User Interface - (Project 1) -Phase 1

Learnings from Interview

Interview 1: Friend

- 1. Can you describe your typical work or study environment?
 - Answer: I work from home and have a small home office setup.
- 2. What challenges do you face when working or studying at your desk?
 - Answer: I struggle with maintaining an ergonomic posture for long hours.
- 3. How do you manage your desk clutter and cables?
 - Answer: I try to keep things organized, but it's often a mess with cables everywhere.
- 4. What features or functions would you find useful in a "smart desk" to improve your productivity or comfort?
 - Answer: It would be great if the desk could adjust its height automatically based on my needs and remind me to take breaks.
- 5. Can you envision any specific automation or smart features that would make your work/study experience more convenient?
- Answer: It would be awesome if the desk could adjust its height based on my posture automatically.
- 6. How do you interact with your digital devices (smartphone, tablet, etc.) while working at your desk?
 - Answer: I use them frequently for tasks and communication.
- 7. Would you like the smart desk to integrate with your digital devices and assist with tasks like phone notifications or controlling music playback?
 - Answer: Yes, that would be helpful. It could remind me of important notifications or control my music without reaching for my phone.

- 8. Do you have any specific preferences regarding the aesthetics or style of your workspace?
 - Answer: I like a minimalist and modern look.
- 9. Are there any health-related features you would appreciate in a smart desk, like posture monitoring or personalized health tips?
 - Answer: That would be fantastic, especially if it helps me maintain good posture.
- 10. Do you often collaborate with others remotely while working at your desk?
 - Answer: Yes, I have virtual meetings quite frequently.

11. Would you find it useful if the smart desk could automatically create a dedicated space for video conferencing, optimizing lighting and camera angles?

• Answer: That sounds impressive and would make virtual meetings more professional.

12. What are some other features you'd like to see in a smart desk?

 Answer: Seamlessly switch between multiple monitors or screens, offers templates and guidelines to help users organize their workspace effectively, manage the contents of desk drawers through the smart desk's UI, facilitate the opening of specific drawers

Interviewee 2: Family Member

- 1. Tell me about your daily routine and how you use your desk at home.
 - Answer: I use it for a variety of things work, hobbies, and sometimes as a dining table.
- 2. Do you ever forget important tasks or appointments when working at your desk?
 - Answer: Yes, occasionally, especially when I get lost in my work.
- 3. What annoyances or inconveniences do you experience with your current desk setup?
 - Answer: It's not very comfortable, and I wish it had better lighting for reading.
- 4. How do you envision a smart desk helping you with your daily activities?

- Answer: It would be helpful if it could remind me of tasks, adjust its height for different activities, and have built-in lighting options.
- 5. Are there any safety concerns you have when using a desk that has smart features or automation?
 - Answer: I worry about accidental adjustments or if it doesn't recognize when I'm present.
- 6. Do you often forget to turn off lights or devices when you leave your desk area?
 - Answer: Yes, that happens sometimes.
- 7. Would you appreciate features like automated lighting control or energysaving modes in a smart desk?
 - Answer: Absolutely, it would save energy and make my life easier.
- 8. Do you use your desk for creative tasks, like drawing or crafting?
 - Answer: Yes, I enjoy crafting and sometimes use the desk for that.
- 9. How do you currently source ideas or inspiration while working on creative projects at your desk?
 - Answer: I usually browse the internet or watch tutorials.

10. Would you like a feature that can display inspirational content or connect you with creative communities while you work on creative projects?

• Answer: That sounds really interesting and could boost my creativity.

11. What are some other features you'd like to see in a smart desk?

 Answer: Suggests and implements different lighting settings for various tasks, options available for users to customize the sound experience of the desk, including activating specific speakers and configuring 360 surround sound, option to handle the data, collected by desk, on a local server (for security)

Interviewee 3: Colleague

- 1. Could you describe your work habits and workspace preferences at the office?
 - Answer: I prefer a spacious desk with dual monitors for multitasking.

- 2. What tools or technology do you currently use to enhance your productivity at work?
 - Answer: I rely on digital calendars and productivity apps.
- 3. What features or capabilities would make a smart desk appealing to you in an office setting?
 - Answer: It should seamlessly integrate with my digital tools, offer adjustable settings for ergonomic comfort, and possibly have wireless charging built-in.
- 4. In an office setting, how important is data security to you when using a smart desk with integrated technology?
 - Answer: It's critical. I wouldn't want sensitive work-related data exposed.
- 5. Do you use voice assistants like Siri or Alexa in your work routine?
 - Answer: Yes, I use them for setting reminders and getting quick information.
- 6. Would you find it useful if the smart desk had voice control capabilities for adjusting settings or performing tasks?
 - Answer: Yes, that would be convenient, but security is a concern.
- 7. Do you often switch between different devices (laptop, tablet, smartphone) while working at your desk?
 - Answer: Yes, I use multiple devices for different tasks.
- 8. Would you appreciate a smart desk feature that can seamlessly sync your work across devices and provide a unified experience?
 - Answer: Absolutely, that would save a lot of time and hassle.
- 9. Are there any specific customization options you'd like in a smart desk's UI, such as the ability to create personalized workspaces or shortcuts?
 - Answer: Customization options would be great to tailor the desk to my workflow.
- 10. What are some other features you'd like to see in a smart desk?
 - Answer: support voice control, and users employ custom voice control models instead of relying on Alexa, sliding pads and users can adjust the desk's lighting based on their position, accommodates personal decoration, such as wallpaper

or projections, use personal storage or rely on the information collected from connected devices or online app accounts

Assumptions about Smart Desk

- 1. **Height Adjustment**: The smart desk can automatically adjust its height to accommodate different users and ergonomic needs.
- 2. **Sensors**: It is equipped with various sensors to detect user presence, monitor posture, and assess environmental conditions like lighting and temperature.
- 3. **Connectivity**: The smart desk has Wi-Fi or Bluetooth connectivity for seamless integration with other smart devices and digital tools.
- 4. **Voice Control**: It offers voice control capabilities for hands-free operation and task execution.
- 5. **Automation**: The desk can automate tasks such as reminding users to take breaks, optimizing lighting, and managing power consumption.
- 6. **Health and Wellness Features**: It includes health-related features like posture monitoring and providing tips to maintain a healthy workspace.
- 7. **Customization**: Users can customize the desk's settings and UI to suit their preferences and workflow.
- 8. **Collaboration Enhancements**: The smart desk has features that enhance remote collaboration, such as dedicated video conferencing setups.
- 9. **Creative Support**: For creative users, it offers features like inspirational content and connections to creative communities.
- 10. **Device Synchronization**: It can synchronize work across multiple devices and provide a unified user experience.

Design Challenges

Certainly, here are three design challenges to explore for the smart desk:

1. Intuitive and Personalized Workspace Organization while balancing Privacy:

Challenge: A user interface that allows users to intuitively organize their workspace based on their tasks and preferences. Users should be able to quickly adapt the

desk to different work scenarios, whether it's focused work, creative tasks, or collaborative meetings. Users also should have control over the level of personalization, deciding what information the desk can access and how it adapts to their preferences without compromising data security.

2. Efficient and Contextual Task Automation:

Challenge: A system that automates common tasks on the desk based on user behavior and context. For example, the desk should be able to detect when a user is preparing for a video call and automatically set up the ideal lighting, camera angle, and microphone settings.

3. User Onboarding:

Challenge: An intuitive onboarding process that guides users through setting up and personalizing their smart desk efficiently. Users shouldn't be lost when using the product for the first time.

List of basic controls and indicators

Basic Controls:

- 1. **Task Selector:** A dropdown or button to switch between different workspace configurations (e.g., focused work, creative mode, collaborative mode).
- 2. **Calendar Integration:** An icon or button to access calendar events and suggestions for task-based setups.
- 3. Voice Command Input: A microphone icon for voice-activated commands like "Prepare for Meeting" or "Switch to Creative Mode."
- 4. **Privacy Settings:** A dedicated menu for users to configure data access and permissions.
- 5. **Drawer Management:** Icons or buttons to access and manage individual drawers, including content input and locking/unlocking options.
- 6. **Lighting Scenes:** Thumbnail images representing preset lighting scenes, with a custom mode option for advanced users.
- 7. **Sound Customization:** An interactive audio mixer with sliders for individual sound zones and 3D sound positioning controls.

- 8. **Data Management:** A screen to choose between "Local Hosting" or "Central Server" for data storage and privacy options.
- 9. **Motion Detection Settings:** Sliders and waiting period controls to adjust motion detection sensitivity and behavior.
- 10. **Voice Control Settings:** A menu to select the preferred voice assistant and manage custom voice control models and commands.
- 11. **Sliding Pad Controls:** Buttons to extend or retract sliding pads on different sides of the desk.
- 12. **Lighting Adjustment:** Controls for adjusting lighting intensity, color temperature, and individual lighting zones.

Indicators:

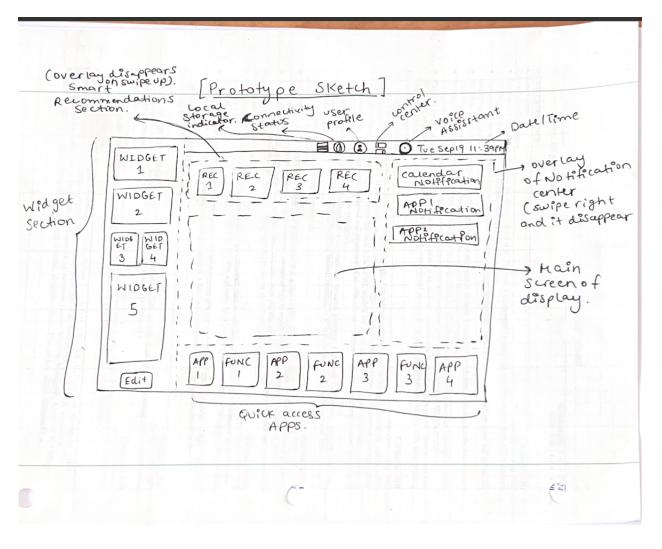
- 1. **Current Task Indicator:** Displays the selected task configuration (e.g., "Collaborative Mode") to provide visual feedback to the user.
- 2. **Upcoming Calendar Events:** Lists calendar events, highlighting those relevant to the current workspace setup.
- 3. **Voice Activation Indicator:** Activates when the microphone is ready to receive voice commands and turns off during audio processing.
- 4. **Privacy Status:** Indicates whether data is hosted locally or on a central server, with encryption and access control indicators.
- 5. **Drawer Status:** Icons or color codes next to each drawer to indicate whether it's locked, unlocked, or contains sensitive items.
- 6. **Lighting Scene Preview:** Displays a thumbnail image of the selected lighting scene to help users visualize the lighting setup.
- 7. **Sound Zone Feedback:** Visual representation of sound zones with sliders showing current volume levels.
- 8. **Data Hosting Mode Indicator:** Displays the chosen data hosting mode (local or server) and data security status.
- 9. **Motion Detection Status:** Indicates the status of motion detection, whether it's active or temporarily disabled.

- 10. **Voice Control Assistant:** Shows the selected voice assistant and customization options for voice commands.
- 11. **Sliding Pad Position:** Icons representing the position (extended or retracted) of sliding pads on different sides of the desk.
- 12. Lighting Zone Feedback: Visual feedback showing which lighting zones are active and their current settings.

Connection to Design Goals:

- User-Friendly Control: The basic controls are designed to be intuitive and easy to use, aligning with the goal of providing users with a straightforward interface.
- **Efficiency:** Calendar integration, voice commands, and preset settings enhance efficiency, ensuring that users can quickly adapt their workspace to different tasks.
- **Privacy and Security:** The privacy settings, data hosting mode indicator, and motion detection status help users manage privacy and security concerns effectively.
- **Customization:** Controls like lighting adjustment, sound customization, and drawer management enable users to customize their workspace to their preferences, promoting a personalized experience.
- **Simplicity:** The use of icons, color codes, and clear indicators ensures that users can understand and control various desk functions easily, making the UI user-friendly.

Prototype Sketch ('C-level' UI Sketch)



Feedback

- 1. **Feedback Loop:** Implement mechanisms for users to provide feedback about the UI. This can help you identify areas for improvement and address user concerns promptly
- 2. **Customization:** Your smart desk UI should allow for customization to cater to users' unique needs. Not all users may want the exact same layout and widgets
- 3. **Personalization:** Consider adding features that personalize the experience further, such as allowing users to choose wallpapers, themes, or even customize the arrangement of icons and widgets. These features should be not a lot of steps
- 4. **User Education:** Provide some onboarding or tooltips to guide users through any unique features or interactions specific to the smart desk. This tour should be in the

form of a button or a separate guide-book that users can always go back to when needed.

- 5. **Spacing and Alignment:** Ensure that elements are consistently spaced and aligned to maintain visual harmony and a polished look. User might get confused if there are three overlays (widget, notifications, recommendations). Notifications and Widgets overlay can be combined into one and recommendations overlay might need a new position as that overlay when dropped down will hide main controls in the top left. The UI could also be less crowded
- 6. Icon Clarity: Icons should be universally recognizable, and it's essential to avoid ambiguity. Consider using tooltips or labels for icons if their meanings may not be immediately obvious to users.

Reflection

Reflecting on the project's progress, I have accomplished several key steps:

- · Conducted user interviews to gather insights
- Defined features and design challenges
- Explored diverse UI sketches and a prototype
- Explored familiar UI elements for usability

Overall, I have learned how to collect user needs and translating them into a userfriendly smart desk UI. So far in this project, I have honed my design and development skills but also grasped the importance of continuous user feedback and adaptation. I learned that creating an effective UI extends beyond aesthetics; it's about enhancing functionality, accessibility, and security to deliver a seamless user experience.

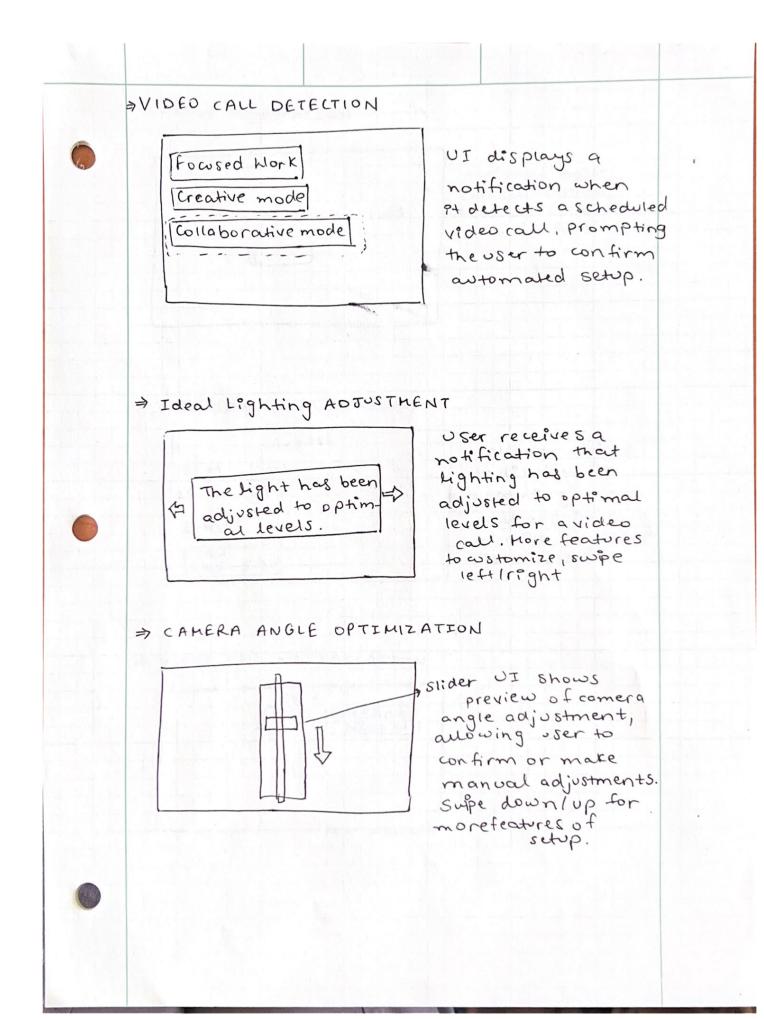
A lot of momentum has been gained and to stay on track, I need to do the following:

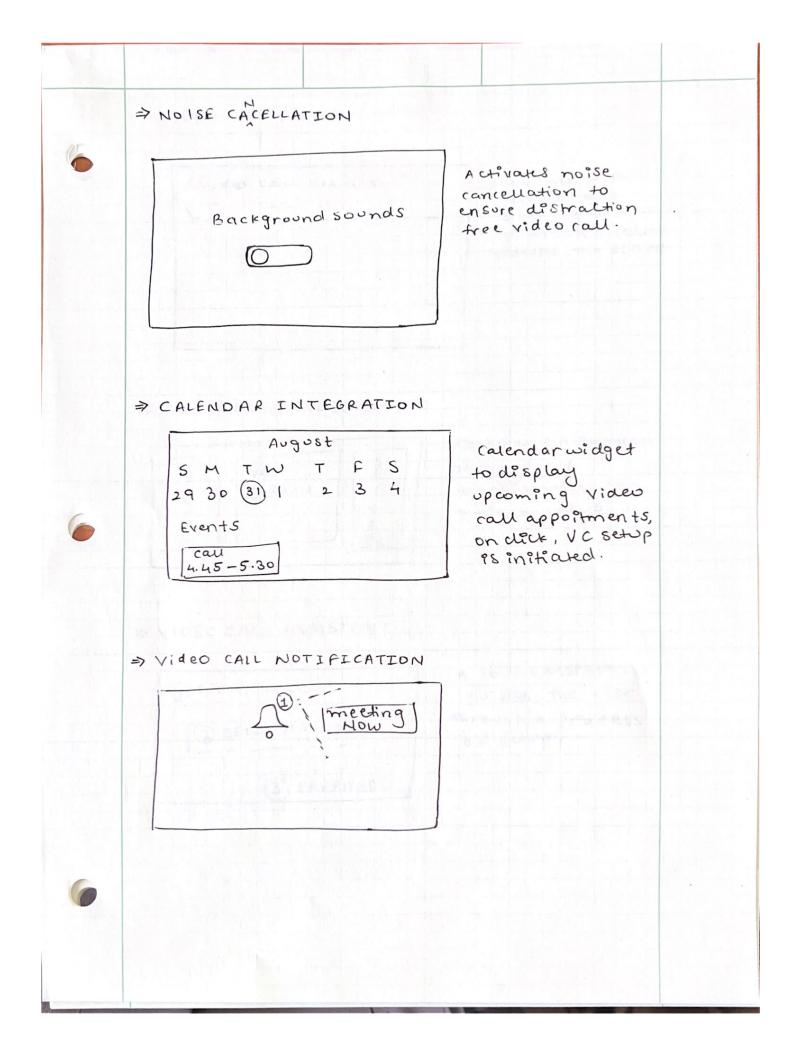
- · Iterate on the sketch based on user feedback
- · Code the actual web page for the smart desk UI
- Prioritize security and privacy
- Make user education about smart desk easy

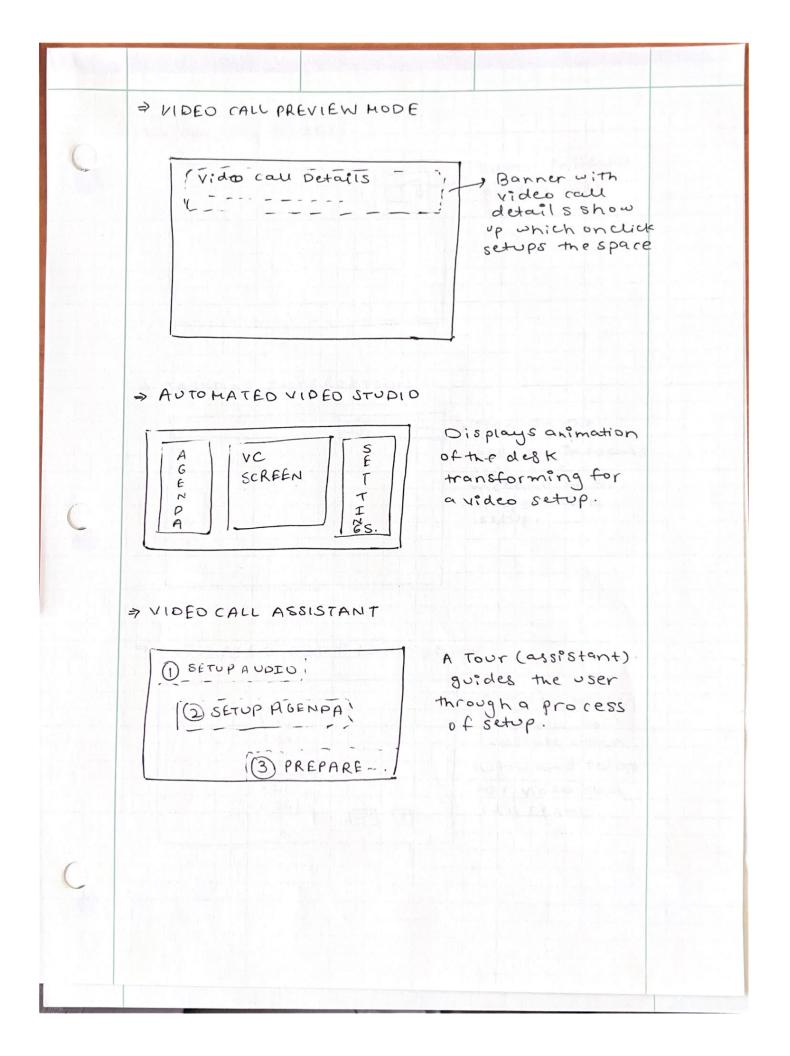
• Establish feedback mechanisms

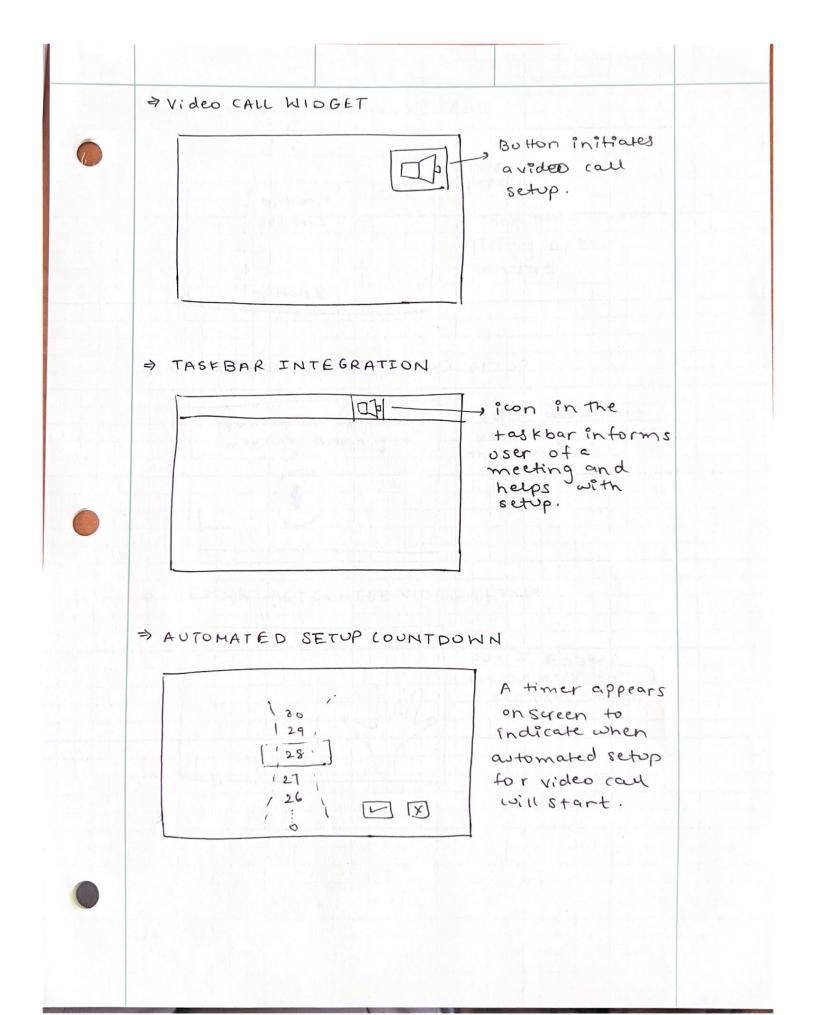
Note: ChatGPT was used to fine-tune language of the report and list down some tedious details of the project

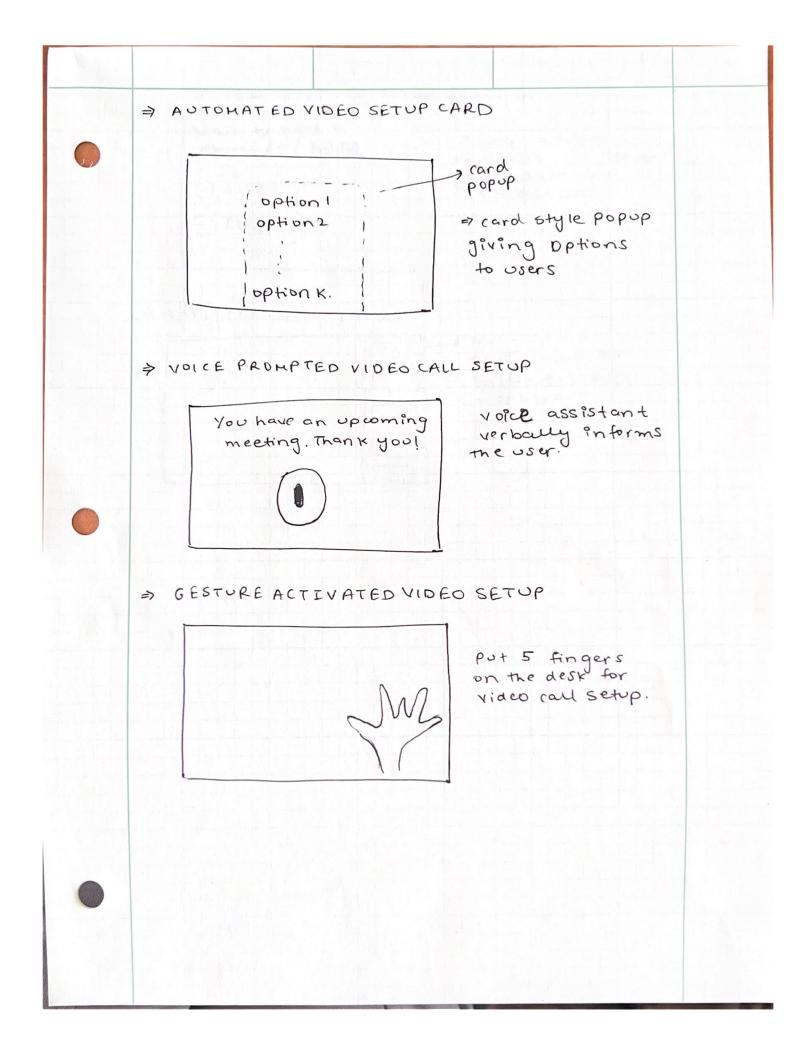
A MICROPHONE SETTINGS & OTHERS A screen displays microphone sensitivity INPUT OUTPUT settings optimezed Primery = for dear audio. other settings to be optimized if needed. Source : Headphones 1 : : : > SCREEN SHARING MODE & OTHERS + Blur Background i hant to share, UI switches to amode this screen? where desks NX sureen can be mirrored. Other settings only appear on the confirmation of previous settings. > MEETING AGENDAINTEGRATION UI displays meeting . He eting Agenda agenda, related - A Hached Files dowments to prepare _ Attendees for the call, (lick - meeting software this banner and it setups the - puration automated Video call workspace.

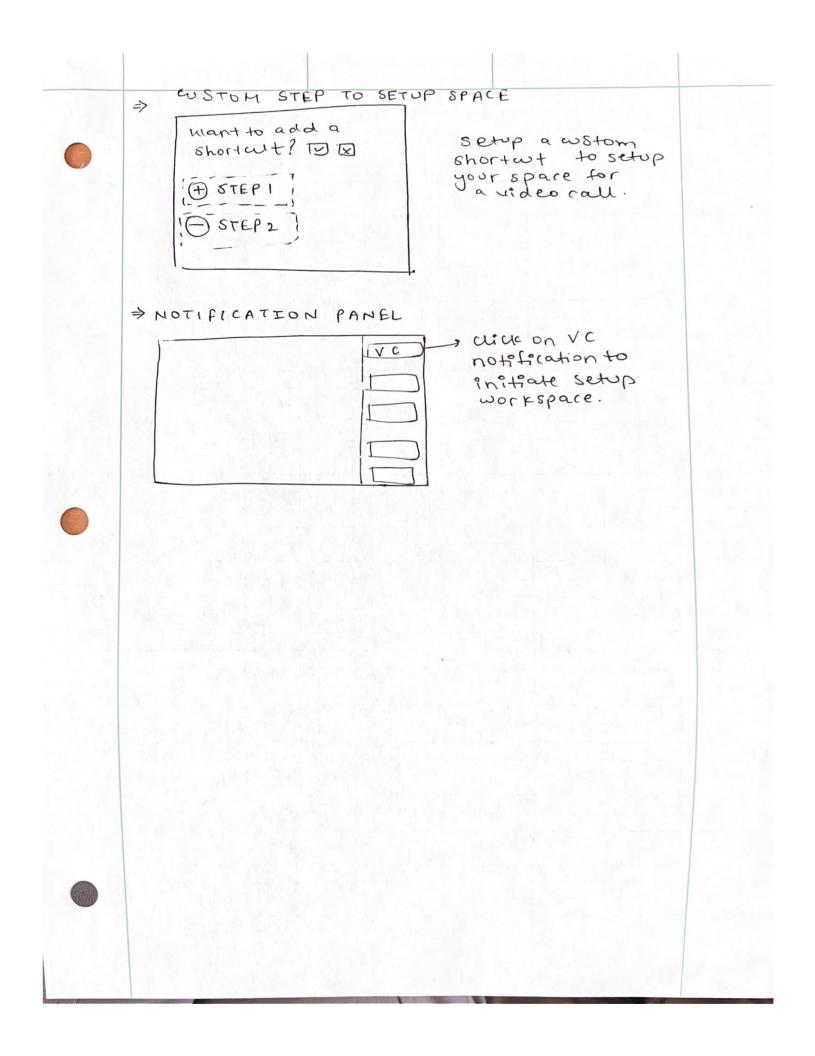


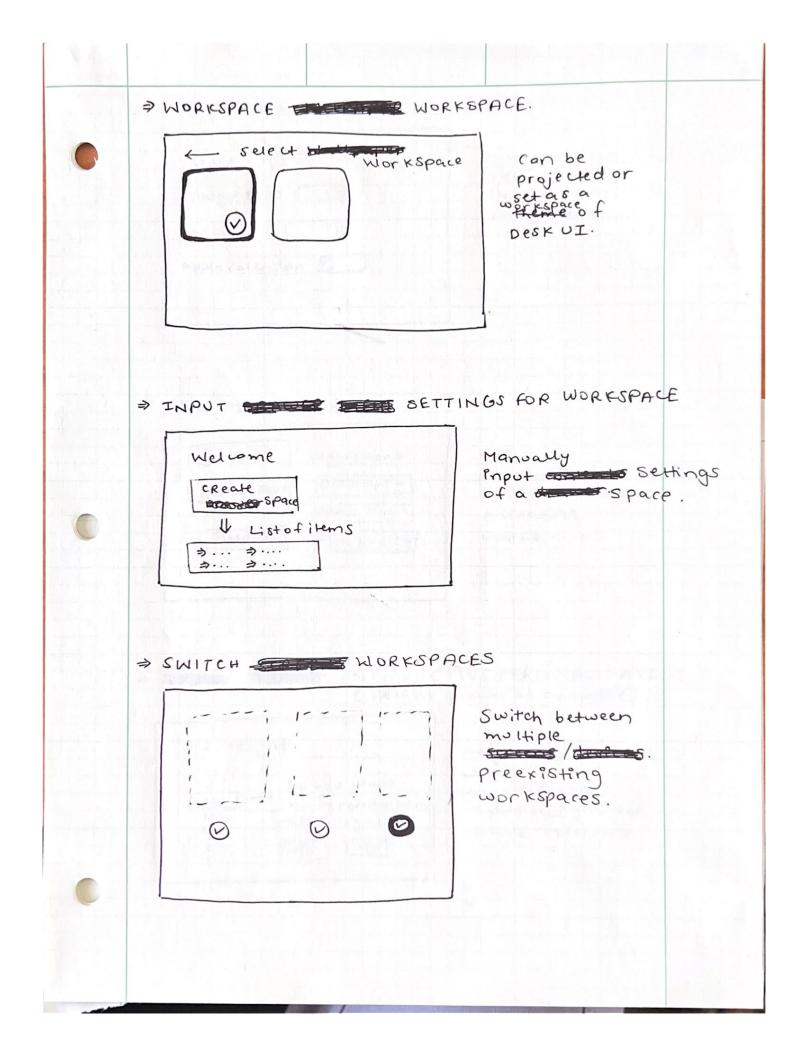


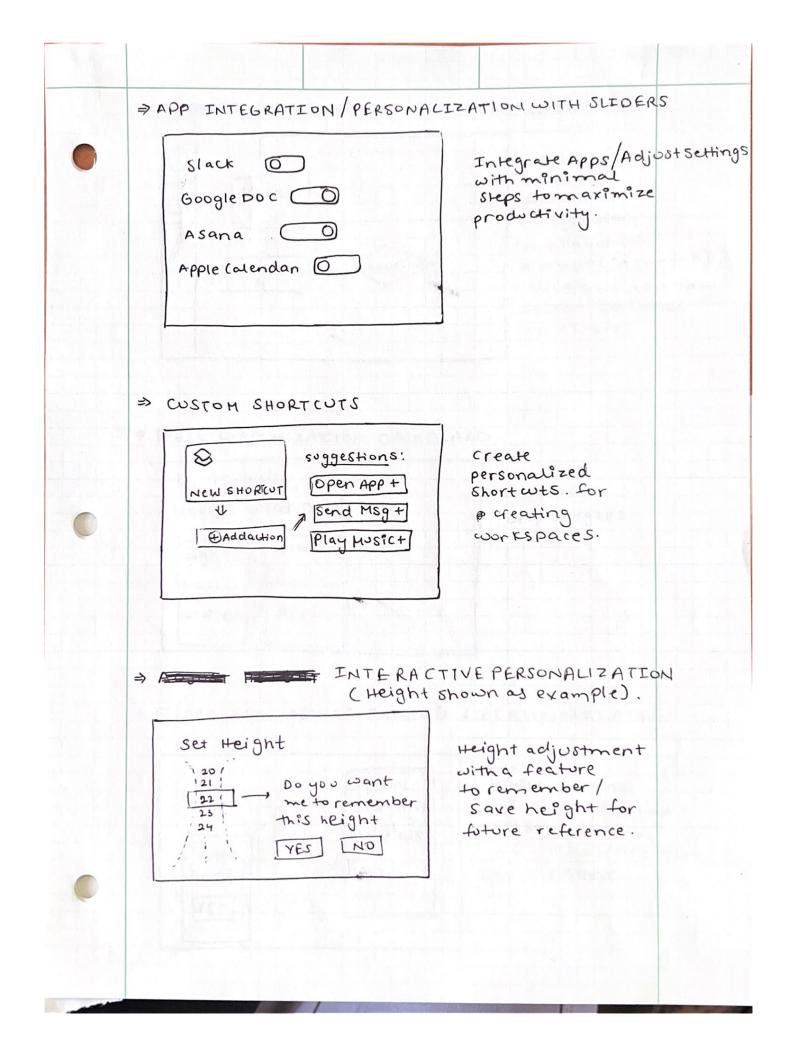


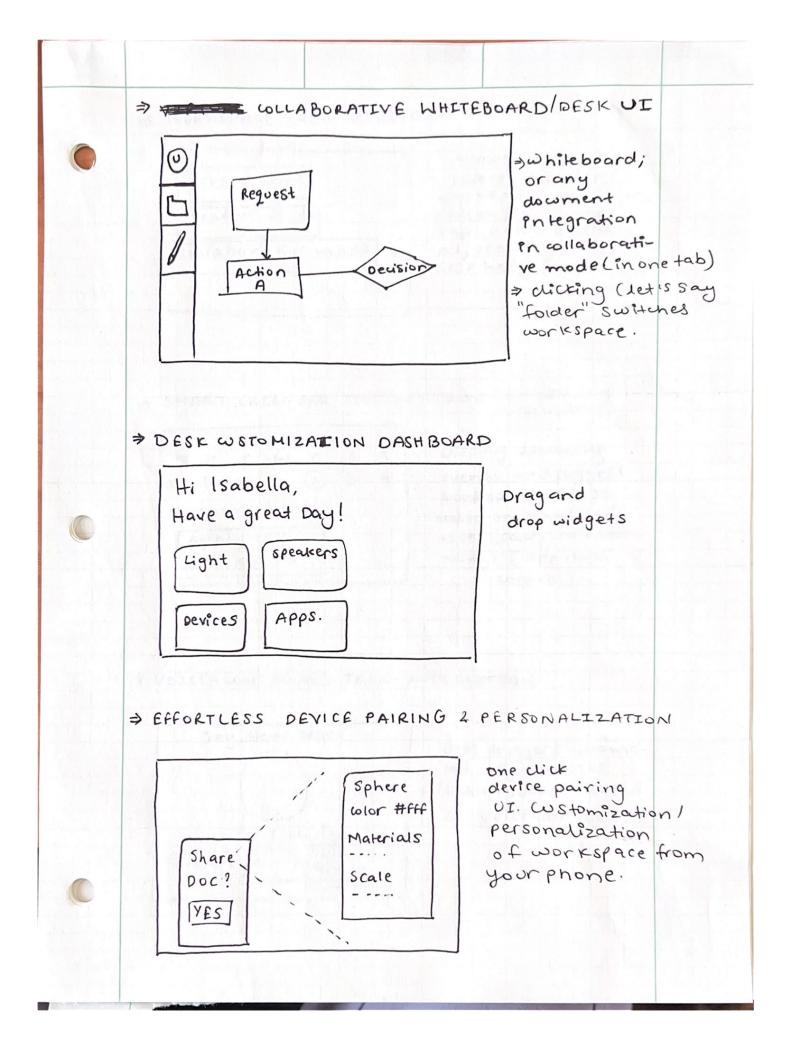


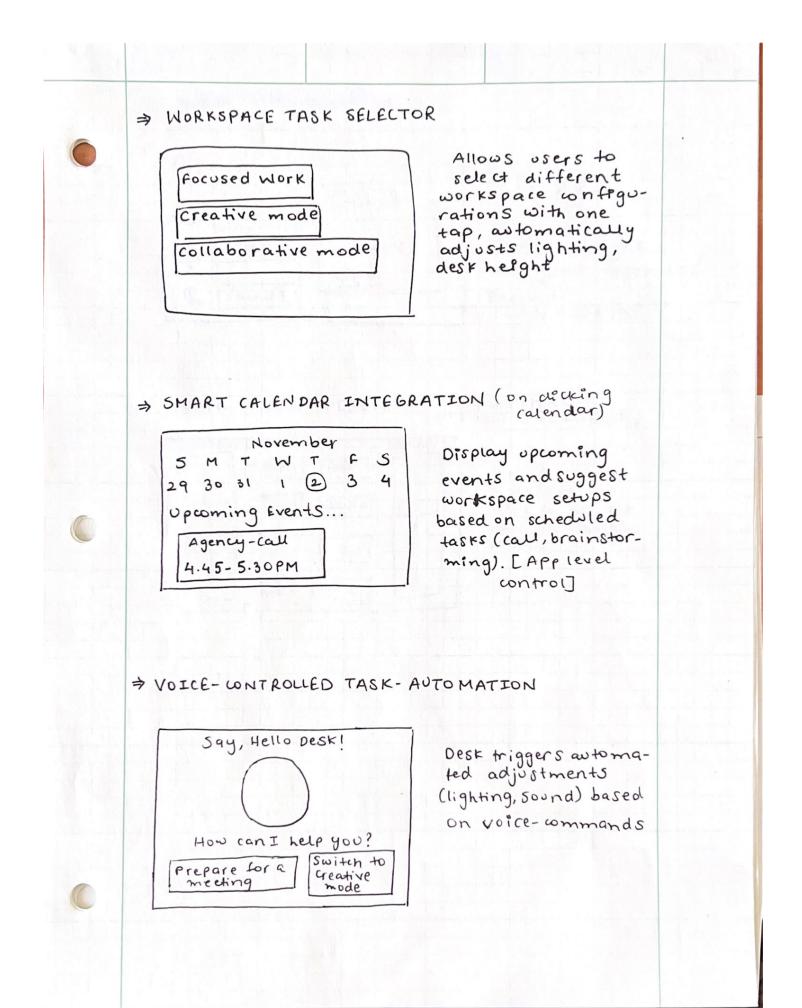


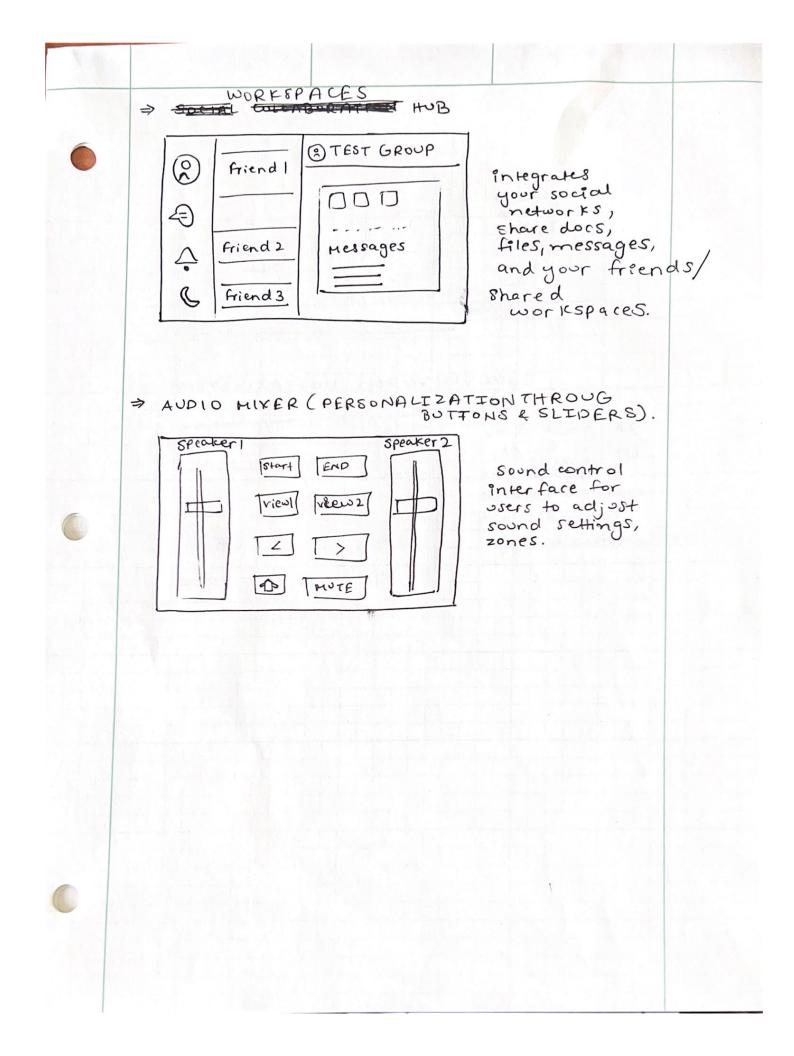


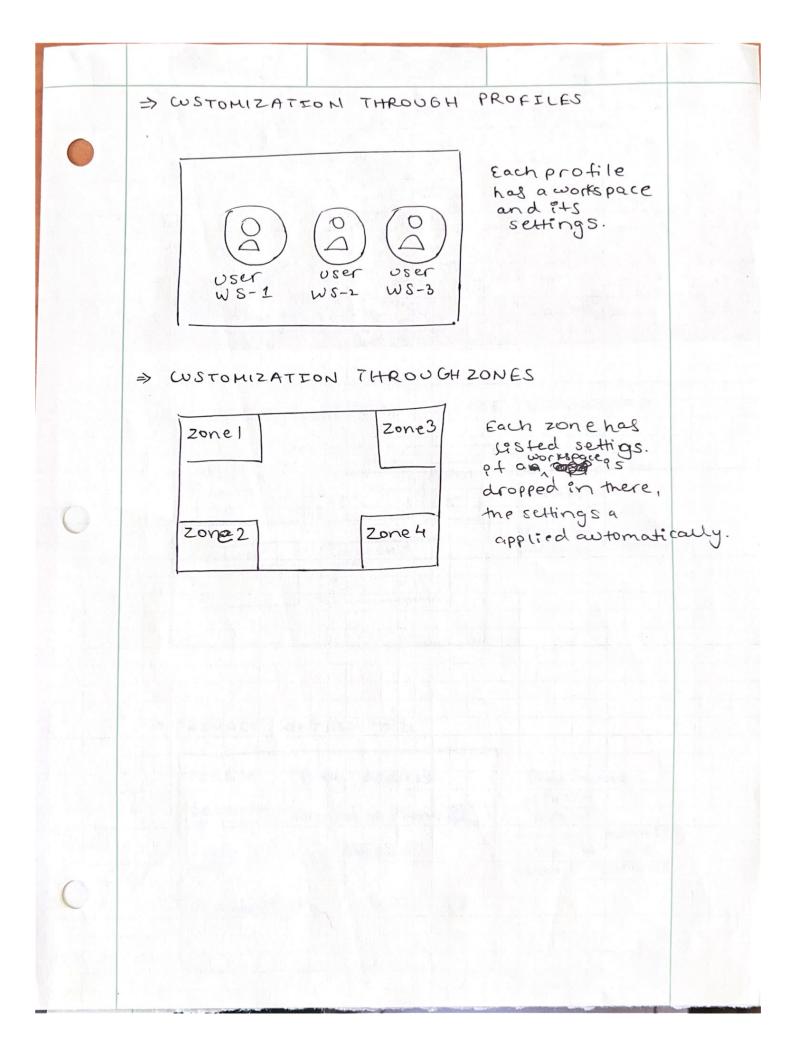


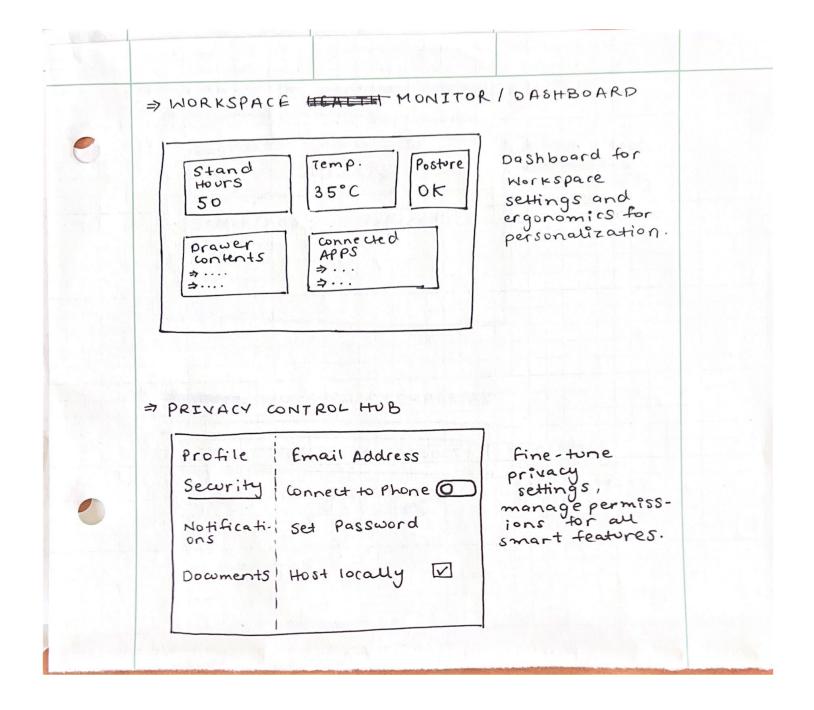


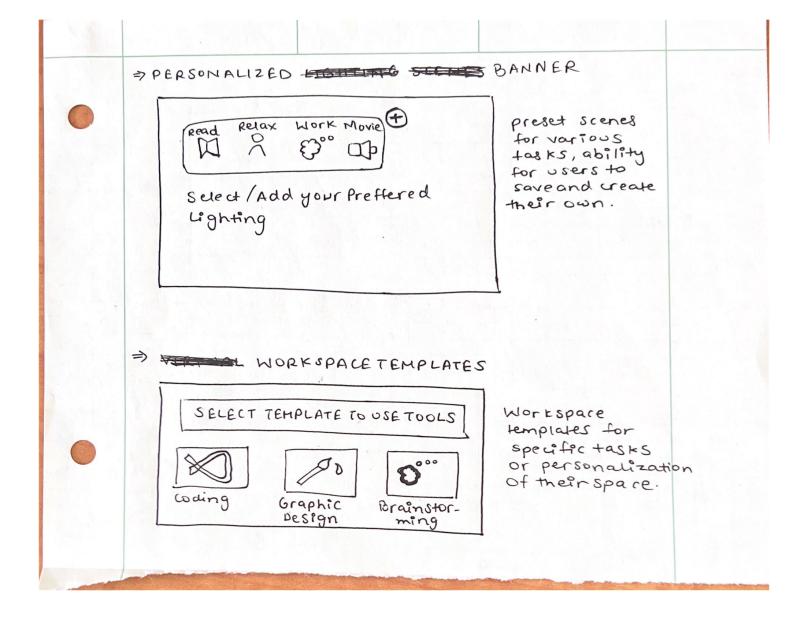


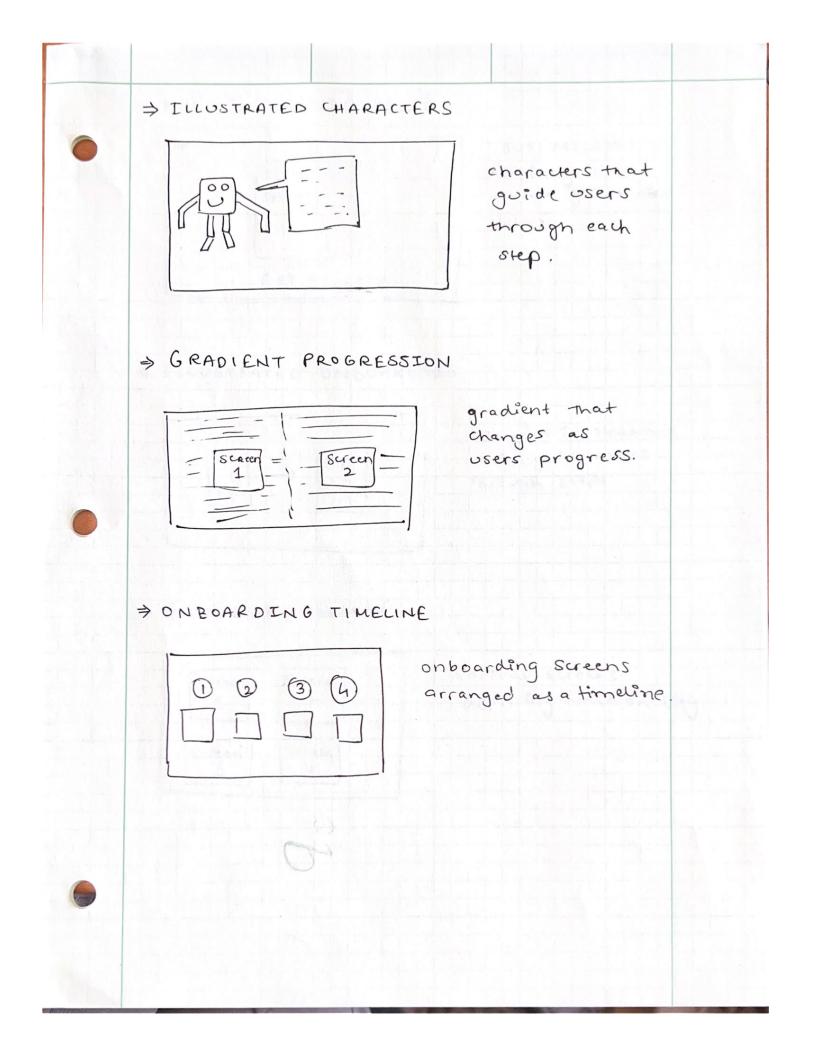


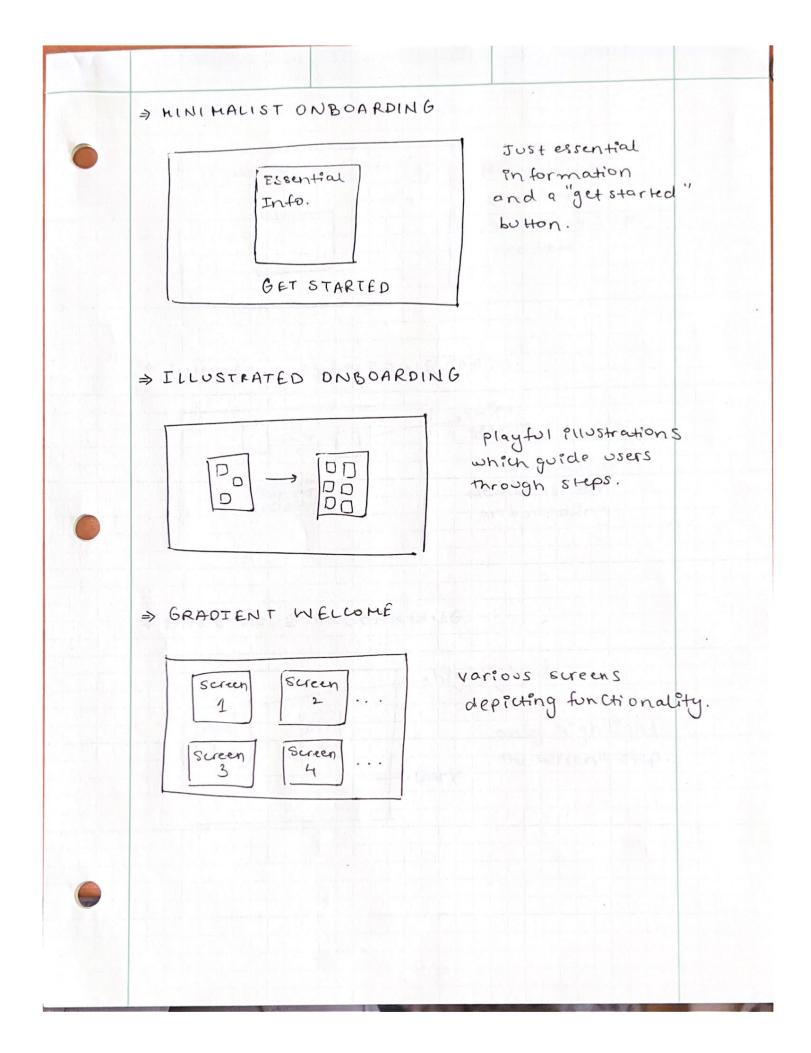


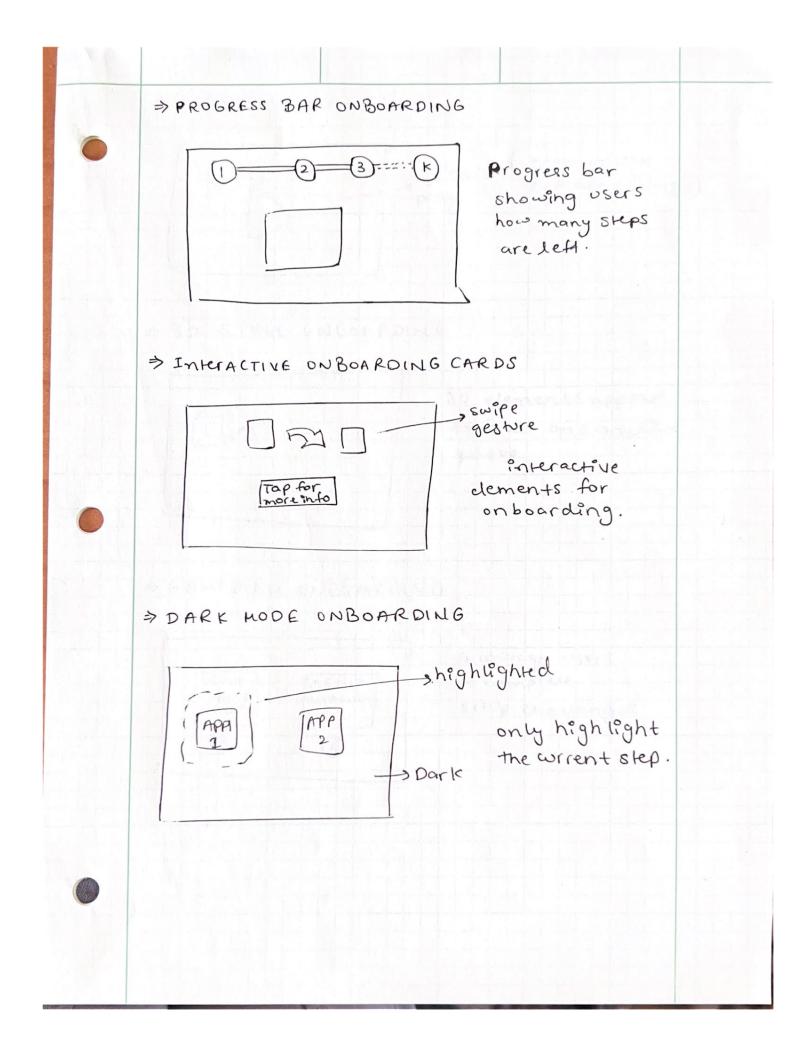


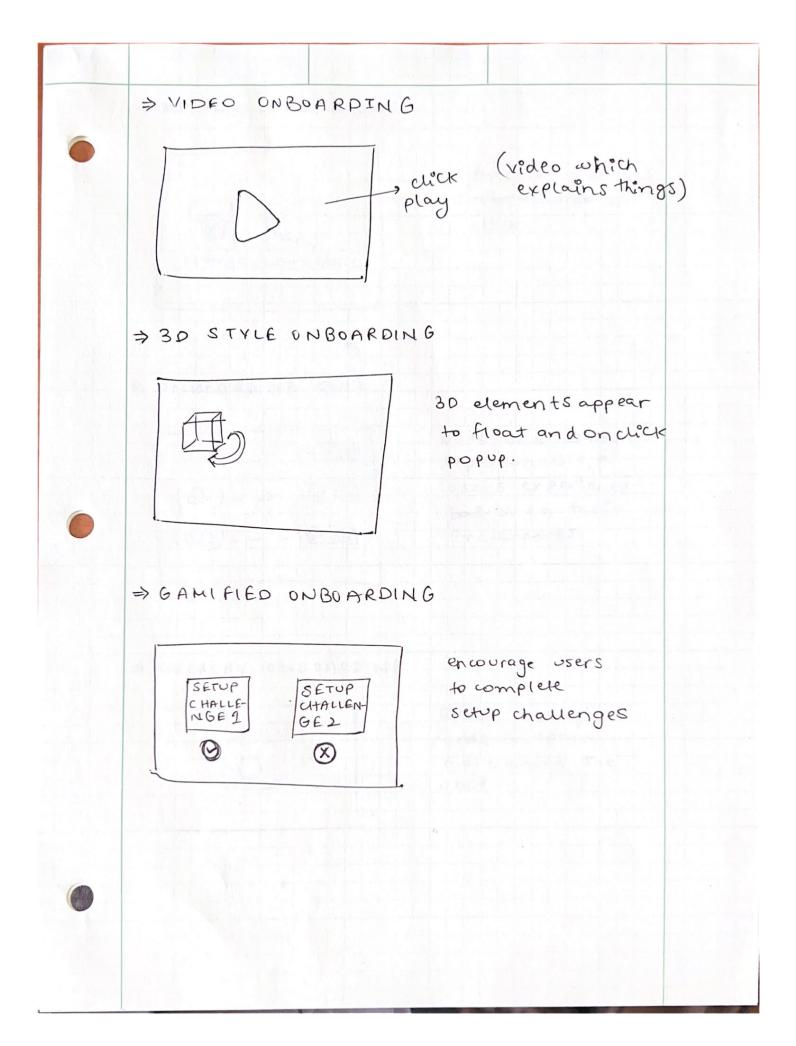




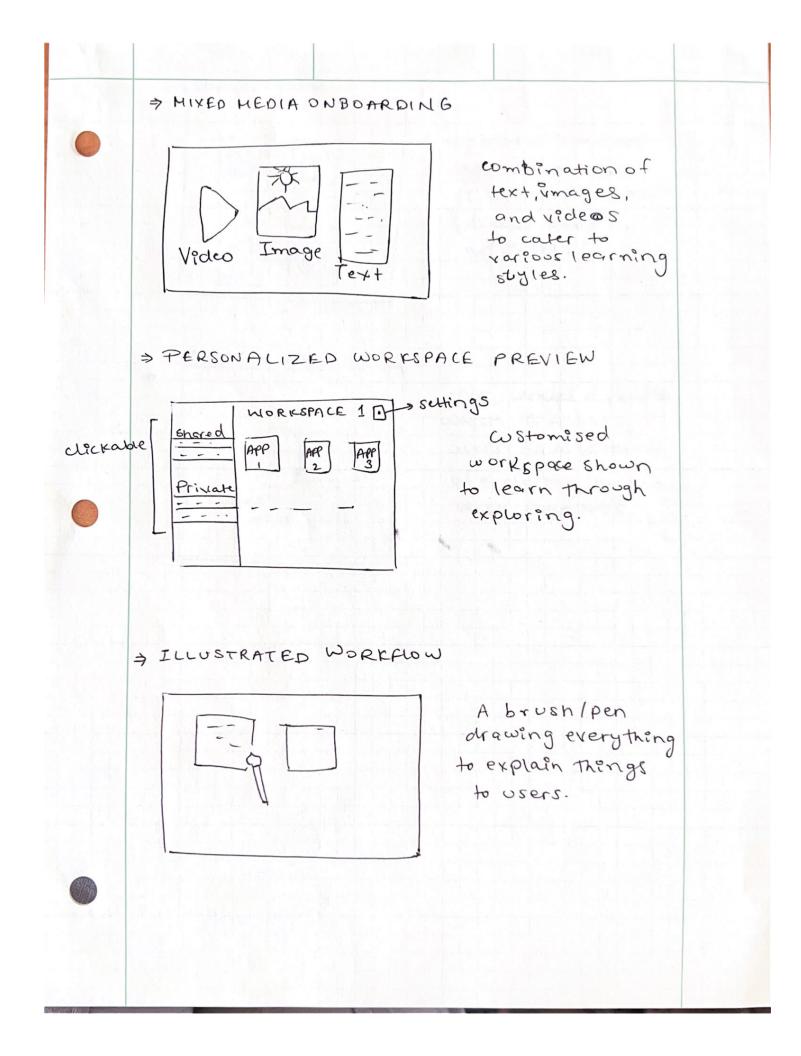


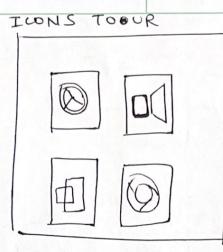






> HINIMALISTIC ILONS symbols to convey information on click. B Settings workspace > ONBOARDING QUIZ Questions asked $(Q_{1}) - - - \overline{\mathbb{V}} \\ (Q_{2}) - - \overline{\mathbb{V}} \\ (Q_{3}) - - - \overline{\mathbb{V}} \\ \overline{\mathbb{$ to personalize a users experience based on their Preferences. > OVERLAY ONBOARDING swipe through cards to learn more about the desk.



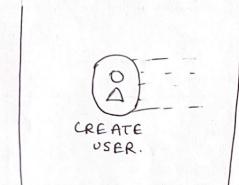


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whenever icons are tapped for the first time, a tour of that part initiates.

PROFILE BASEP



user creates a profile which then takes users on a journey of exploring smart desk features.

User Interface - (Project 1) -Phase 2

Reflection

The project is progressing well, with several foundational tasks completed. I've successfully set up the project repository using ReactJS and NextJS, configured Tailwind CSS, and integrated essential libraries like AntDesign and ShadCNUI. This solid groundwork provides a stable foundation for my UI development efforts.

Project repository can be found here: <u>https://github.com/nishilfaldu/smart-desk</u>

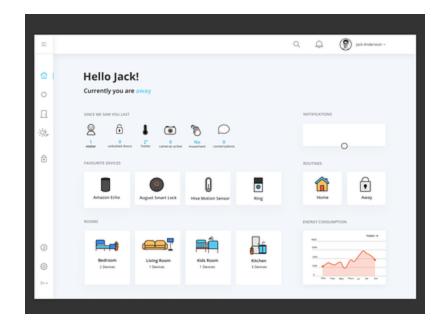
In addition, preliminary design research has been conducted, and I've gathered visual inspiration for the smart desk UI. This research has offered valuable insights into potential design directions and aesthetics that align with our project goals.

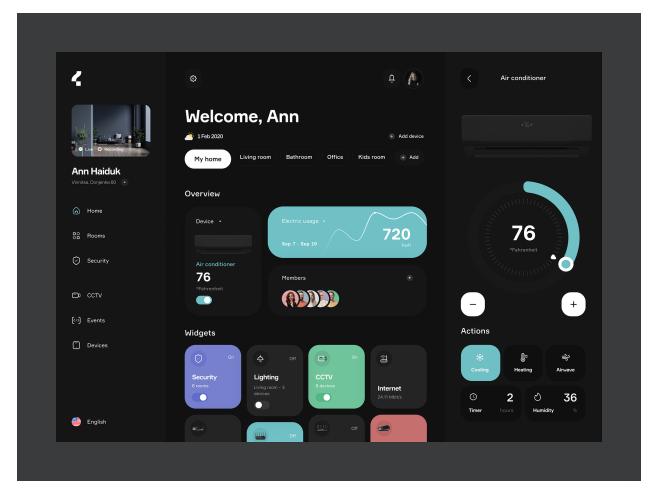
To stay on track and complete the project successfully, my next steps include:

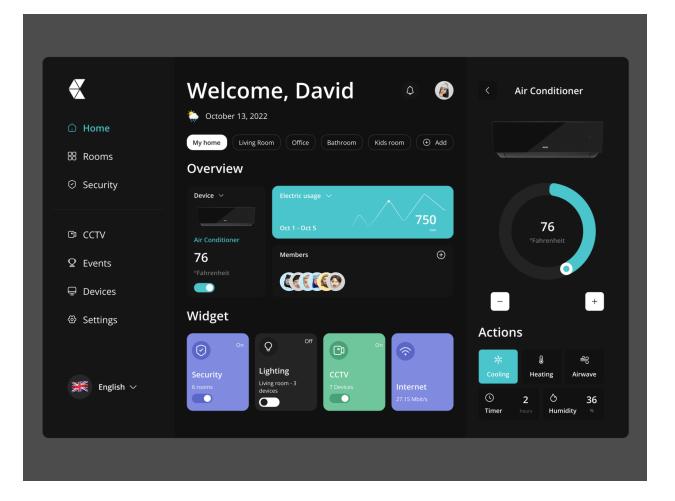
Coding and Development: With the design concepts solidified, I will dive into the coding and development phase of the actual smart desk UI. This will involve turning the design into functional web elements. I would mostly depend on external libraries for UI elements so that I can iterate faster.

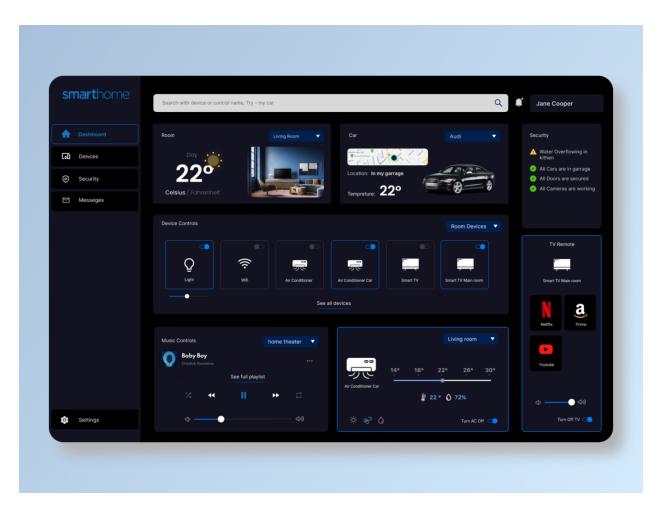
Documentation: Adding documentation to my website for the smart desk UI and linking my project there after its deployed.

User Education and Onboarding: Develop user education materials and establish an onboarding process to guide users effectively through the initial setup and usage of the smart desk.









Smart Desk UI Documentation

Project Overview

The Smart Desk UI project aims to create an intuitive and interactive user interface for a smart desk system. This interface enhances the user's interaction with the smart desk, offering a seamless and personalized experience. In this documentation, we will provide an in-depth description of the interface, including its features, controls, and technical details.

Interface Description

Desk Display

At the heart of the interface is the desk display, represented as a rectangular area. The appearance and content of this display can dynamically change based on the tabs selected by the user.

Tabs

The interface comprises the following tabs, each serving a distinct purpose:

- 1. **Dashboard:** The Dashboard tab is the central hub for monitoring and controlling various aspects of the smart desk. It includes four dynamic cards displaying charge levels, current desk height, a Pomodoro timer, and standing hours. Additionally, a curated music playlist is showcased at the bottom of the Dashboard. Users can modify the values on these cards using interactive buttons.
- 2. **Tasks:** In the Tasks tab, users can view and manage their tasks. It provides filters for sorting tasks by status and priority. Users can also customize the view by selecting specific columns to display, offering a tailored task management experience.
- 3. **Authentication:** The Authentication tab serves as the entry point for users. Here, users log in before accessing other interfaces of the smart desk. It plays a pivotal role in ensuring secure access to the system.
- 4. Workspace: The Workspace tab is a versatile area with two distinct tabs within it:

- **Focused Work:** This tab is designed for users seeking a distraction-free environment for focused tasks, such as writing.
- **Creative Work:** In this tab, users can unleash their creativity by drawing, painting, or engaging in other expressive activities. It provides a canvas for artistic endeavors.
- 5. **Settings:** The Settings tab empowers users to customize their smart desk experience. They can update their display name and username, choose a preferred theme, configure notification settings (not yet implemented), and manage the visibility of tabs according to their preferences.

Technical Details

- **Technology Stack:** The interface is built using ReactJS and NextJS, providing a responsive and dynamic web application. Tailwind CSS and RadixUI is utilized for styling and component layout, offering a modern and visually appealing design.
- Authentication: The Authentication tab employs secure user authentication methods, ensuring that only authorized users can access the smart desk's features. Authentication requires storing user data and vercel/postgres (serverless) is used storing just on table called users.
- **Data Management:** Task data is managed and displayed dynamically, allowing users to filter and customize their task view as needed.
- **Interactivity:** The interface incorporates interactive elements such as buttons, dropdowns, and dynamic card values to enhance user engagement and control.

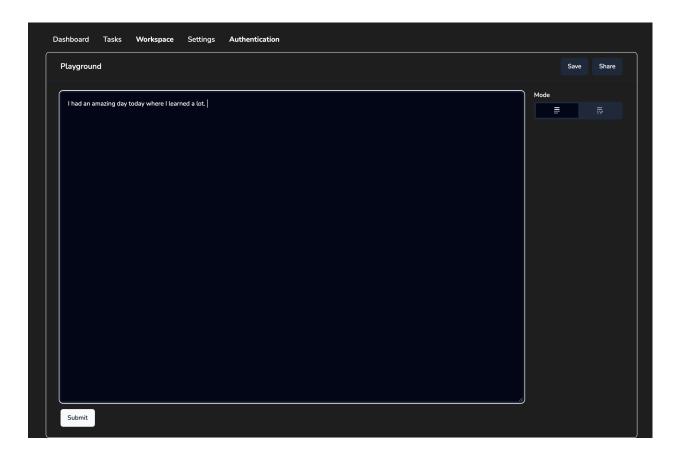
Screenshots (Placeholder)

Dashboard Tasks Workspace Settings Authentication							
Dashboard							
Battery 4- 84% Not Charging	Height 1 inches Off the ground ↑ ↓ ⊗		Standing Time 00:00:00 stood so far □ ⊗	ð	Pomodoro 25:00 focus study timer 🗌 ⊗	E	
Made for You Your personal playlists. Updated daily.							
Thinking Components Functional Fury Lena Logic Beth Binary		Stateful Symphony Beth Binary	Async Awakenings Nina Netcode	The Art of Reusability Lena Logic	Stateful Symphony Beth Binary	Async Awakeninç Nina Netcode	

Screenshot: Dashboard tab showcasing dynamic cards and music playlist.

Welcome back Here's a list of your ta				so
Filter tasks	Status O Priority			s View
Task	Title 0 Status	Status ≎	Priority 🗘	
TASK-8782	③ Backlog 21 Documenta ○ Todo 21 ogram without quantifying the open-source SSD pi	াঁ In Progress	ightarrow Medium	
TASK-7878	O In Progress 20 Documenta O Done 19 sed, maybe it will index the multi-byte pixell	⑦ Backlog	ightarrow Medium	
TASK-7839	Bug We need to bypass the neural TCP card!	🔿 Todo	∱ High	
TASK-5562	Feature The SAS interface is down, bypass the open-source pixel so we can back up t	⑦ Backlog	ightarrow Medium	
TASK-8686	TASK-8686 Feature I'll parse the wireless SSL protocol, that should driver the API panel! \odot Canceled \rightarrow Medium			
TASK-1280	Bug Use the digital TLS panel, then you can transmit the haptic system!	Ø Done	∱ High	
☐ TASK-7262 Feature The UTF8 application is down, parse the neural bandwidth so we can back u ⊘ Done ↑ High				

Screenshot: Tasks tab displaying task management and customization options.



Screenshot: Workspace tab featuring focused and creative work options.

Dashboard Tasks Wo	orkspace Settings Authentication			
Settings Manage your account settings and set e-mail preferences.				
Account	Account Update your account settings. Set your preferred language and timezone.			
	Name			
	Your name			
	This is the name that will be displayed on your profile and in emails.			
	Username			
	Your username			
	This is your public display name.			
	Update account			
	Theme			
	Select the theme for the dashboard.			
	Notify me about			
	O All new messages			
	O Direct messages and mentions Nothing			
	Sidebar Select the items you want to display in the sidebar.			
	Dashboard			
	✓ Tasks ✓ Workspace			

Screenshot: Settings tab offering customization and preferences management.

Dashboard Tasks Workspace Settings	Authentication	
爰 Smarty Inc		
		Create an account Enter your email below to create your account
		name@example.com
		password
		Sign In with Email and Password
		OR CONTINUE WITH
		Ç Github
		By clicking continue, you agree to our <u>Terms</u> of <u>Service</u> and <u>Privacy Policy</u> .
Nishil Faldu		

Screenshot: Authentication tab used to login or sign up.

Conclusion

The Smart Desk UI interface provides a comprehensive and user-centric experience for smart desk users. It combines a range of features, customization options, and interactive elements to optimize productivity and comfort. This documentation offers an overview of the interface's structure and functionality, serving as a valuable reference for users and developers alike.