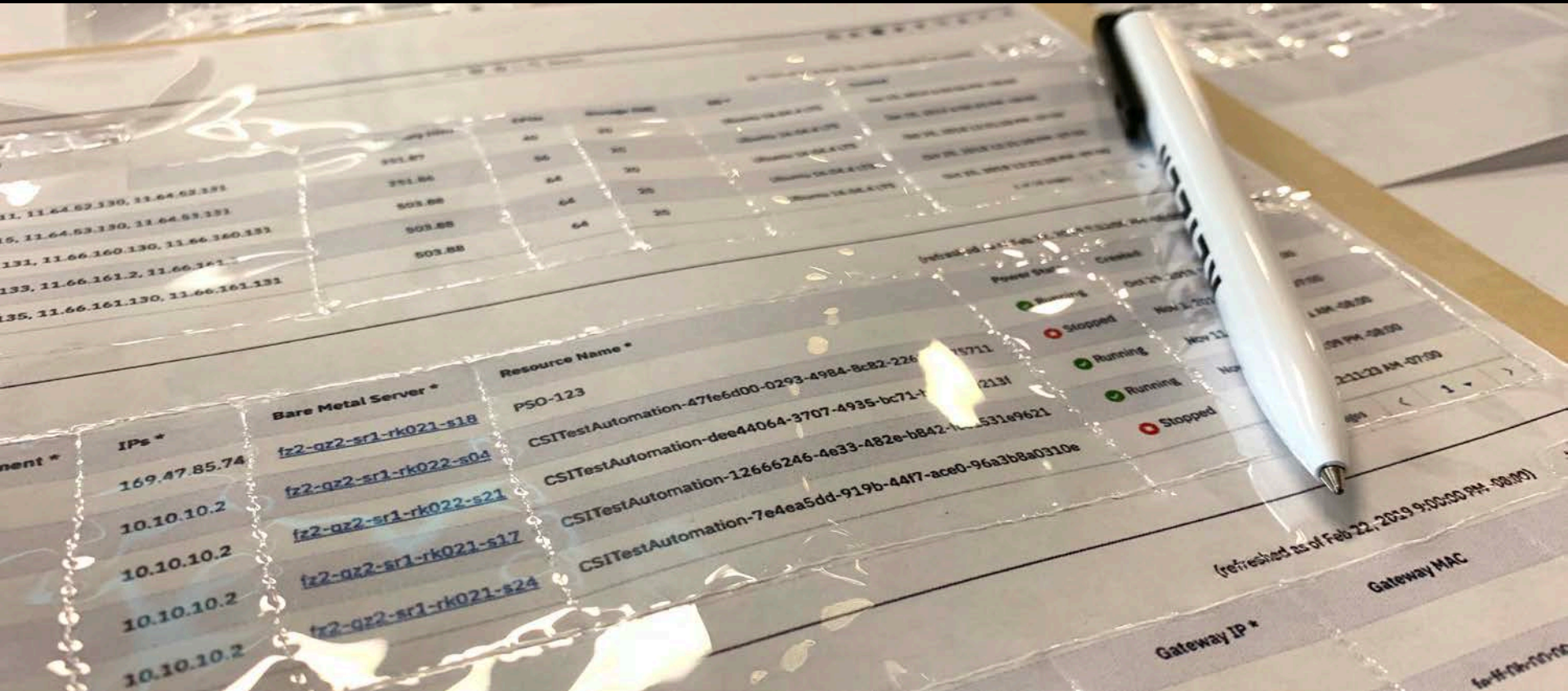
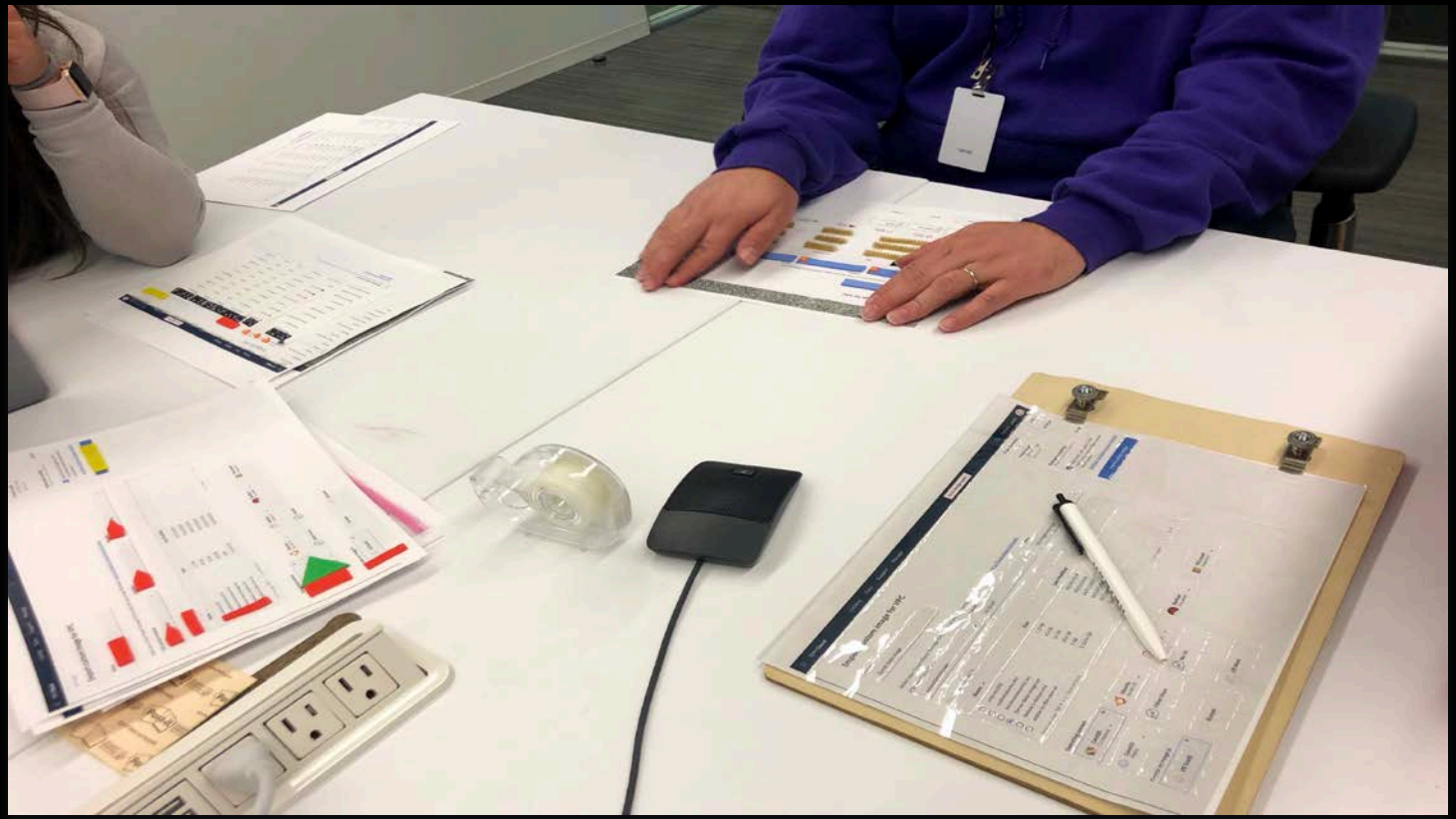
Raised Line Drawing Kit



Iterating With Randy



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Phase 2
Pattern Library

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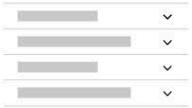
Accordion



Breadcrumb

Crumb 1 / Crumb 2 / Crumb 3

Button

Checkbox

Multiselect

Notification

Number input

Code snippet

Content switcher

Data table

Date picker

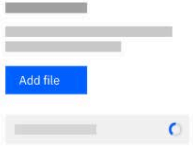
Progress indicator

Overflow menu

Radio button

Dropdown

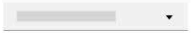
File uploader



Form

Inline loading

Select



Slider

Structured list

Link

Text link

List

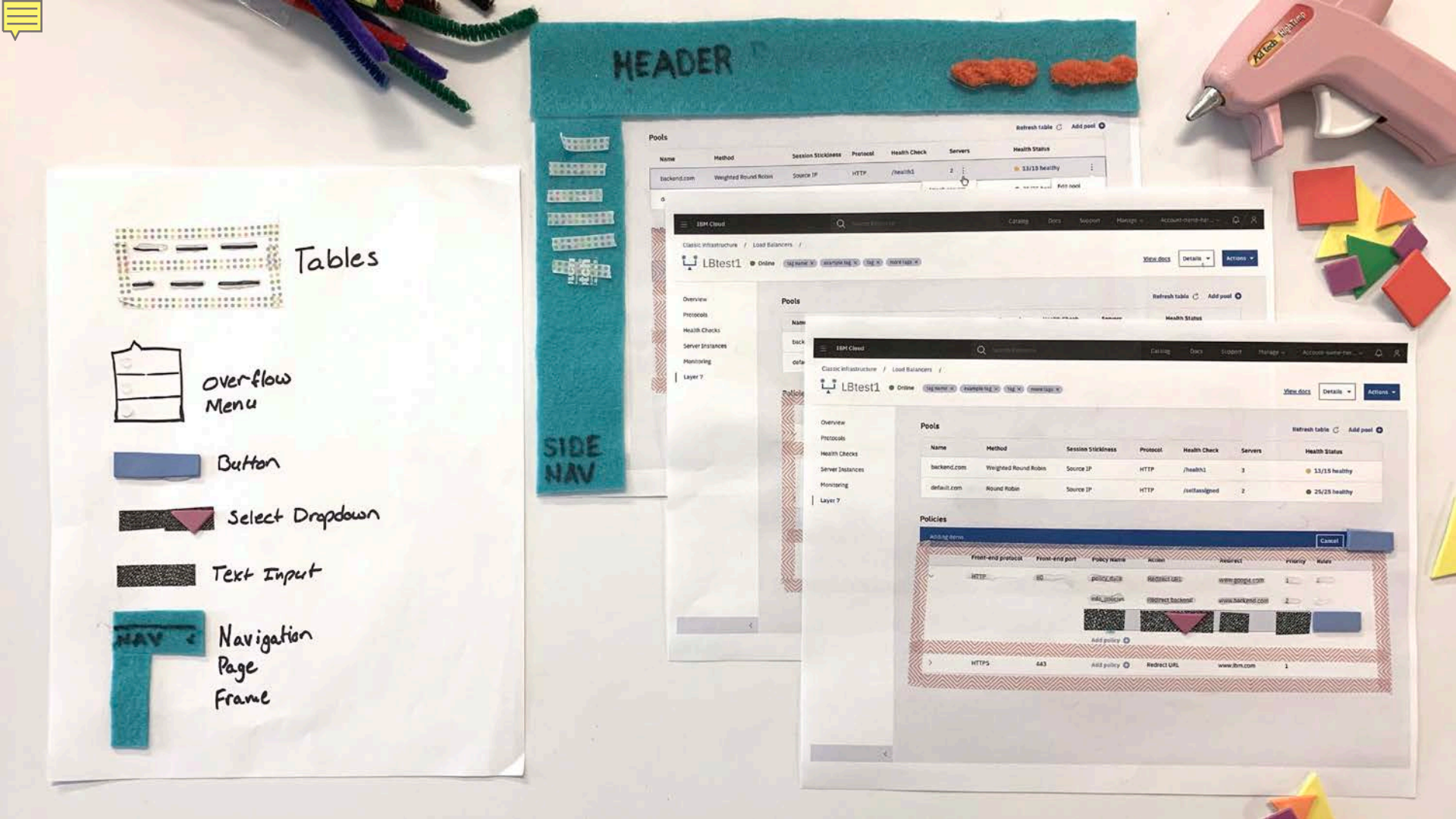
Loading

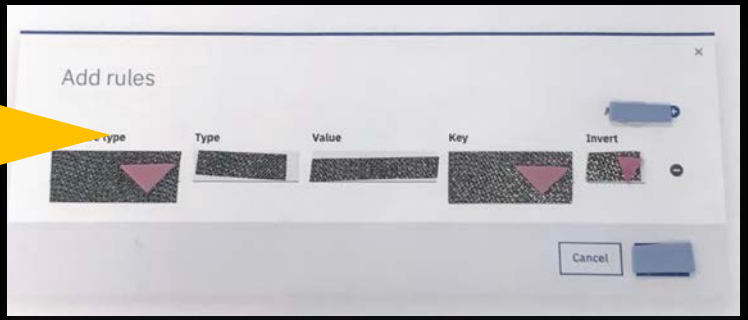
Modal

Tag

Text input

Tile


HEADER
SIDE NAV
Pools
Refresh table
Add pool
Name
Method
Session Stickiness
Protocol
Health Check
Servers
Health Status
backend.com
Weighted Round Robin
Source IP
HTTP
/health1
2
13/13 healthy
IBM Cloud
Classic Infrastructure / Load Balancers /
LBtest1
Online
View docs
Details
Actions
Overview
Protocols
Health Checks
Server Instances
Monitoring
Layer 7
default.com
Round Robin
/selfassigned
25/25 healthy
Policies
Cancel
Front-end protocol
Front-end port
Policy name
Action
Redirect
Priority
Rules
HTTP
80
Redirect URL
www.google.com
Redirect backend
www.backend.com
Add policy
HTTPS
443
www.ibm.com
Tables
Overflow Menu
Button
Select Dropdown
Text Input
NAV
Navigation Page Frame



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Take-aways

- The pattern library made it easier for us to quickly create tactile components that communicated design -- and helped Randy to better comprehend.
- The pattern library allowed us to keep consistency across our designs.

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Questions from audience

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Questions for the audience

- What ideas have you explored to get feedback from people, with diverse abilities, during the design phase?
- How are your ideas novel?

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Phase 3
Using the Kit

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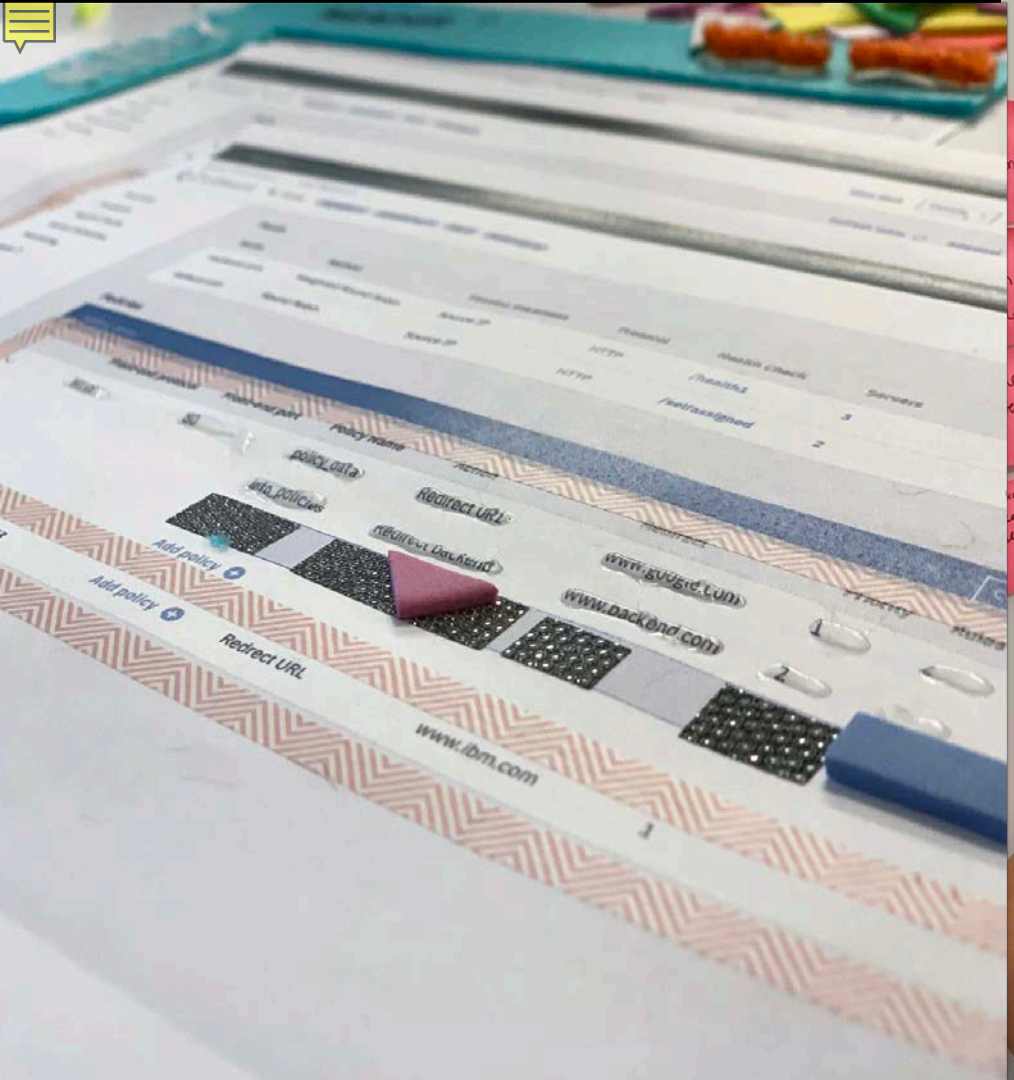
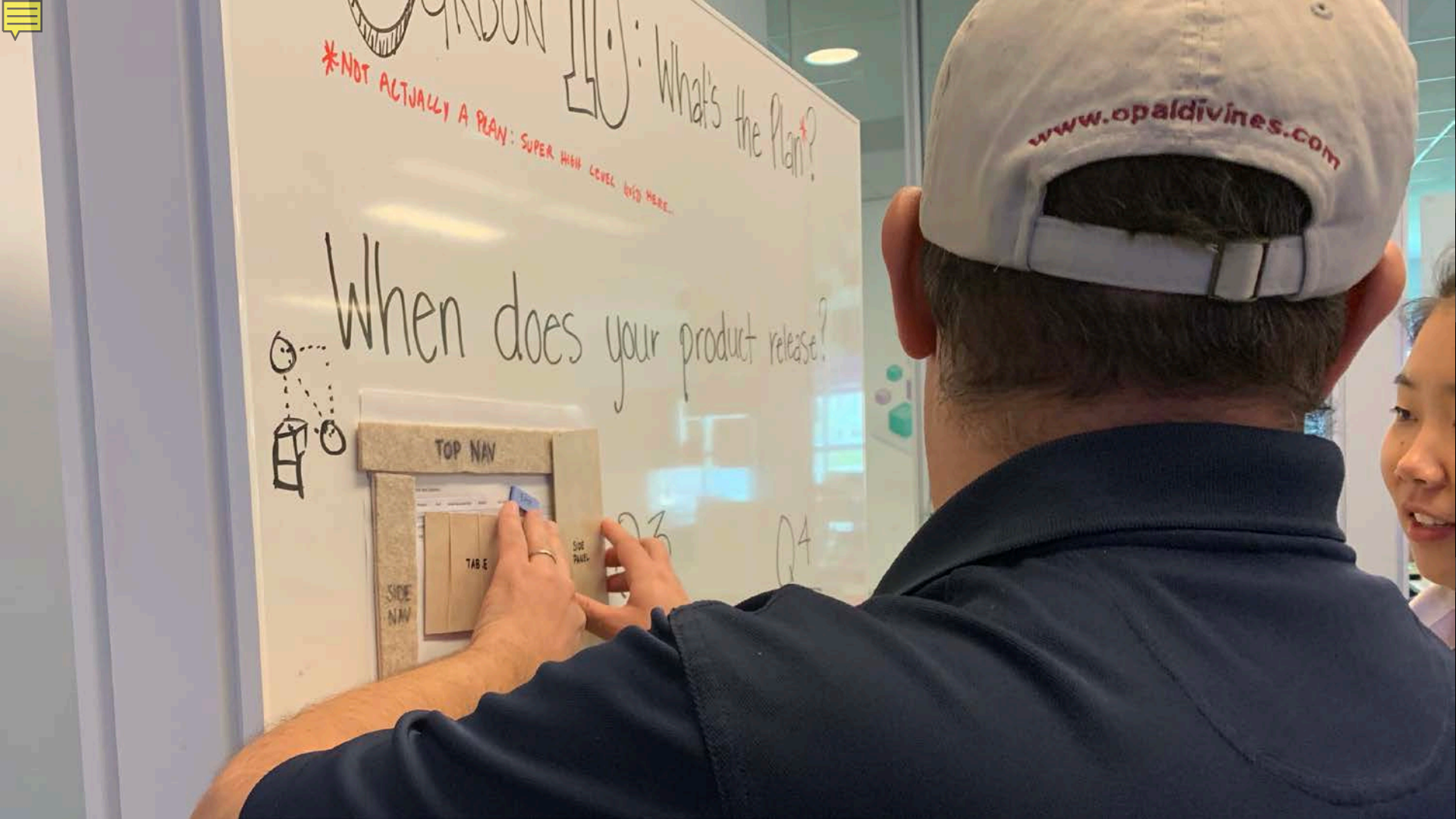

Add policy
Add policy
Redirect URL
www.ibm.com
Redirect URL
www.Backend.com

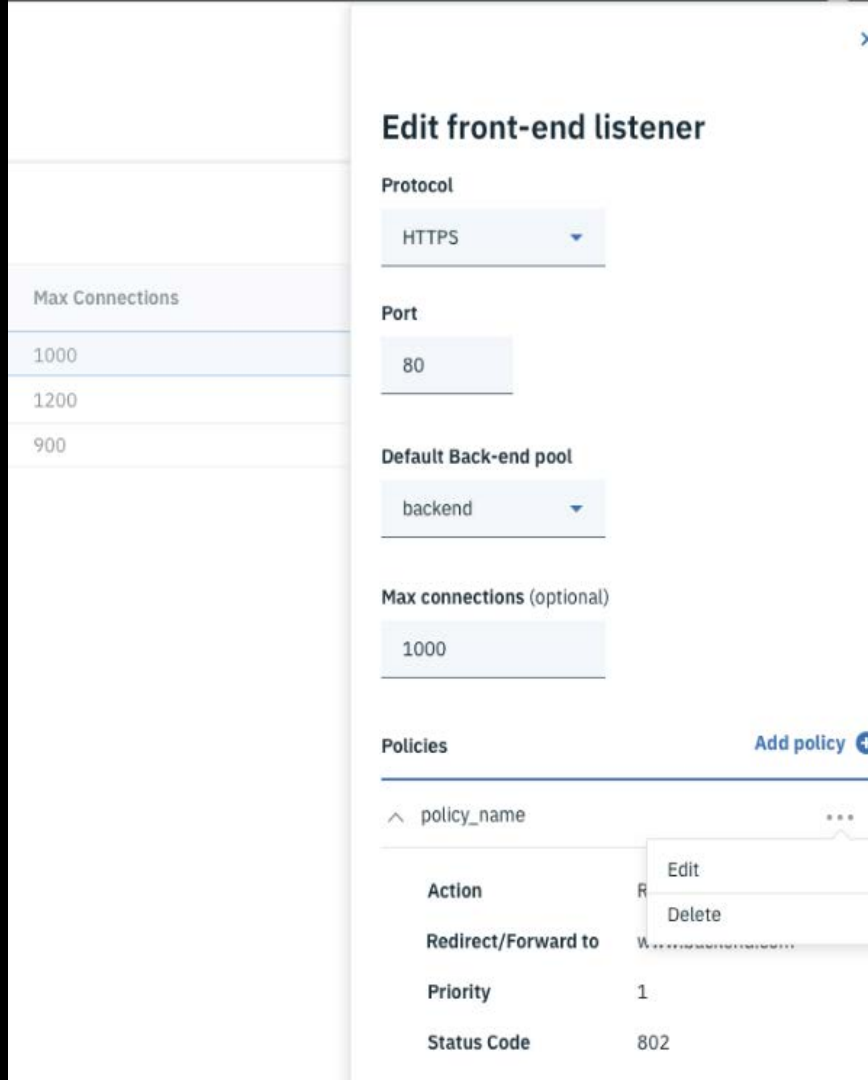
Keynote
(recording)
AM


*NOT ACTUALLY A PLAN: SUPER HIGH LEVEL BYD HERE.
When does your product release?
TOP NAV
TAB E
SIDE NAV
www.opaldivines.com

TOP NAV
SIDE NAV
Button
Overflow
Tile
Tile
Selected Tile
SIDE PANEL

To Be

- Work through delete interaction for a policy in the table.
- Incorporate table info on side panel since it hides content on the page.
- Add breadcrumbs to help with way-finding.
- Use ARIA tags to help the user understand the presence of a side panel.



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Insights & Outcomes

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Insights

- Randy **felt empowered** to provide feedback **early in the process**
- The kit could be used to **quickly assemble designs** in a sustainable and reusable format, in advance or on the fly
- The whiteboard offered a **contrast in texture**
- Use a more **portable whiteboard**

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Exploration Outcome

Randy has been able to use this kit with other teams.

“I feel like I’m finally able to give useful feedback.”

-Randy

Future Plans

- Because of COVID-19, it brings **a new set of challenges** to consider in further development of the kit
- The IBM Accessibility Team is **building better collaboration** with designers embedded in product teams
- **Further exploration will continue** to see how to extend these ideas and make them scalable

Thank you!

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	Title	Presenter	Session Info
1	Patterns For Improving Accessible Quality Through Automated Tools In Development Environments	Thomas Brunet Charu Pandhi	**Tue 1:30 am**
2	Novel Ways To Influence Design For Inclusive Solutions	Charu Pandhi Hope Turner	**Tue 4:00 pm**
3	Quality Accessibility Conformance Reports Using The VPAT	Mary Jo	**Wed 9:45 am**
4	Considering The Deaf Perspective In Inclusive Design	Brent Shiver Jenna King	**Wed 9:45 am**

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