Aug'23 - Oct'23

Design for Special Needs

This project emphasizes on understanding inclusive design, universal design, and accessibility design. We propose accessibility concepts for LinkedIn to empower users with affected locomotor skills, ensuring a seamless and inclusive experience.

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Introduction

Our project, centered around the enhancement of LinkedIn for individuals with special needs, is a dedicated effort to bridge this accessibility gap. In this report, we delve into the intricacies of our endeavor to suggest feature concepts that cater to the unique requirements of Persons with Disabilities (PWD). The core philosophy driving our project is the commitment to make LinkedIn more accessible and user-friendly for everyone.

Within the vast realm of LinkedIn's functionalities, we chose to concentrate our efforts on two critical areas - Profile Setup and Job Preferences. The objective in Profile Setup was to alleviate the cognitive load experienced by users when configuring their profiles. Additionally, we aimed to seamlessly integrate essential disability-related information where needed, ensuring that PWDs' unique skills and attributes were appropriately showcased. In Job Preferences, we sought to incorporate assistive technologies and other requisites that would streamline the job search process for PWDs, thereby eliminating barriers that they often encounter.

A pivotal aspect of our project entailed rigorous testing of the proposed concepts to ensure their effectiveness. We employed a comprehensive array of testing methodologies to scrutinize various facets of the app. Card sorting and tree testing were employed to evaluate the information architecture, guaranteeing that the app's structure and layout were intuitive. Usability testing and heuristic evaluation were conducted to assess the app's overall usability, identifying areas for improvement.

Through the meticulous testing of our designs, we unearthed a trove of invaluable insights. These findings were instrumental in fine-tuning our feature concepts and aligning them more closely with the needs and preferences of PWDs. The testing phase was marked by its unique set of challenges, including the recruitment of individuals with special needs as test participants. Moreover, we were often confronted with the task of making crucial judgment calls, deciding whether to proceed with certain design alterations. Despite these challenges, this phase was ultimately rewarding, as it enabled us to create a LinkedIn experience that was more inclusive and equitable.

In the pages that follow, we provide a detailed account of our journey, presenting our findings, challenges, and the innovative solutions we developed. Our hope is that our project not only sheds light on the potential improvements for LinkedIn but also serves as a testament to the power of inclusive design in the digital age.

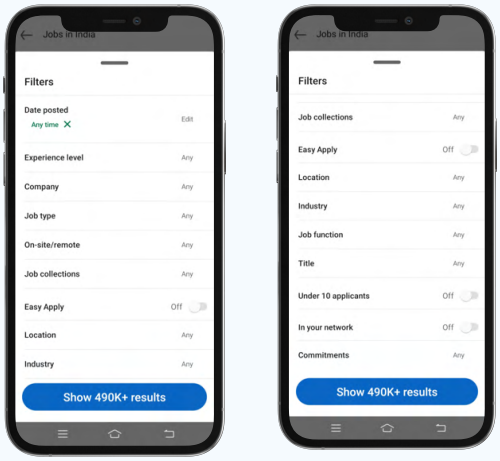
Chapter 1

UD eg. :

LinkedIn

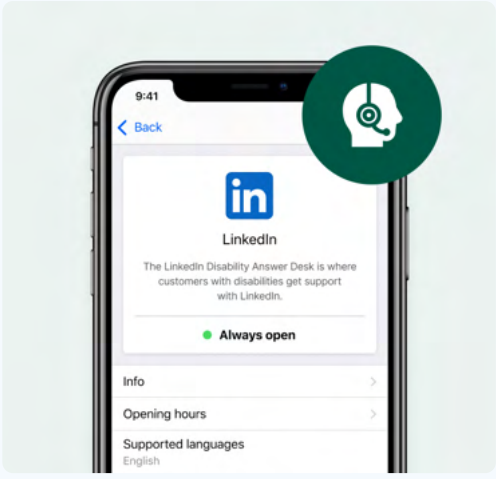
UD eg. LinkedIn

👉 Despite LinkedIn's extensive reach and influence, it lacked a dedicated section to cater to individuals with disabilities. This deficiency became evident during our analysis of universal design practices, which exposed this gap within the LinkedIn platform.



*LinkedIn's **current** Job description filter list.*

👉 Be My Eyes is a suite of products designed on a simple premise: to harness the power of technology and human connection to assist people who are blind or have low vision to lead more independent lives. With the press of a button, the app establishes a live video connection between blind and low vision users and either sighted volunteers, company representatives or sighted co-workers.



*LinkedIn's **current** Accessibility Feature - **Be My Eyes***

Chapter 2

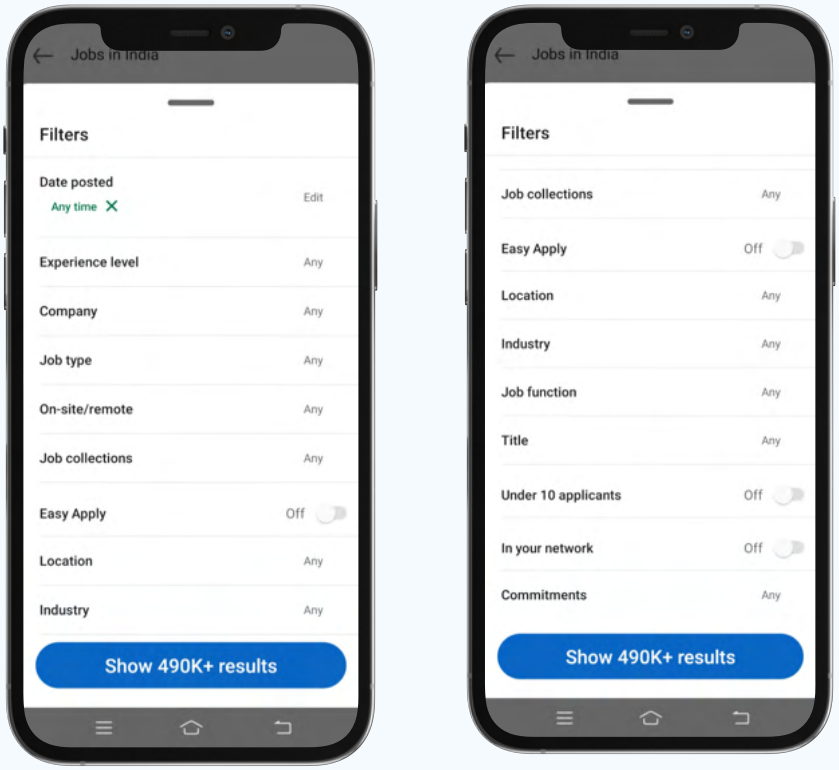
LinkedIn Accessibility Design Concept

Why LinkedIn ?

Despite LinkedIn's extensive reach and influence, it lacked a dedicated section to cater to individuals with disabilities. This deficiency became evident during our analysis of universal design practices, which exposed this gap within the LinkedIn platform.

To enhance accessibility, our efforts centered around two primary objectives. Firstly, we concentrated on implementing accessibility features that would seamlessly integrate into the application, facilitating an effortless user experience. Although certain operating systems offer accessibility features, it's imperative that these features are embedded within the application itself. Presently, the demographic section includes an option to indicate disability status; however, the process is convoluted and involves multiple steps, often causing difficulties in its application. Furthermore, many users remain unaware of this feature's existence.

Secondly, we addressed the issue of inclusivity by incorporating job opportunities that align with the unique requirements of individuals with disabilities. This strategic move not only reflects LinkedIn's commitment to fostering diversity but also reinforces its role as an inclusive platform.



*LinkedIn's **current** Job description filter list.*

Chapter 3

Targeted Disability

Targeted Disability

Physical Disability

We focused our efforts on addressing physical disabilities due to the unique potential it offered in combining accessibility and usability enhancements. Through our research, it became evident that individuals with physical disabilities possess the necessary skills and capabilities to excel in various job roles, only requiring an inclusive platform to facilitate their participation. Presently, the existing foundations and support systems have limited reach in terms of finding suitable opportunities for them. By creating a dedicated platform, we aimed to expand their horizons significantly.

In our investigation, we also came across articles highlighting the challenges associated with the disabled feature activation process. While this feature merely informs recruiters about an individual's disability status, it falls short in terms of providing comprehensive tools for tailoring job selections to meet their specific needs. This limitation underscores the need for a more robust and supportive approach that goes beyond surface-level acknowledgment.

Chapter 4

UX Research

UX Research

Stakeholders

- User
- Family Members
- Doctor
- Physiotherapist
- Recruiter
- Therapist
- Trainer

Scouting Locations

Name	Address
National Society for Equal Opportunities	Near Narayan Complex, Swastik Char Rasta, opposite Ganesh Plaza, Swastik Society, Navrangpura, Ahmedabad, Gujarat 380009
Prerna Viklang Kalyan	A-1 Shivji Flats, Nr.Dudhnath Mahadev Hall,, Juna Wadaj Gam, Juna Wadaj,, Ahmedabad, Gujarat 380013
Pearl Special Need Foundation	Sharadanagar Society, Opp. Premvardhank Flats, 53, Vikas Gruh Rd, Paldi, Ahmedabad, Gujarat 380007
Apang Manav Mandal	OPP 380009, Dr Vikram Sarabhai Marg, Amar Nagar, Ahmedabad, Gujarat
Civil Hospital, Gandhinagar	Civil Hospital Campus, near Pathikasharam, Sector 12B, Gandhinagar, Gujarat 382012
SMS Multi-Speciality Hospital	BLOCK-D Gujarat State Highway 71, near Tapovan Circle, Nigam Nagar, Chandkheda, Ahmedabad, Gujarat 382424
Health & Care Foundation (Polio Foundation)	2G4Q+22V, Pavansut Society, Jivraj Park, Ahmedabad, Gujarat 380007

UX Research

Research Locations

Health & Care Foundation, Ahmedabad

S.M. Shah Hospital, Gandhinagar

UX Research

Research Locations

Civil Hospital, Gandhinagar

Apang Manav Mandal, Ahmedabad

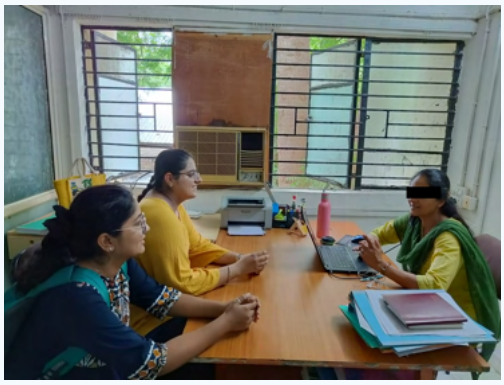
UX Research

Research Locations

Mission Health, Ahmedabad

UX Research

Interaction with stakeholders



Chapter 5

Questionnaire

Questionnaire

User :

1. Your name & age?
2. What is your daily routine?
3. What is the underlying cause of that disability? Is it progressive or stationery?
4. Which devices you are using? What are the problems you're facing with the device?
5. How do you typically hold your mobile device while using it with one hand? Have you used any external accessories or devices to assist with one-handed mobile usage such as phone grips, stands or accessibility tools?
6. Have you ever sought assistance or support from others while using your mobile device with one hand?
7. What are some of the apps and websites you use the most?
8. Are you facing any difficulties while using those apps and websites? If yes, which are those?
9. How you're solving those problems by yourself?
10. From where did you find solutions of problems facing while using apps and websites?
11. Are you aware of assistive features of devices or assistive technology? If yes, which features you're using in daily life?
12. Have you used any specialized apps or tools designed to improve accessibility on mobile devices? If yes, how effective do you find them?
13. Have you faced any difficulties with touchscreen sensitivity or accuracy while interacting with mobile devices?
14. Are you a working professional? How did you find your job?
15. Have you received enough/required training or support to use assistive technologies in the jobhunting platform?
16. What advice would you give to jobhunting platforms to make their platform more inclusive and accessible for specially abled job aspirants?
17. What initiatives or programs do you think would be beneficial for promoting special ability inclusion on any jobhunting platforms?
18. What advice would you give to employers to make their jobhunting platform more inclusive and accessible for specially abled job aspirants?
19. Are there any improvements or changes you would like to see in mobile devices or apps to better accommodate one-handed users?

Questionnaire

Family Members:

1. Your name & age?
2. What is your relation with the user ?
3. How do you support to your family member who has one hand ? and how does he tackle it
4. Is his/her disability by permanent or temporary?
5. What are some specific tasks or challenges your family member faces due to having one hand, and how do you help them overcome these challenges?
6. What type of device does he/she use and what are the difficulties do they face ?
7. what are the difficulties you face and how do you help them?
8. Are they used to devices or are you still supporting them how to use ?
9. Have you introduced any external accessories or tools, such as phone grips or stands, to help your family member manage their phone with one hand?
10. How do you address any frustrations or difficulties your family member may encounter while using their phone with one hand, and how do you encourage them to keep trying?
11. How do you ensure that your family member's phone is organized and optimized for efficient one-handed use?
12. Have you observed any positive impacts or improvements in your family member's life due to their ability to use their phone with one hand?
13. Is he/she a working professional?
14. From where did u get the info about the job? Any job hunting platform or any recommendations?
15. What are some of the creative solutions you've come up with to enhance your family member's mobile experience with one hand?

Questionnaire

Recruiter:

1. Company demographics
2. Why do you recruit differently abled people?
3. Do you provide any assistive technology for them?
4. How do you approach them?
5. What salary range do you offer to these people?
6. What jobs do differently abled people usually do?
7. Do you require any job hunting platforms? If so which one do you use? and what kind of features do you think you require to filter out job seekers?
8. How do you verify the job seekers on their disability?
9. Do they required any specific proof or govt. ID of their disability? If so could you please name them.

Trainer:

1. Do you approach these people or do they come to you willingly?
2. Do you come across any behavioral issue while training them?
3. What kind of assistive technology do they use? Could you give us some examples.
4. What is the training process for physically disabled people?
5. How do patients use their mobile? Do they face any difficulty? If so could you explain it in detail.
6. Do patients adapt to assistive technology easily?
7. Is there any age factor to consider in smart phone usage?

Trainer:

1. Do you provide physically handicapped patients with medical fitness certificate?
2. How do you judge whether a differently abled person is fit for any outside job?
3. What all motor skills are affected by a person's disability?
4. What is the job preference for physically disabled people?

Chapter 6

Insights

Insights

01

NAME
A1

AGE	OCCUPATION	DISABILITY
28 yrs	Fashion Designer	No legs - only one hand working

- 👉🏻 10-12 yrs working experience
- 👉🏻 Mostly used app: Pinterest, WhatsApp, Instagram, Facebook
- 👉🏻 Mostly for business purpose : Pinterest, Instagram
- 👉🏻 Uses smartphone from the age of 12-13 yrs
- 👉🏻 Can easily access the basic tasks of the phone. (eg typing, browsing, scrolling, changing settings, little customizing
- 👉🏻 No external accessories required to use his phone
- 👉🏻 No support from others
- 👉🏻 One hand difficulty with phone
- 👉🏻 If he wants to use his devices he has to keep it on any surface & then use it , used for it smoothly and hassle free
- 👉🏻 Didn’t know accessibility feature.
- 👉🏻 Self explored from You tube while trying
- 👉🏻 No external apps required for better accesibilty
- 👉🏻 If customization & accessibility features are provided then they will use that (with instruction)
- 👉🏻 Mostly used app: Pinterest, WhatsApp, Instagram, Facebook
- 👉🏻 Mostly used app: Pinterest, WhatsApp, Instagram, Facebook

Insights

02

NAME
A2

AGE	OCCUPATION	DISABILITY
22 yrs	Computer student	Both hands and legs

- 👉🏻 Mostly used app: YouTube, WhatsApp, Instagram, Facebook
- 👉🏻 Daily used of phone- 3 hours
- 👉🏻 First phone android from 1-2 year
- 👉🏻 Smartphone size 6-6.5 inch
- 👉🏻 Can easily access the basic tasks of the phone. (eg typing, browsing, scrolling, changing settings, little customizing
- 👉🏻 No external accessories required to use his phone
- 👉🏻 No support from others now (but in early days family member helped him) eg. handling phone while calling
- 👉🏻 One hand difficulty with phone
- 👉🏻 Didn’t know accessibility feature.
- 👉🏻 Learned from family members in early days now he explored
- 👉🏻 Also explored other devices like computer, laptop
- 👉🏻 When we showed accessibility feature he found it helpful
- 👉🏻 Don't know about Linkedin
- 👉🏻 Get job from taking from same school where they are pursing their course.
- 👉🏻 Will used accessibility features when applied in the platform

Insights

03

NAME
A3

AGE	OCCUPATION	DISABILITY
21 yrs	Works at petrol pump	One hand amputed

- 👉🏻 Mostly used app: YouTube, WhatsApp, Instagram, Facebook
- 👉🏻 First phone android from 7 months
- 👉🏻 Daily used of phone- 1 hours
- 👉🏻 Smartphone size 5.5 inch
- 👉🏻 Can easily access the basic tasks of the phone. (eg typing, browsing, scrolling, changing settings, little customizing
- 👉🏻 No external accessories required to use his phone
- 👉🏻 No support from others now (but in early days family member helped him) eg. handling phone while calling
- 👉🏻 Sometimes facing problem with one hand use
- 👉🏻 Didn’t know accessibility feature.
- 👉🏻 When we showed accessibility feature he found it helpful & also told he will use it
- 👉🏻 Also explored other devices like computer, laptop
- 👉🏻 When we showed accessibility feature he found it helpful
- 👉🏻 Don't know about Linkedin
- 👉🏻 Job provide from Apang Manv Mandal
- 👉🏻 Only familiar to mobile devices

Insights

04

NAME
A4

AGE	OCCUPATION	DISABILITY
21 yrs	B.A Student	Right hand amputated

- 👉🏻 First phone android from 2 years before that keypad phone used
- 👉🏻 Smartphone size 6 inch also familiar with all screen size phones
- 👉🏻 Mostly used app: YouTube, WhatsApp, Instagram, Facebook, Telegram
- 👉🏻 Using YouTube & News app in daily routine so he is familiar with trends and features
- 👉🏻 He knows mostly accessibility features that's why didn't faced any problem
- 👉🏻 No external accessories required to use his phone
- 👉🏻 Their school gives average jobs but he wanted to explore other jobs so he downloaded LinkedIn app and made his profile on it and left the app as it is.
- 👉🏻 He also wanted reservation for them so they can get well paying job opportunities
- 👉🏻 He said average size phone(like iPhone) are easily accessories for every user like common user or specially abled
- 👉🏻 Problem he told:
  - Camera zoom option prob.
  - More imp elements should be placed at a place where it can be easily access (eg. Thumb rule)
  - reservation job seats for them in LinkedIn

Insights

05

NAME
A5

AGE	OCCUPATION	DISABILITY
19 yrs	B.A Student	Left hand amputated

- 👉🏻 First phone android from 1 years
- 👉🏻 Smartphone size 6 inch also familiar with all screen size phones
- 👉🏻 Mostly used app: YouTube, WhatsApp, Instagram, Facebook, Telegram
- 👉🏻 Using YouTube in daily routine so he is familiar with trends and features
- 👉🏻 He knows some accessibility features
- 👉🏻 No external accessories required to use his phone
- 👉🏻 Sometimes facing problem with one hand use
- 👉🏻 He knows little about likedin thats why made profile on it
- 👉🏻 He knows little about likedin thats why made profile on it
- 👉🏻 Also explored other devices like computer, laptop

Insights

06

NAME
A6

AGE	OCCUPATION	DISABILITY
55 yrs	Teacher	Bilateral lower limb amputation Bilateral upper limb weakness

- 👉 First phone android from 24 years before that keypad phone used
- 👉 Smartphone size 6 inch also familiar with all screen size phones
- 👉 Mostly used app: YouTube, WhatsApp, Instagram, Facebook, Telegram, Linkedin
- 👉 Used all devices like phone ,computer Laptop, Tablet
- 👉 Used all devices according to their requirements
- 👉 Explored all features by themselves. (self learned)
- 👉 knows mostly accessibility features that's why didn't faced any problem
- 👉 due to long term use she has now adapted most of the features
- 👉 If they are facing any difficulty they try to learn it by themselves
- 👉 LinkedIn is not accessible others apps are more accessible , interface is not much user friendly, not so usable for them
- 👉 Problem she told:
  - Facebook last seen option remove after 3 hours
  - Instagram profile
  - reservation job seats for them in LinkedIn

Insights

07

NAME
A7

AGE	OCCUPATION	DISABILITY
18 yrs	Std. 12th Student	Bilateral lower limb amputation Bilateral upper limb weakness

- 👉🏻 Mostly used app: YouTube, WhatsApp, Instagram, Facebook, calling purpose
- 👉🏻 First phone android from 2yrs
- 👉🏻 Daily used of phone- 3hours
- 👉🏻 Smartphone size 6 inch
- 👉🏻 Can easily access the basic tasks of the phone. (eg typing, browsing, scrolling, changing settings, little customizing
- 👉🏻 No external accessories required to use his phone
- 👉🏻 No support from others
- 👉🏻 Didn't know accessibility feature.
- 👉🏻 When we showed accessibility feature he found it helpful & also told he will use it
- 👉🏻 Used recording feature for chating
- 👉🏻 Only familiar to mobile devices

Insights

08

NAME
A8

AGE
24 yrs

OCCUPATION
Developed a softwarewhich gives job suggestions to specially abled people

- Parameters such as gender, skillset, educational level, interests, etc are taken into account for suggesting jobs to differently abled people.
- Differently abled people need proper guidance for job hunting so that they can make best use of their abilities and make a living.
- Apart from few, most of the differently abled ones spend lives like average users and many of them are motivated and sharp.
- There are quotas for people with disabilities on many governmental and banking websites but in the actual process, the system works on recommendations so it isn't enough for getting jobs.

09

NAME
A9

AGE
40 yrs

OCCUPATION
Faculty at GU Zoology Department
Currently working on Duchenne Muscular Dystrophy

- Genetic deformity such as muscular dystrophy of some specific types which happens to a lot of children shortens their lifespan so they have a life till 25-30 years of age.
- Muscular dystrophy is visible at nearly 8 years of age and it has no cure so the person who has it has to accept it at an early age.
- With time many muscular dystrophy types worsen leading to the person's death at an early age.
- Parents tend to blame each other for the condition of their child.
- There are ways in which the situation for the person having muscular dystrophy can be changed but it doesn't make a huge difference in their life.

Insights

10

NAME
A11

AGE
24 yrs

OCCUPATION
Neurophysician at S M Shah Hospital

- Handicapped patients with Upper Limb issues rely on prosthetics for their day to day activities.
- If a patient has multiple impairments then they have to rely not only on prosthetics but someone else for assistance to perform day to day activities.
- Even with robotic prosthetics, patients find it difficult to navigate through small elements on a mobile screen.
- Minor movements are difficult to control in a prosthetic.

11

NAME
A12

AGE
26 yrs

OCCUPATION
Physiotherapist at S M Shah Hospital

- If the Upper limb is severely damaged then the patient uses speech to use the mobile phone.
- Patients with cases like one hand amputation or Gangrene take time to get used to their other hand.
- Patients who undergo surgeries for amputation have time in between for rehabilitation at that period of time they can use their phones with one hand or they require a surface to use it properly.
- Governments provide free prosthetics like Jaipur foot for those patients who can't afford it.
- There are many governmental as well as banking websites which provide disability quota to give them job opportunities.

Insights

12

NAME
A13

AGE
32 yrs

OCCUPATION
Orthopaedic Doctor at S M Shah Hospital

- 👉🏻 Mostly people with fractures or amputation in upper limb face the problem in using phones and laptops.
- 👉🏻 Children are fast to recover mentally than adults in case of a traumatic injury or fractures.
- 👉🏻 Mainly the patients who have finger related injuries face issues while operating a PC or a laptop while those who have thumb related fractures or amputations face issues in navigating through a smart phone.

13

NAME
A14

AGE
35 yrs

OCCUPATION
Businessman

DISABILITY
Left Hand Fracture

- 👉🏻 Had to adjust with right hand (took nearly a month) for working and performing daily tasks.
- 👉🏻 Phone gripping issue while using it by left hand.
- 👉🏻 Needed support to use the phone from left hand when right hand was busy.

Insights

14

NAME
A15

AGE	OCCUPATION	DISABILITY
28 yrs	Orthopaedic Doctor at S M Shah Hospital	Genetic Deformity in both Upper & Lower limbs with minor speech impairment

- 👉🏻 Wheelchair bound.
- 👉🏻 Sells DIY gifts made by him and his friends who are differently abled at the rehab foundation.
- 👉🏻 Was observant and sharp to notice changes in his vicinity.
- 👉🏻 Active and was interested in social interaction.
- 👉🏻 Wants smaller smart phone for grip
- 👉🏻 Uses a surface after a while of using phone with both hands.
- 👉🏻 Slow muscular movement due to stiff finger movement in both hands.

15

NAME
A16

AGE	OCCUPATION	DISABILITY
5 yrs	School going kid	Duchenne Muscular Dystrophy

- 👉🏻 Wheelchair bound.
- 👉🏻 Shy about the appearance and didn't have issue in communicating verbally to people other than his family.
- 👉🏻 Used phone for Youtube and gaming.
- 👉🏻 Used phone with one hand.
- 👉🏻 Couldn't directly move his hand up and down like common elbow movements but had to grab things but moving around the hand in a curve.

Insights

16

NAME
A17

AGE
28 yrs

OCCUPATION
Psychologist-
Behavioural Therapist

- For patients with mental disorder, more attention is paid to visuals so that they can remember through shape and color.
- For the patients who suffer with mental or intellectual disorder they learn their behavior from their family members or care givers.
- Mainly these kind of patients have kid-like behavior and they use phone in playing games or watching study related videos and those areas in technology if made more accessible can be a good help for the patient's guardians.

17

NAME
A18

AGE
30 yrs

OCCUPATION
Care giver at Polio Foundation

- Many differently abled people use smart phones for entertainment like watching videos or playing games or social media surfing.
- They are given some training to use a smart phone.
- For physically handicapped people phone with a smaller size is more beneficial.
- Jobs for differently abled people exist but there is still a lack of awareness among the community.
- Parents or guardians of differently abled people prefer for the latter to work nearby.
- Many big companies hire handicapped people or people with autism since they have special woking patterns and determination for their work.

Chapter 7

Analysis of Insights

Analysis of Insights

👉🏻 Numerous individuals facing lower limb injuries or conditions like muscular dystrophy often find using a smartphone quite manageable, thanks to the inclusive accessibility features it offers

👉🏻 Individuals with disabilities benefit from smartphones designed with enhanced grip functionality, as relying solely on accessibility features might not cater to the diverse needs of every differently abled person.

👉🏻 Several government job quotas aimed at differently abled individuals are often occupied through recommendations, and there exists a lack of awareness among the populace, including those with disabilities, about the available job quotas in government sectors, banking sectors, etc.

👉🏻 For various reasons, individuals with disabilities often tend to seek employment opportunities through recommendations rather than utilizing platforms like LinkedIn, primarily because these platforms lack dedicated job filters tailored to the needs and capabilities of differently abled individuals.

👉🏻 Despite experiencing injuries or congenital physical conditions, many differently abled individuals aspire to pursue meaningful achievements aligned with their passions. They seek to be part of inclusive communities where their contributions are recognized, enabling them to engage in activities that genuinely interest them and bring fulfillment to their lives.

👉🏻 Until they can independently accomplish their goals or attain personal achievements by themselves, individuals with disabilities often encounter lower-paying jobs that may even offer compensation below the standard rate. Regrettably, they occasionally experience insensitivity within the workplace due to persisting biases held by some individuals, highlighting the need for broader societal mindset shifts to promote greater inclusivity

Chapter 8

Empathy Map

Empathy Map

Says

- Didn't know about the accessibility feature.
- One hand Difficulty with phone.
- Self learned

Think

- They should also have a job hunting platform.
- They'll use custom & accessibility feature with instructions.
- Should have high paying salaries.

Empathy map

Feel

- Prefer smartphone size 6- 6.5 inches.
- Important elements should be placed at a thumb distance.
- Feels LinkedIn is not user friendly.

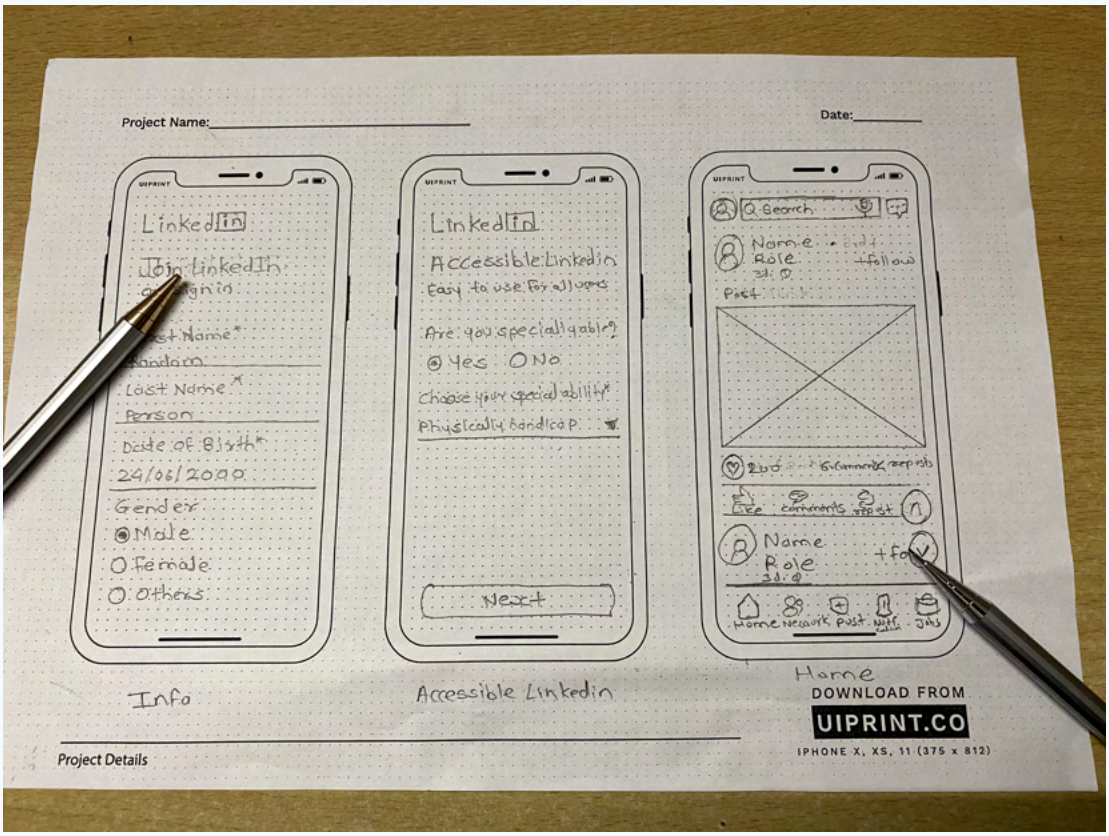
Does

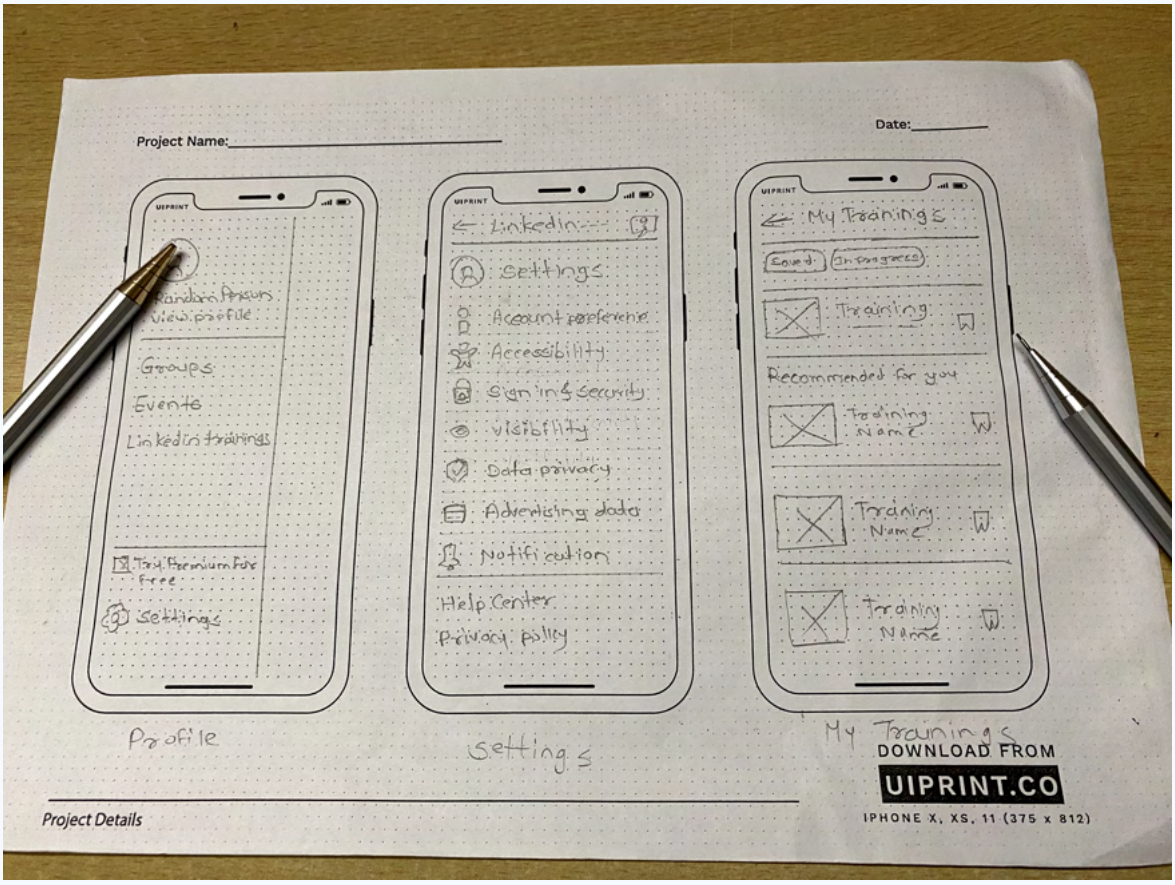
- Doesn't need any external accessories for help.
- Easily access the basic tasks of the phone.
- Uses audio recording feature for chatting.

Chapter 9

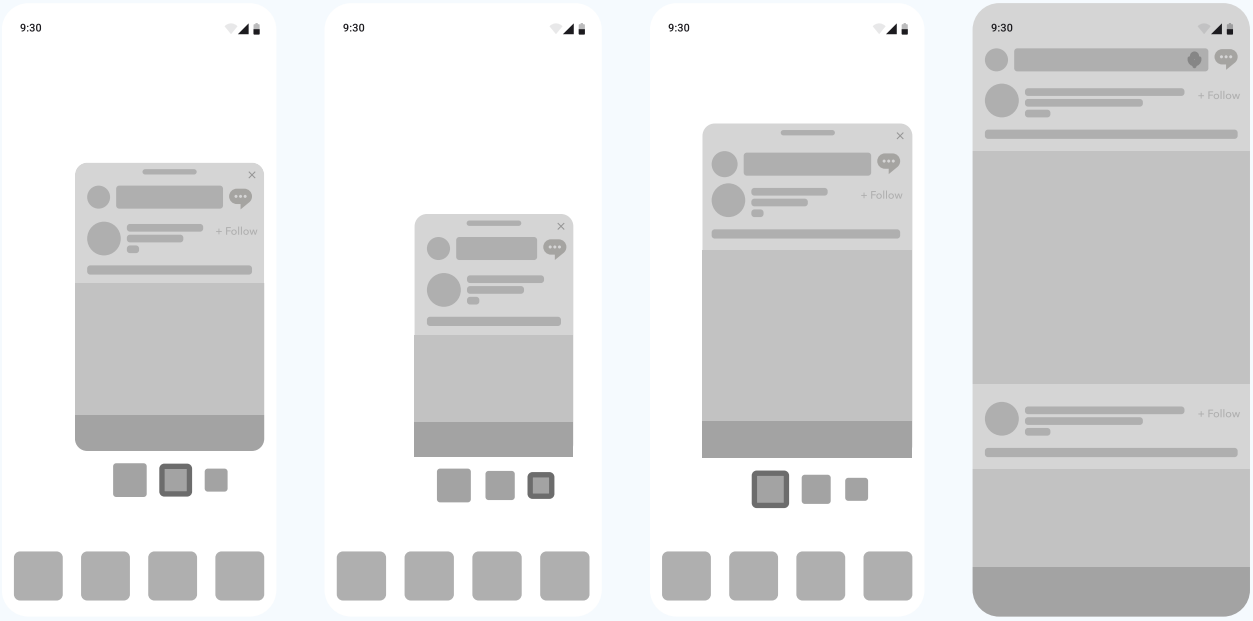
Wireframes

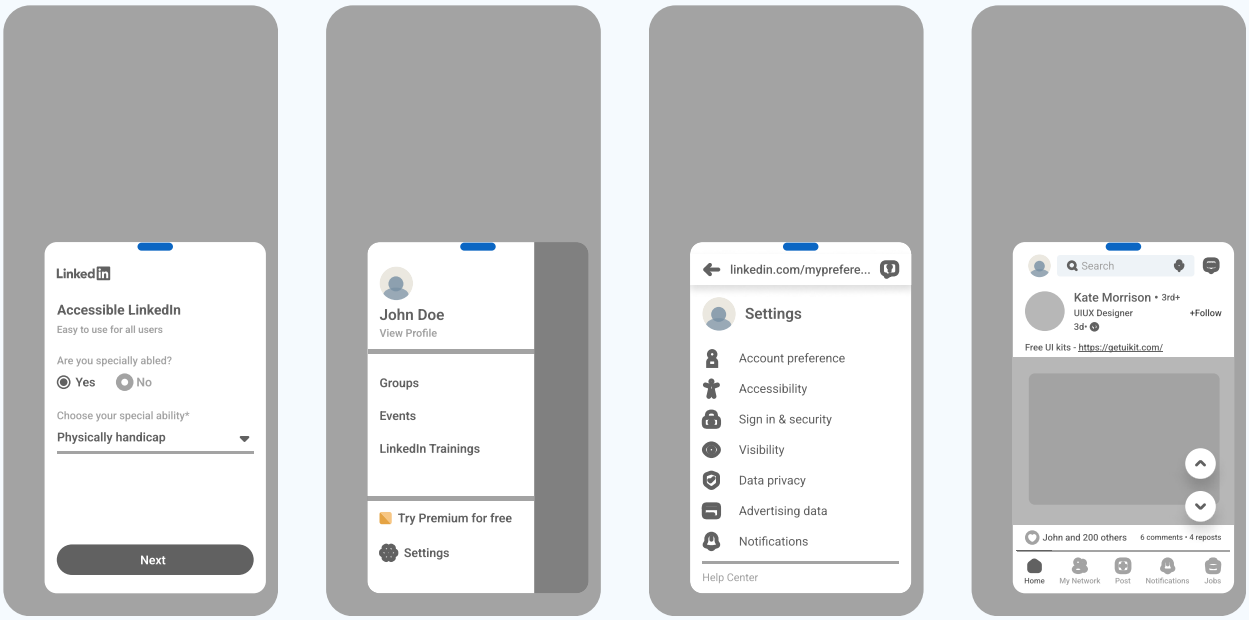
Lo Fi Wireframes





Mid Fi Wireframes



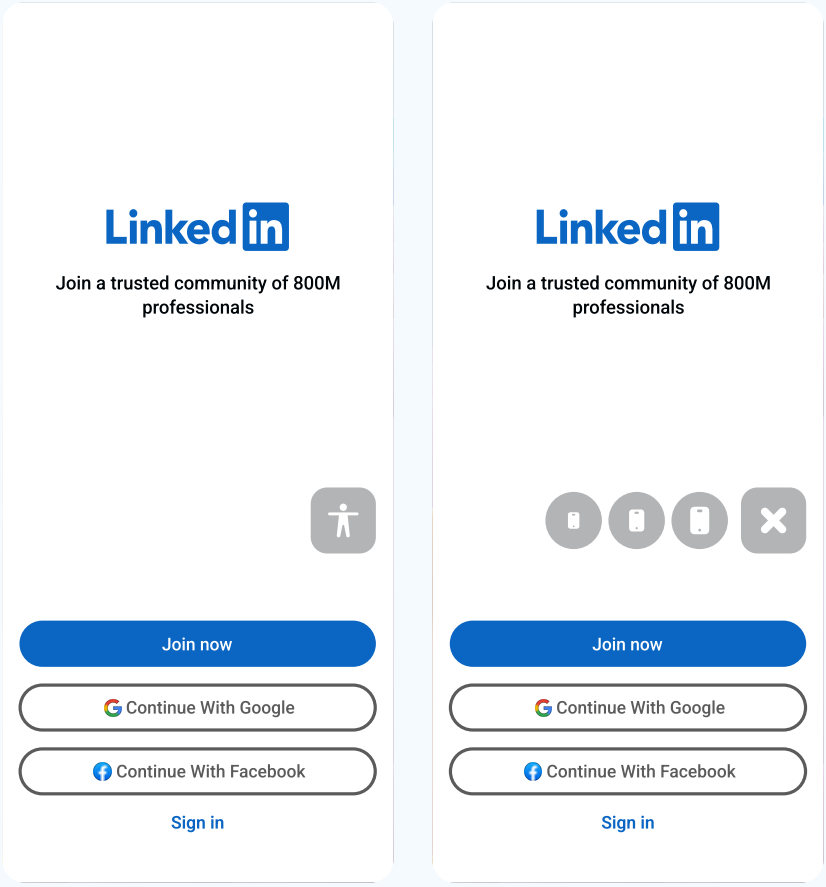


Chapter 10

Features - Iteration 1

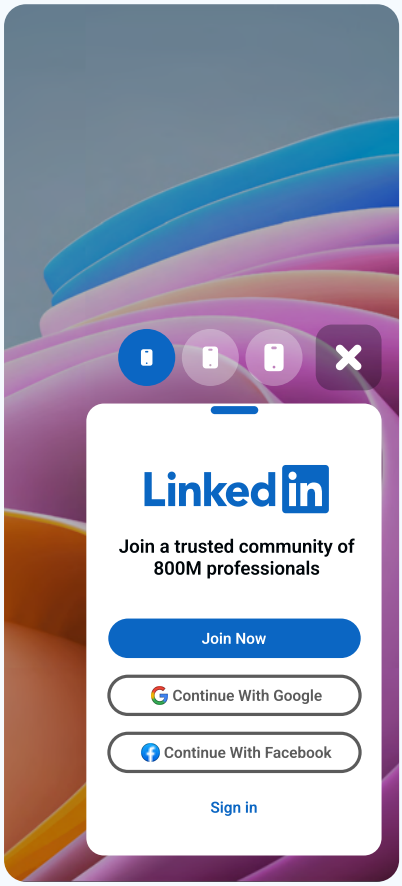
Features

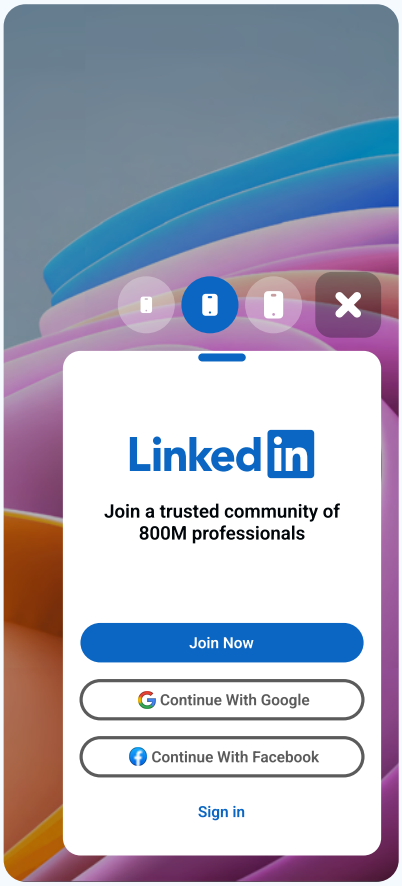
To enhance inclusivity on LinkedIn, we introduced an innovative **Assistive Ball** feature that can be conveniently positioned anywhere on the screen, based on the user's preference. This feature enables one-handed operation of the app, promoting accessibility. Upon activation, the Assistive Ball offers three distinct screen sizes: Mini, Standard, and Large

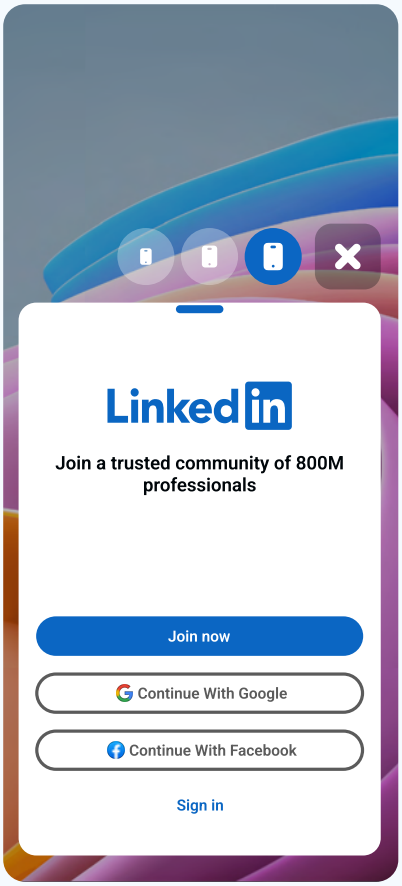


Features

The Assistive Ball offers **three** distinct screen sizes: **Mini, Standard, and Large**. The design choice was informed by our comprehensive research, which revealed challenges faced by users with hand disabilities when utilizing the zoom mode. By implementing **clickable buttons** for selecting their desired screen size, we aim to significantly improve the overall user experience and cater to the unique needs of every individual.

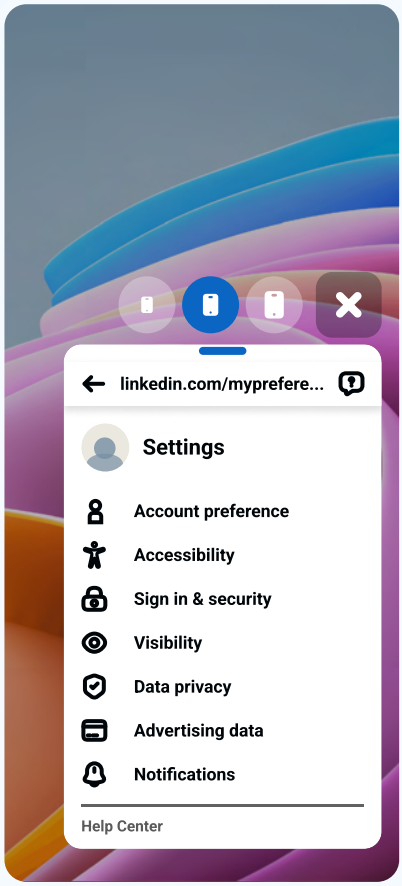






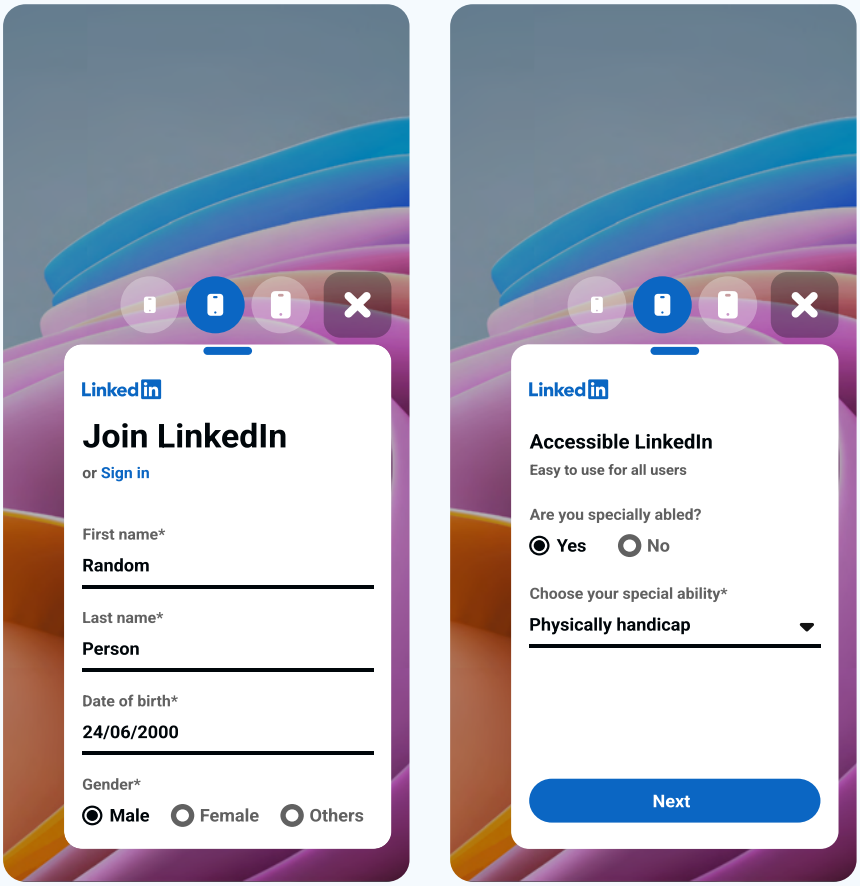
Features

To ensure the **accessibility feature** is readily available, we've strategically placed it within the Settings menu alongside other options. Previously, LinkedIn didn't offer a dedicated accessibility feature and relied on the built-in accessibility features of the operating system.



Features

To elevate LinkedIn's curation, we propose asking for birthdate, gender, and disability status during **onboarding**. This replaces the previous multi-step process in the demographic section, increasing relevancy of job suggestions and personalized feed for user motivation.



Chapter 11

Testing Brief

Testing Brief

Project Brief: Testing LinkedIn for Special Needs

Project Duration: 3 weeks

Project Overview:

In an increasingly interconnected world, social and professional networking platforms play a pivotal role in shaping the career trajectories and personal lives of individuals. For many, LinkedIn is a vital tool for establishing professional connections and exploring employment opportunities. However, for Persons with Disabilities (PWD), accessing and utilizing this platform can present unique challenges. Our project, "Inclusive LinkedIn Enhancement for Persons with Disabilities," is a dedicated effort to address these challenges by making LinkedIn more accessible and user-friendly for PWDs.

Project Objectives:

1. **Accessibility Improvement:** The primary objective of this project is to enhance the accessibility of LinkedIn for PWDs, ensuring that they can easily navigate and utilize the platform to build their professional networks and seek employment opportunities.
2. **Usability Enhancement:** We aim to improve the overall usability of LinkedIn for PWDs by addressing the specific pain points they encounter when setting up profiles, browsing job listings, and engaging with the platform's features.
3. **Incorporating Disability-Related Information:** In the realm of profile setup, we aim to reduce the cognitive load for users by incorporating disability-related information seamlessly. This includes providing options for users to highlight their skills, talents, and accommodations needed due to their disabilities.
4. **Job Preferences Customization:** In the context of job preferences, we intend to make the job search process more accommodating by integrating relevant assistive technologies and accommodating options that match the unique requirements of PWDs.

Project Brief

Project Objectives:

- **Profile Setup Optimization:** Streamlining the process of creating and managing LinkedIn profiles for PWDs by providing guided steps and intuitive forms for entering disability-related information**.**
- **Job Preferences Customization:** Developing a system that allows users to specify their requirements and preferences related to job opportunities, including necessary accommodations and assistive technologies.
- **Accessibility Improvements:** Implementing changes to the LinkedIn platform's design and functionality to enhance accessibility, such as improved screen reader compatibility, keyboard navigation, and alternative text for images.
- **Usability Enhancements:** Refining the user interface and experience to ensure a seamless and intuitive experience for PWDs, addressing usability challenges and improving the overall user experience.

Testing and Validation:

To ensure the success of our project, we will employ a variety of testing methodologies, including card sorting, tree testing, usability testing, and heuristic evaluation. These tests will help us evaluate the effectiveness of our enhancements and identify areas for improvement.

Expected Outcomes:

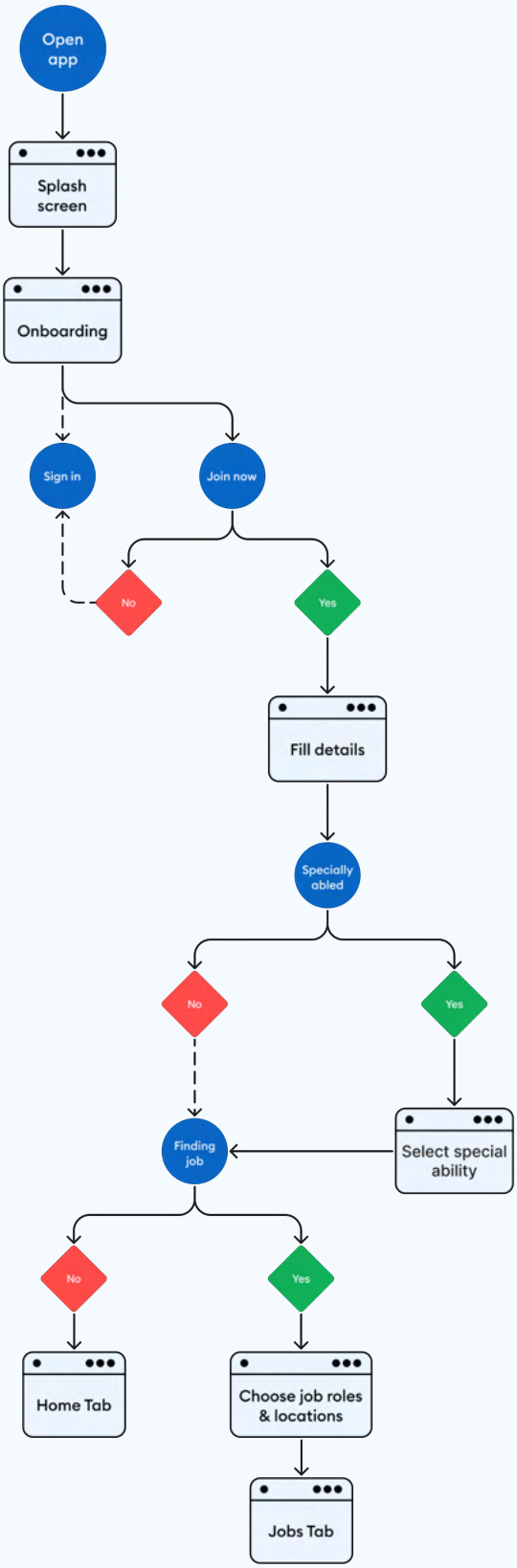
The project aims to achieve the following outcomes:

1. A more inclusive LinkedIn platform that caters to the needs of PWDs.
2. Improved accessibility and usability for PWDs, leading to a more streamlined and equitable user experience.
3. A system for users to customize their job preferences to match their unique requirements.
4. Enhanced features for seamlessly incorporating disability-related information in user profiles.

Chapter 12

Prev. User Flow

Prev. User Flow



Chapter 13

Features - Iteration 2

Ideation

Profile Setup :

1. **Disability Highlighting:** In the enhanced Profile Section, users will have the option to highlight their disability as a tag, prominently displayed under the "Open to Work" tag. This feature aims to increase transparency and help potential employers or connections understand their unique needs and qualifications.

2. **Proper Classification:** To ensure inclusivity, a comprehensive classification system for disabilities will be incorporated. This will allow users to accurately and respectfully describe their specific disability, ensuring that they are better understood within the professional community.

3. **Profile Reorganization:** The reorganization of profile sections will simplify the setup process. By reordering and grouping related information, users will find it easier to complete their profiles and showcase their skills and experiences, including any accommodations they may require.

4. **Assistive Technology Suggestions:** Based on the disability mentioned, the platform will suggest relevant workplace assistive technologies that can aid users in performing their job roles more effectively. This feature not only provides practical support but also fosters an inclusive work environment.

4. **Government Disability Certificate:** Users will have the option to add a government-provided certificate of disability to their profile. This certificate will serve as official documentation, reinforcing the authenticity of their disability status and needs, thereby fostering trust within the professional network.

Ideation

Job Preferences :

1. **Inclusive Job Descriptions:** In this section, users will be able to draft inclusive job descriptions. These descriptions will not only specify job roles but also detail how the workplace accommodates diverse abilities, promoting a welcoming and inclusive atmosphere.

2. **Assistive Technology Requirements:** A separate section will be dedicated to specifying workplace assistive technology requirements. Users can outline the specific tools or accommodations necessary to perform their job effectively, ensuring employers can provide suitable support.

3. **Disability Description:** Users will have the option to add a brief description of their disability. This can provide context to potential employers and connections, fostering a better understanding of individual needs and unique perspectives.

4. **Minimum Pay Accepted:** To address the financial aspects of job preferences, users can specify the minimum acceptable pay for job opportunities. This ensures that job offers align with their financial expectations and needs.

Chapter 14

Research Plan

Research Plan

Goals :

The primary goals of this card sorting activity are to:

1. Understand users' mental models regarding the additive features related to disabilities on LinkedIn.
2. Identify and comprehend the issues and challenges users encounter with the structuring of some features in the current LinkedIn design, particularly in the context of disabilities.

Methods:

We will employ a hybrid card sorting approach, which combines open card sorting and closed card sorting methods. This approach is appropriate since we have a mixture of new features and adjustments to existing ones. Participants will be presented with cards representing different features and will be asked to organize them into categories or groups. The open card sorting aspect allows participants to create their own categories, while the closed card sorting part involves sorting features into predefined categories.

Participants:

We will target a diverse range of participants, including individuals with disabilities, those who have close relationships with disabled individuals, human resource professionals who are involved in hiring individuals with disabilities, and individuals who work closely with the disabled community (e.g., doctors, physicians, and physiotherapists). Additionally, we will involve individuals who are familiar with LinkedIn.

Screening Questions:

1. What is your current role or profession, and how does it relate to disability inclusion, accessibility, or accommodations?
2. Have you worked directly with individuals with disabilities or within the disability community in any capacity?
3. Are you currently affiliated with an organization or role that focuses on disability-related initiatives, services, or advocacy?
4. Are you familiar with LinkedIn's features and have you used it professionally or personally in any significant way?

Chapter 15

Card Sorting

Card Sorting

Moderated hybrid card sorting is especially useful when you want to strike a balance between understanding how users naturally categorize information (open card sorting) and evaluating an existing information structure (closed card sorting). It allows for flexibility and user input while also providing structure and guidance to the sorting process. This method helps in making informed decisions about the organization of content, navigation, and labeling to create a user-centered information architecture.

- Open Card Sorting: In traditional open card sorting, participants are presented with a set of unlabeled cards, each representing a piece of content or information. The participants are asked to group these cards into categories that make sense to them. This method helps in understanding how users naturally organize and label content.

- Closed Card Sorting: In closed card sorting, participants are given a set of cards with predefined categories or labels. They need to assign each card to one of these pre-established categories. This method is useful for evaluating an existing information structure.

- Moderation: In moderated hybrid card sorting, a moderator or facilitator guides the process. They have a set of cards representing content and predefined categories, just like in closed card sorting. However, the moderator also allows participants some degree of freedom to create new categories or suggest modifications to the predefined ones.

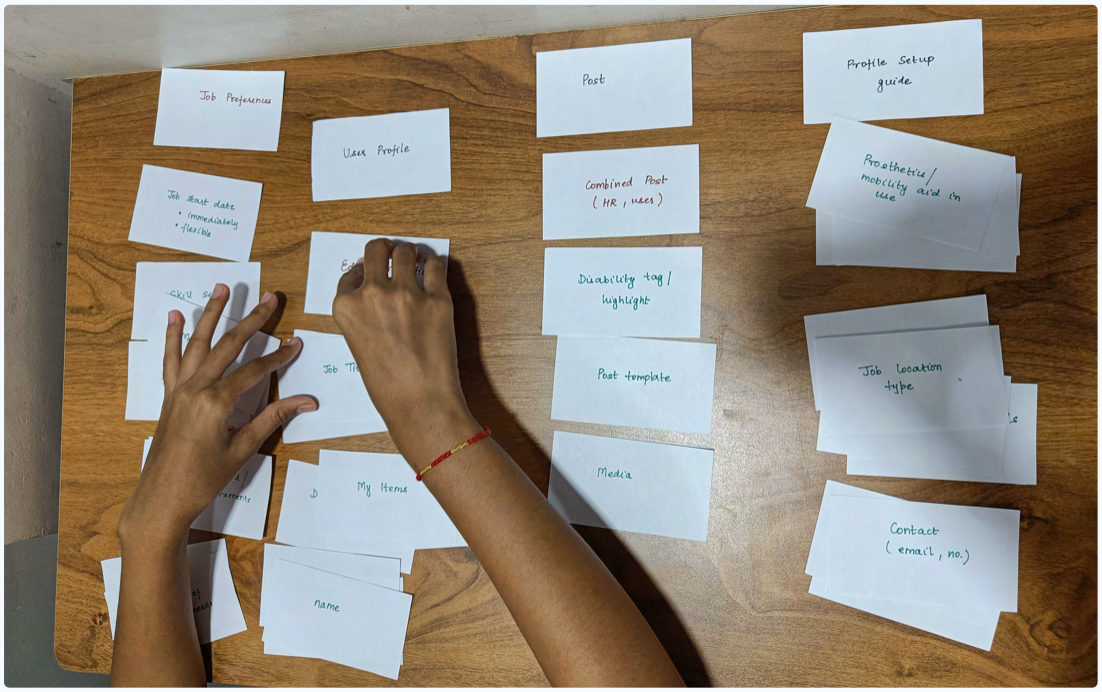
Participant Interaction: Participants work through the card sorting exercise while the moderator observes and guides the process. They can ask questions to understand participants' reasoning for their category assignments, or they can clarify any uncertainties. The moderator ensures that the participants have the opportunity to provide their insights and suggestions.

Data Collection: The data collected during moderated hybrid card sorting includes the grouping of cards into categories, the creation of new categories (if any), and any comments or insights shared by participants during the process. This data can be valuable for improving the information structure of a website, app, or other digital products.

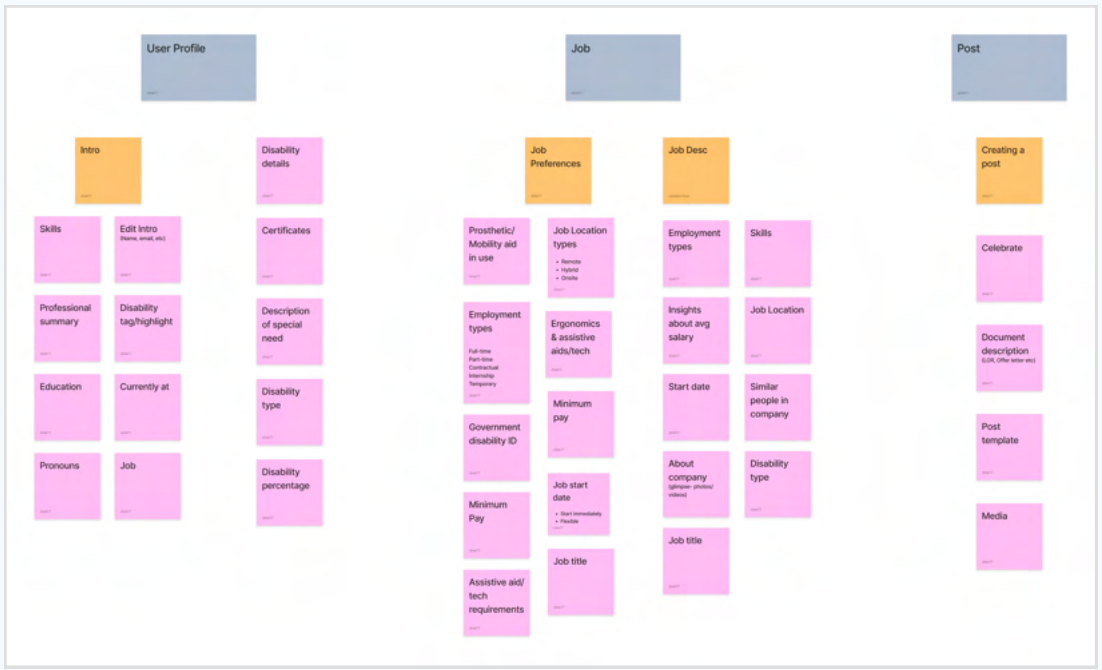
Analysis: After the card sorting session, the collected data is analyzed to identify patterns, common categorization trends, and areas where users may struggle or have different perspectives on content organization. This analysis informs the design and organization of the digital product, aiming to make it more intuitive and user-friendly.

Card Sorting

Moderated Hybrid Card Sorting:



Participant 1: Offline Card Sorting



Participant 2: Online Card Sorting using Figjam

Card Sorting

	Introduction		Profile Setup Guide	Resources	Job Preferences		Job Opening (JD)	Create New
	General	Related to Disability			General	Related to Disability		
Name	100							
Pronouns	58.33333333							
Headlines	83.33333333							
Industry								
Education	75		66.66666667					
Location	33.33333333		58.33333333					
Contact Info	66.66666667		50					
Background Summary			91.66666667					
Personal Details			83.33333333					
Open To Work	83.33333333				75			
Currently At	50							
Profile Levels								
Analytics								
Creator Mode			16.66666667	8.333333333				
My Network	8.333333333			25				
Personal Demographic	33.33333333							
Activity				16.66666667				
My Items				66.66666667				
Professional Summary	8.333333333		83.33333333		33.33333333			
Experience			50					
Skills	66.66666667		66.66666667					8.333333333
Interests								
People Also Viewed								
People you may know								
Disability Tag / Headline	25	66.66666667					58.33333333	
Disability Type	25	66.66666667					66.66666667	
Disability Details	16.66666667	75					66.66666667	
Prosthetics / Aid in use		83.33333333						
Assistive Aid / Tech Req.		33.33333333				66.66666667		
Desc. Of Special Need		33.33333333				58.33333333	66.66666667	
Job Title	8.333333333				50		83.33333333	58.33333333
Job Location Type					91.66666667		83.33333333	58.33333333
Employment Type					58.33333333		83.33333333	66.66666667
Job Start Date					58.33333333		83.33333333	58.33333333
Min Pay					83.33333333		83.33333333	8.333333333
Max Working Hours					25	8.333333333	16.66666667	
Govt. Disability ID		50						
Insights of Avg Salary		8.333333333			58.33333333			
Job Alerts								
Skills Matched							75	
Job Role Desc.							66.66666667	8.333333333
Disability % Accepted							66.66666667	
Ass. Tech. (Pics & Videos)							75	
Similar People in company							58.33333333	8.333333333
Description Text								8.333333333
Post Template								91.66666667
Media								83.33333333
Achievements								8.333333333
MNC Details							50	50
Document (Offer Letter)								25

Card Sorting

Insights Gained :

1. The LinkedIn "Resources" section in profiles lacks clarity and does not make sense to users.
2. Many participants were unaware of the existence of the "My Items" feature for saving posts.
3. Users often found the profile setup process to be overly complex.
4. There is a desire for a dedicated "Disability" subsection in profiles, which should be viewed positively, allowing individuals to openly acknowledge and express their passion for work.
5. The addition of a separate "Disability Requirements" section under job preferences is recommended to accommodate users' assistive technology needs.

Challenges Faced :

1. **Recruitment and Outreach:** Challenging to find diverse participants, particularly those with disabilities.
2. **Resource Allocation:** Demanding in terms of time and resources.
3. **Preconceived Notions:** Some users anticipate LinkedIn's complexity, influencing their decisions.
4. **Repetition and Ambiguity:** Duplicating cards led to confusion among participants.
5. **Sub-Grouping Complexity:** Handling niche feature redesign with multiple sub-categories was challenging.

Chapter 16

Tree Testing

Tree Testing

Tree testing, also known as "reverse card sorting" or "card-based tree testing," is a usability research method used to evaluate the effectiveness and efficiency of a website's or application's information architecture and navigation structure. Tree testing helps identify any issues or obstacles users might encounter when trying to find specific pieces of information or complete certain tasks on a website or app. Here's an explanation of how tree testing works:

Methodology:

1. **Create a Task-Based Structure:** To begin a tree test, you need a well-defined information architecture or site structure. This structure is typically represented as a hierarchical tree diagram, outlining the different categories, subcategories, and pages on your website or app.
2. **Generate Tasks:** The next step is to develop a set of tasks that represent common user goals or actions on your website or application. These tasks should be specific and actionable, such as "Find information about the return policy" or "Locate the contact details for customer support."
3. **Prepare the Test:**
   - Participants: You'll need a group of participants who represent your target audience. These participants should be unfamiliar with the website or app being tested.
   - Testing Tool: Use a tree testing tool or software to present the hierarchical structure and tasks to participants. These tools often enable you to log participants' interactions and collect data efficiently.

Conducting the Test:

1. **Instructions:** Provide participants with a brief introduction to the tree testing exercise. Explain that they will be given a set of tasks and asked to locate where they believe they would find the information needed to complete those tasks within the provided site structure.
2. **Task Execution:** Participants work through the tasks by selecting the categories and subcategories they believe contain the information necessary to complete each task. They navigate the tree structure by selecting one category at a time, and if they can't find the information in the selected category, they can backtrack or start over.
3. **Data Collection:** The testing tool records the path participants take while attempting to complete each task. This data includes which categories they select and how quickly they reach the correct destination, if at all.

Tree Testing

Analysis :

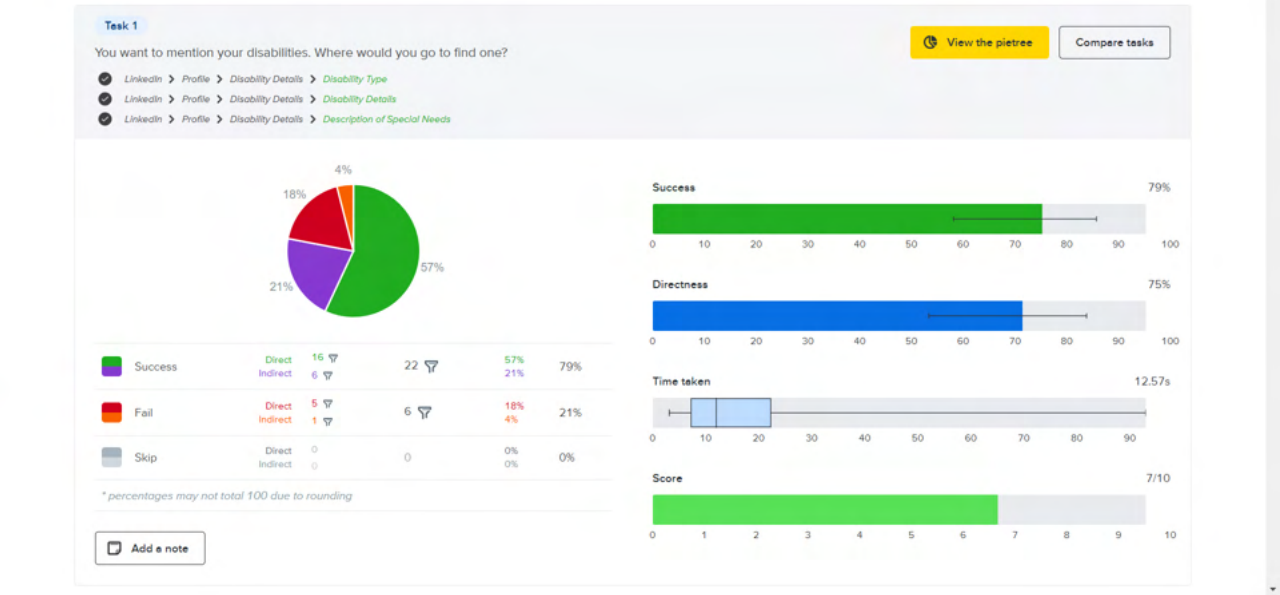
Once the tree testing is complete, you can analyze the collected data to evaluate the effectiveness of your information architecture and navigation structure:

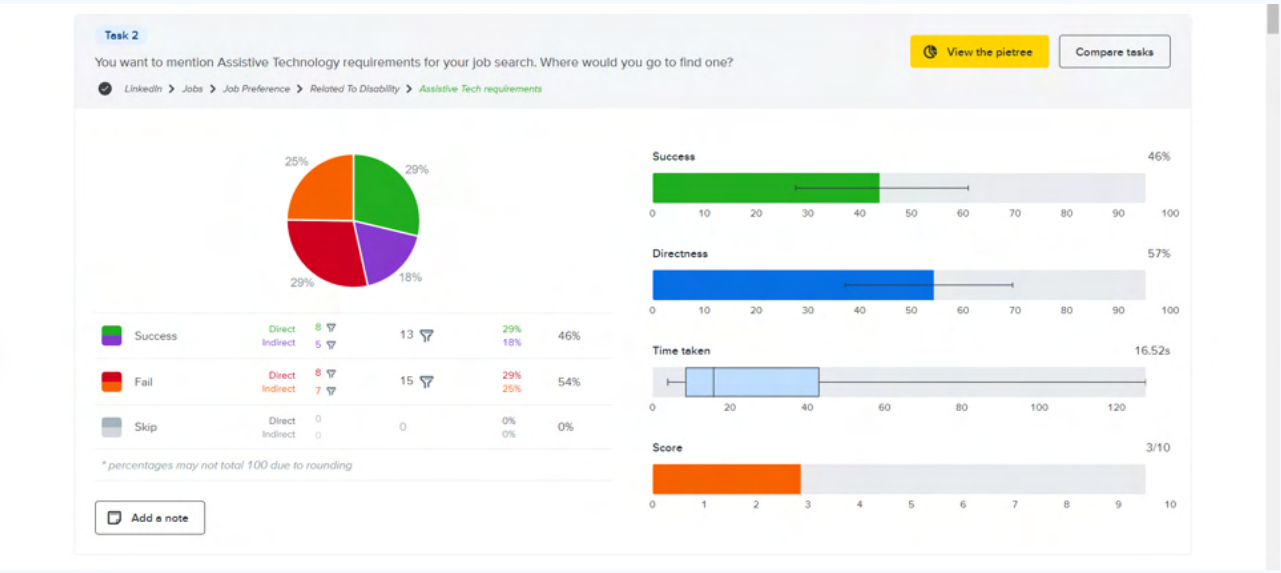
1. **Task Success Rate:** Calculate the percentage of participants who successfully completed each task. This helps identify which tasks are easy to accomplish and which might require structural improvements.
2. **Directness:** Assess how directly participants navigated to the correct location for each task. This information can indicate the efficiency of your structure.
3. **Paths and Abandonment:** Examine the paths participants took when trying to complete tasks. Identify common navigation patterns and any instances where participants abandoned tasks without success. This helps pinpoint areas where the structure can be improved.
4. **User Feedback:** Qualitative data, such as comments and observations from participants, can provide valuable insights into the reasons behind their navigation choices and frustrations.

Tree Testing

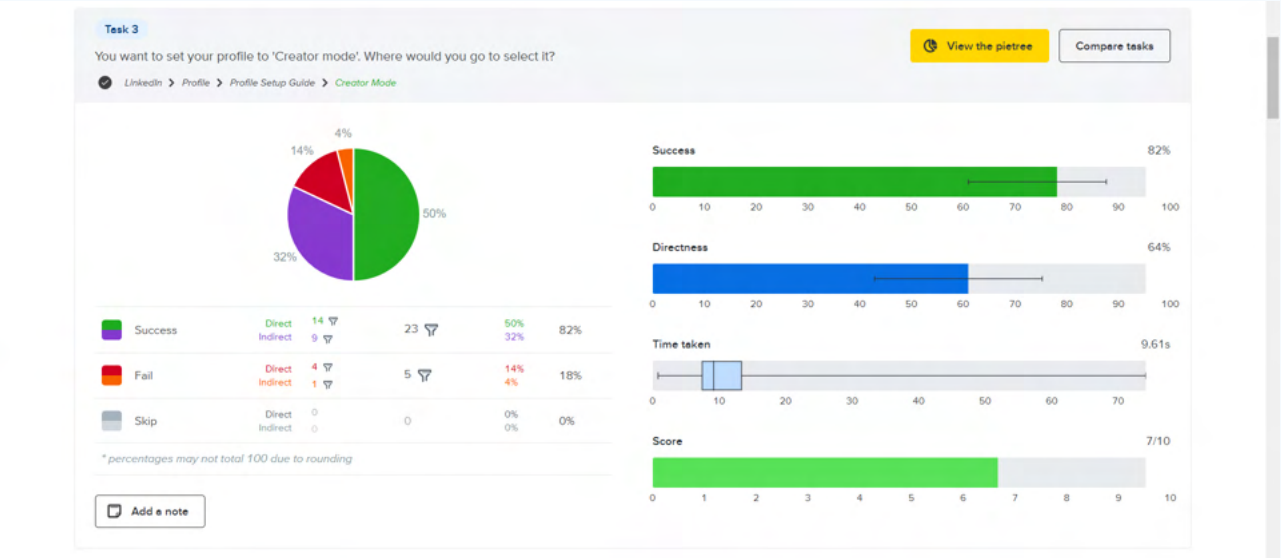
LinkedIn				
	Profile			
		Introduction		
			Name	
			Pronouns	
			Headlines	
			Industry	
			Education	
			Contact Info	
		Disability Details		
			Personal Demographic	
			Disability Tag / Headline	
			Disability Type	
			Disability Details	
			Description of Special Needs	
		Profile Setup Guide		
			About	
			Experience	
			Education	
			Skills	
			Creator Mode	
		Resources		
			Activity	
			My Items	
	Messaging			
	My Network			
	Post			
		Create New Post		
			Descriptive Text	
			Media Template	
			Photos	
			Achievements	
			Company Inclusive Details	
			Document (Offer Letter)	
	Notifications			
		Job Opportunities		
			Job Posting	
				Job Title
				Skills matched with job role
				Job role description
				Disability % Accepted
				Assistive Technology (Pics & Videos)
				Other Disabled people works here
	Jobs			
		My Jobs		
		Job Preference		
			Open To Work	
				Job Title
				Job Location
				Employment Type
				Insights of Avg Salary
			Related To Disability	
				Desc of Special Needs
				Min Pay
				Govt. Disability ID
				Assistive Tech requirements
			Job Alerts	
				List of Job Openings
		Post a Job		
		Job Opportunities		
			Job Title	
			Skills Matched	
			Job Role Description	
			Disability % accepted	
			Assistive Tech (Pics & Videos)	
			Other Disabled people works here	

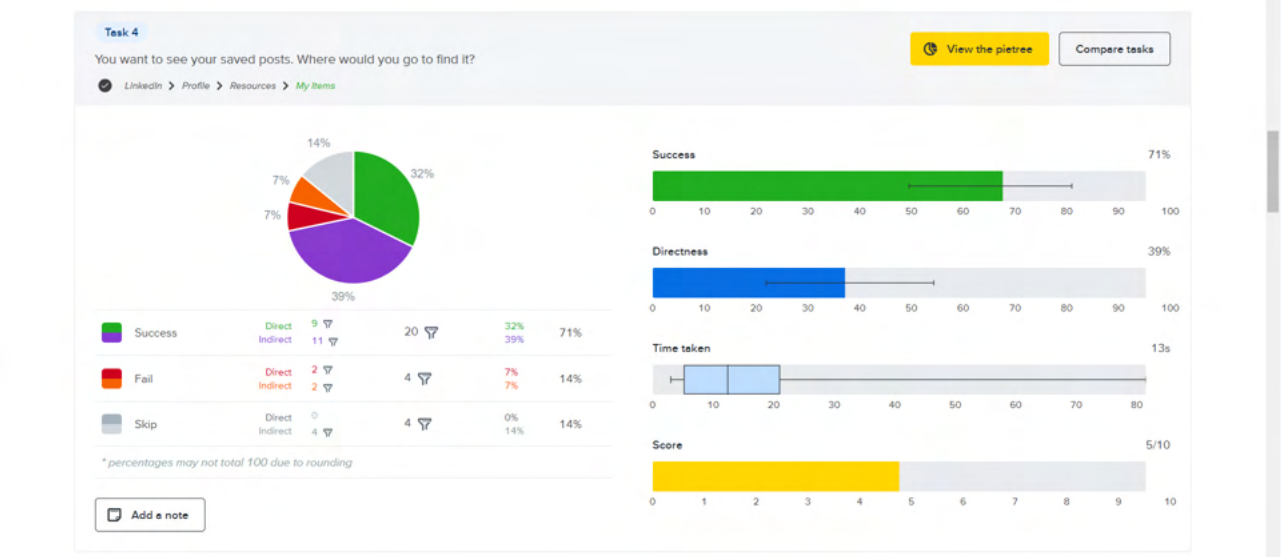
Tree Testing





Tree Testing





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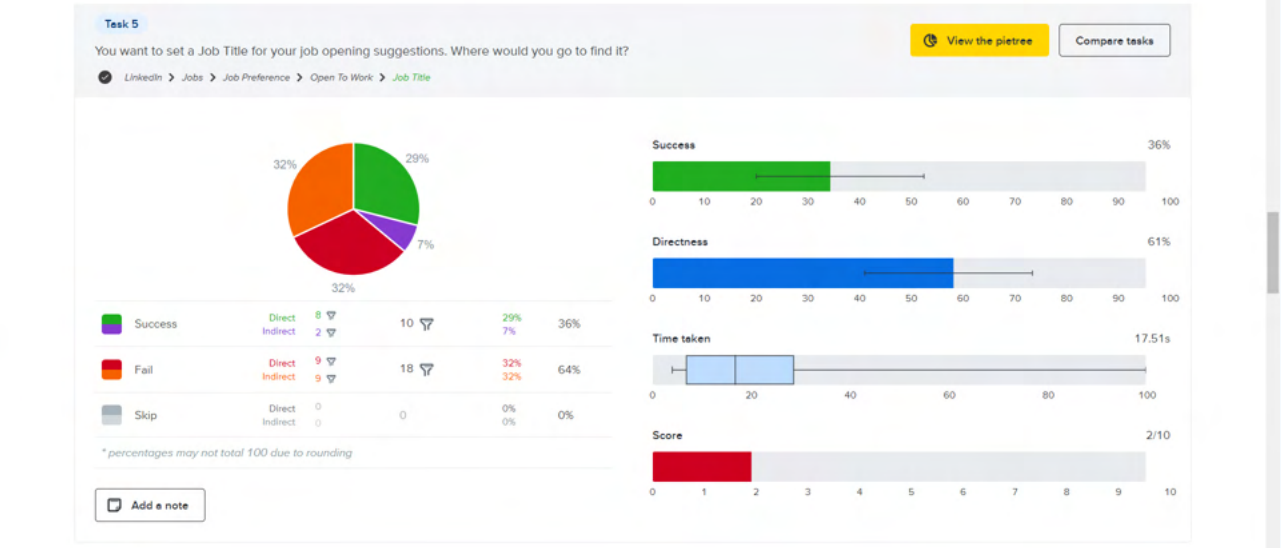
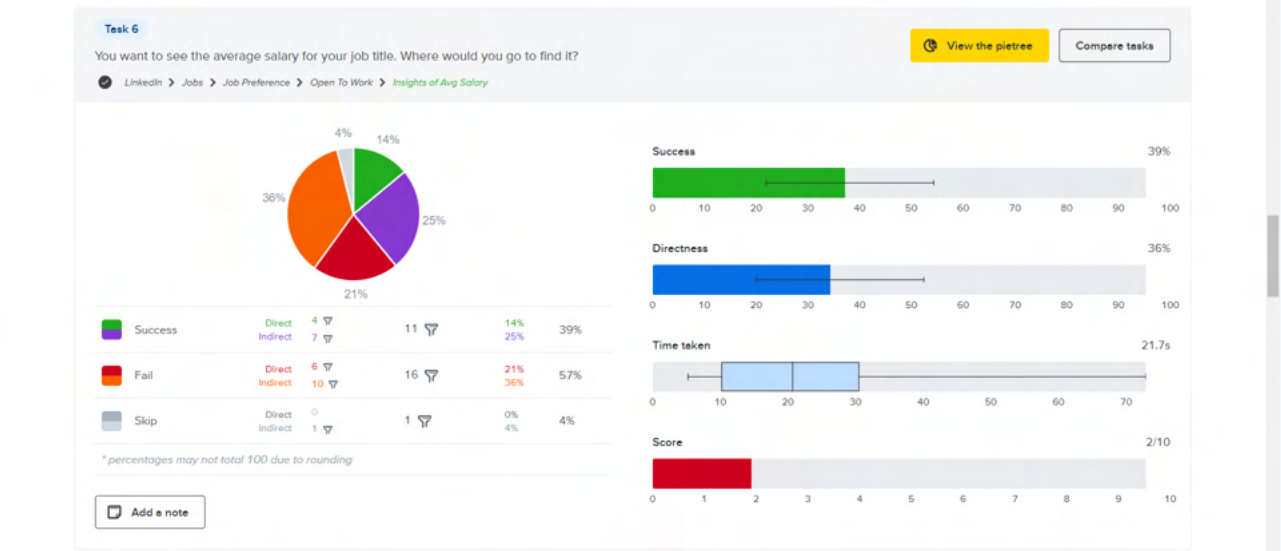
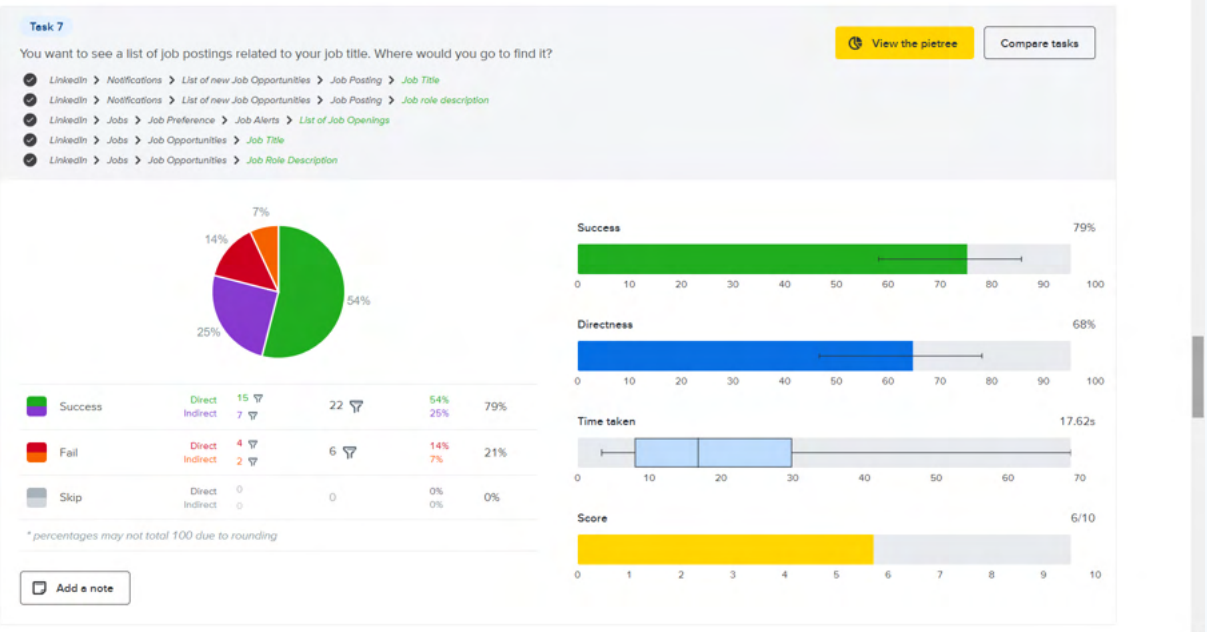
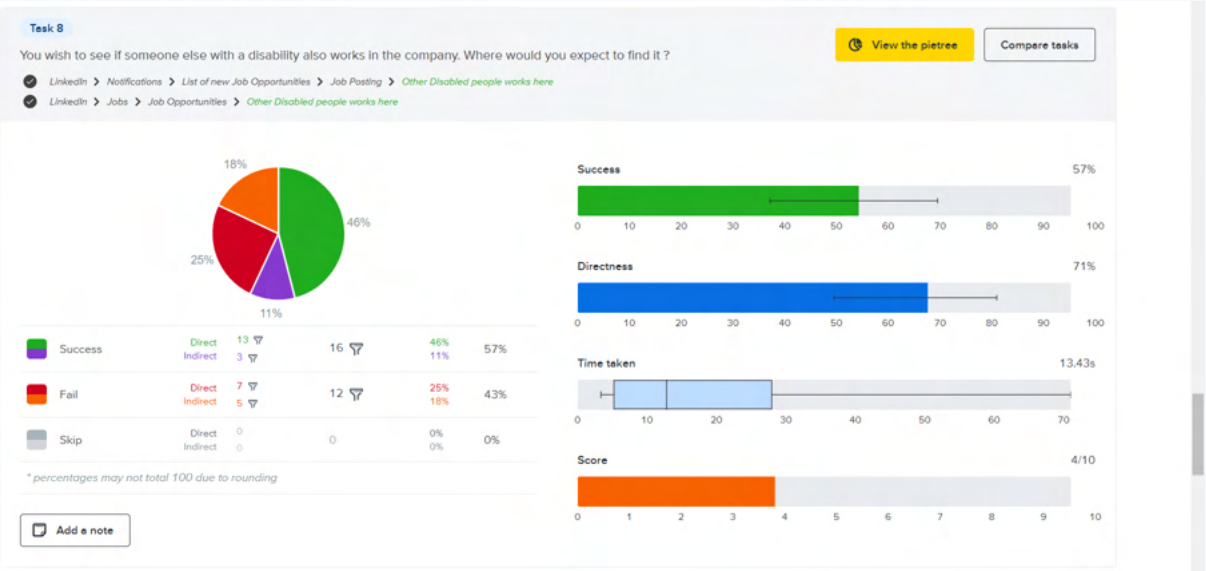


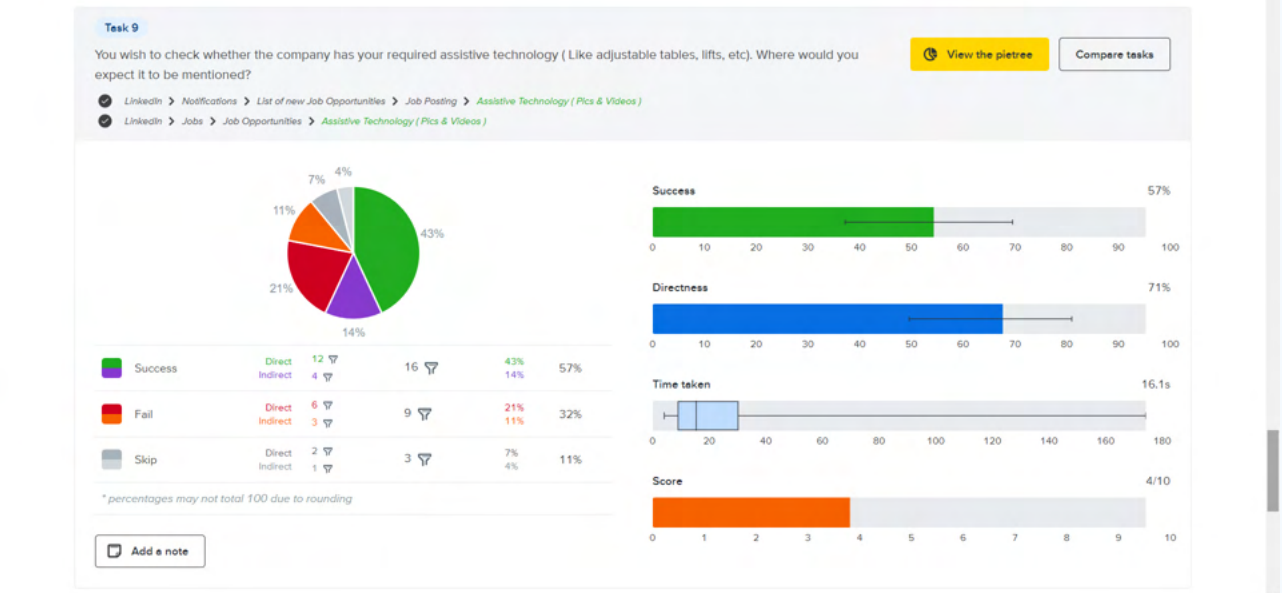


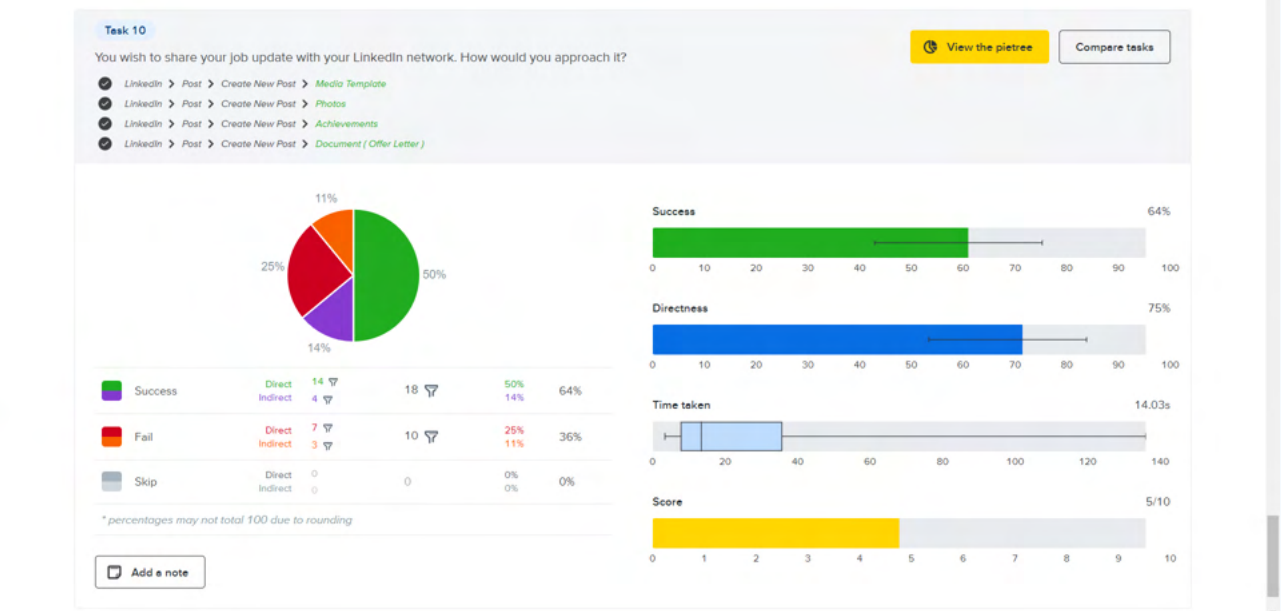
Tree Testing





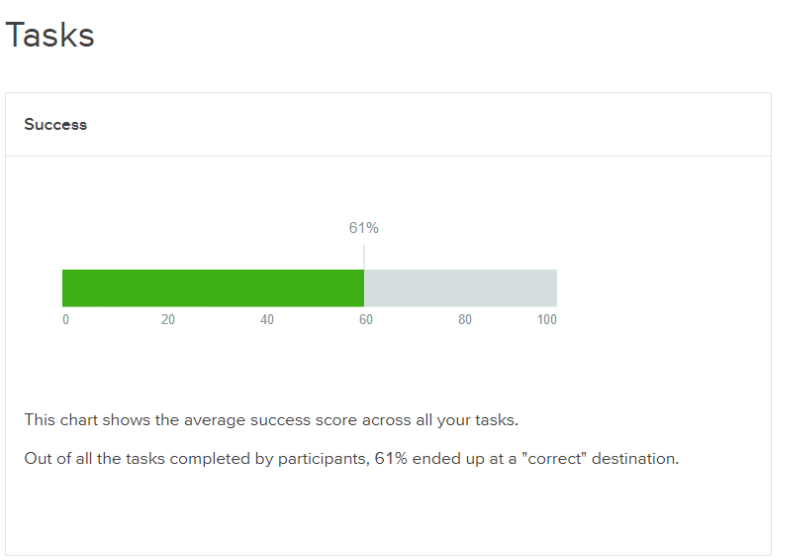
Tree Testing

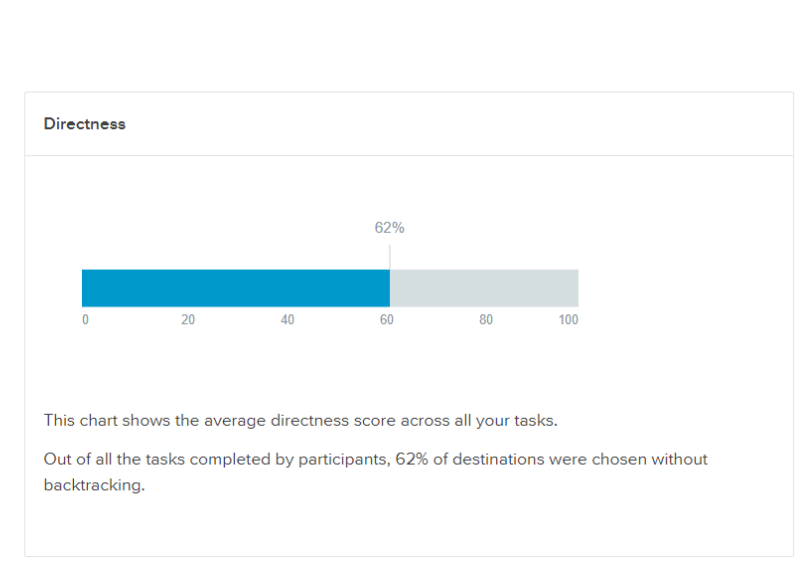


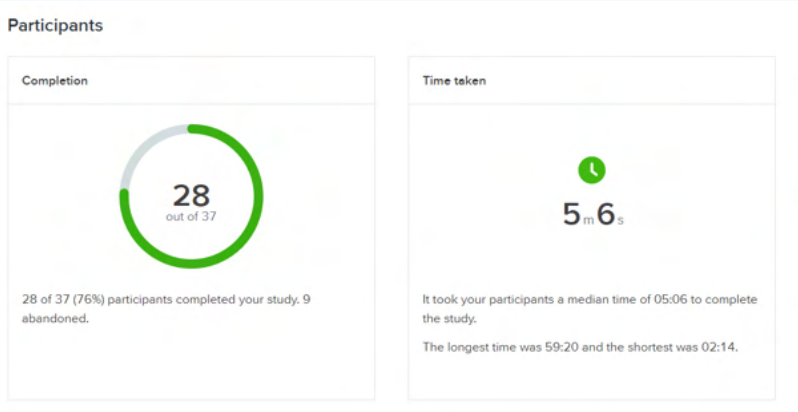


Tree Testing

Analysis :



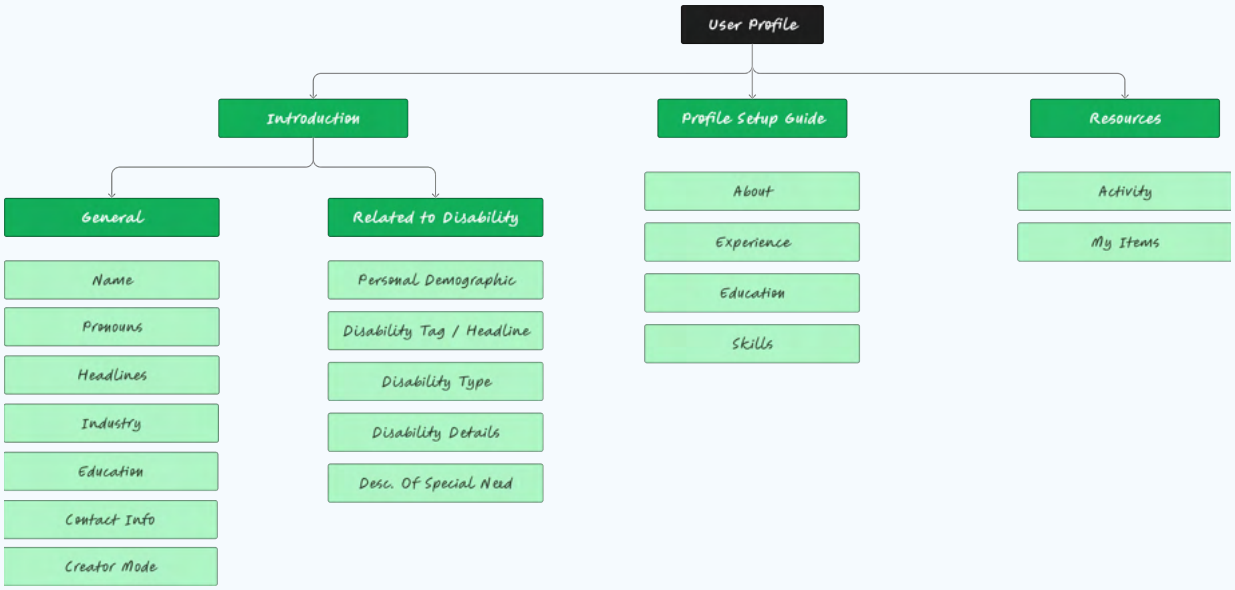


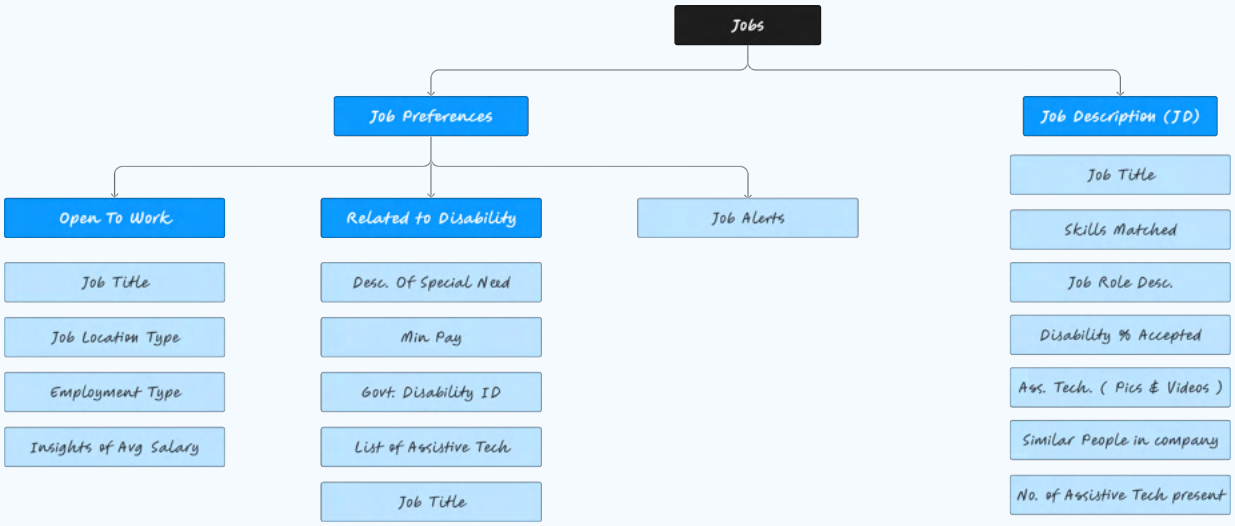


Chapter 17

Updated Site Map

Updated Site Map



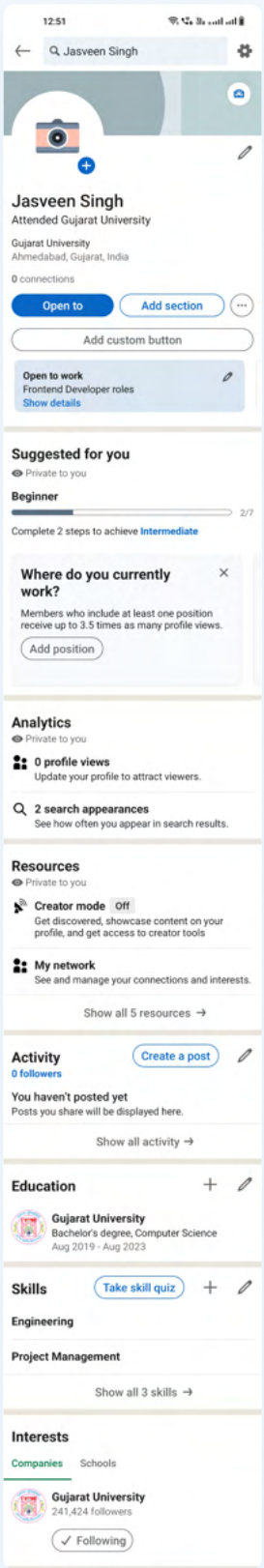


Chapter 18

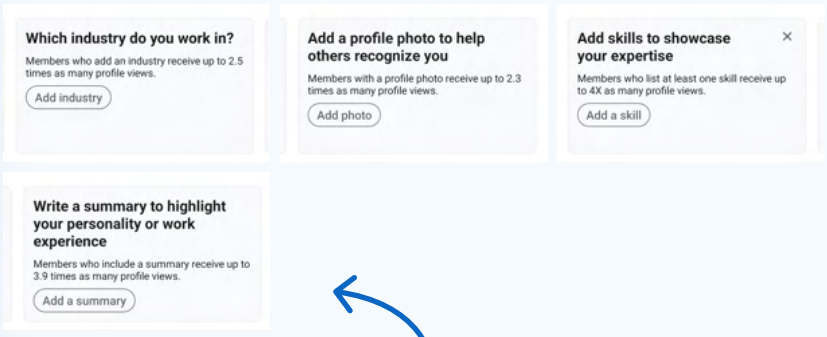
UI Screens

UI Screens

User Profile Screen - Existing



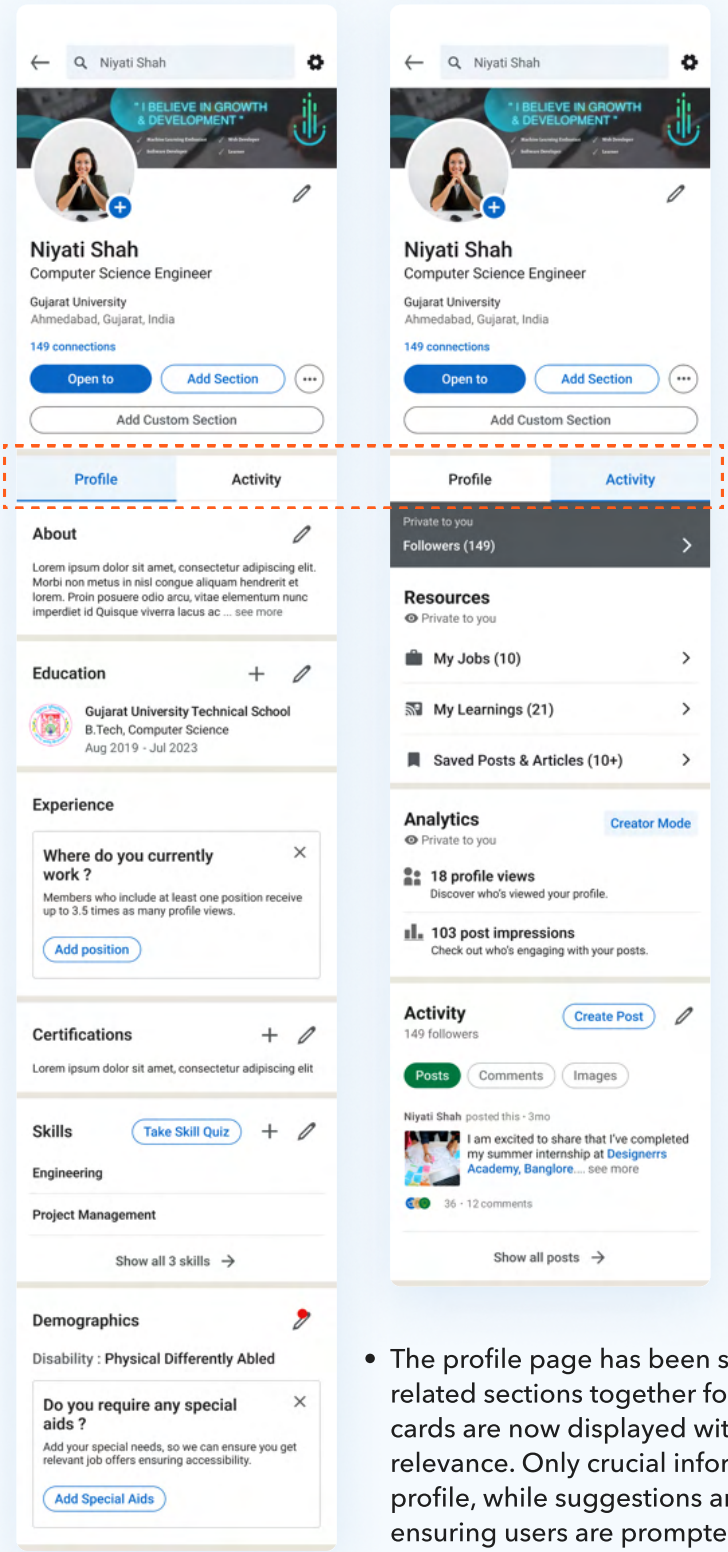
- Setting up a new profile can be overwhelming for users, as assigning beginner and intermediate levels for gamification purposes can create a burden, leading users to perceive the process as too lengthy. Consequently, a significant number of users have dropped out during profile completion.



- The use of cards to guide users through completing steps and levels does not contribute to creating a comprehensive profile. Some segments are left incomplete, necessitating revisits to certain sections. Additionally, all cards for various sections are grouped together, further complicating the profile-building process.

UI Screens

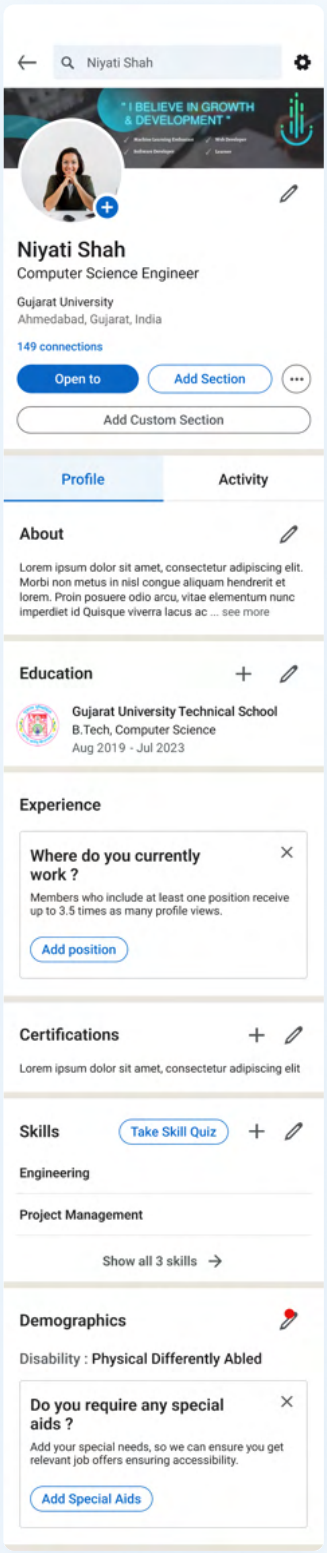
User Profile Screen - Redesigned



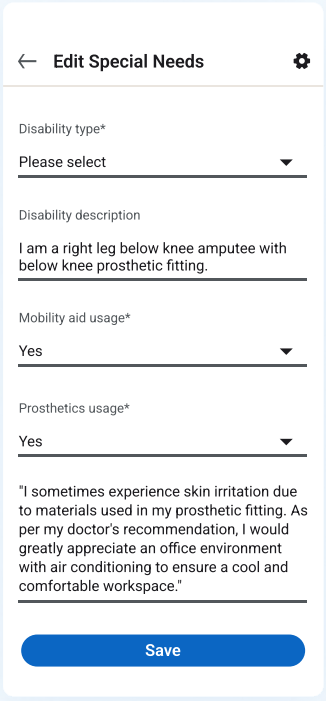
- The profile page has been segregated into two tabs, grouping related sections together for improved organization. Suggestion cards are now displayed within the respective sections to enhance relevance. Only crucial information is featured prominently on the profile, while suggestions are notified through the edit button, ensuring users are prompted to review and complete the necessary steps during interactions, visits, and profile edits.

UI Screens

Special needs Description - New Section



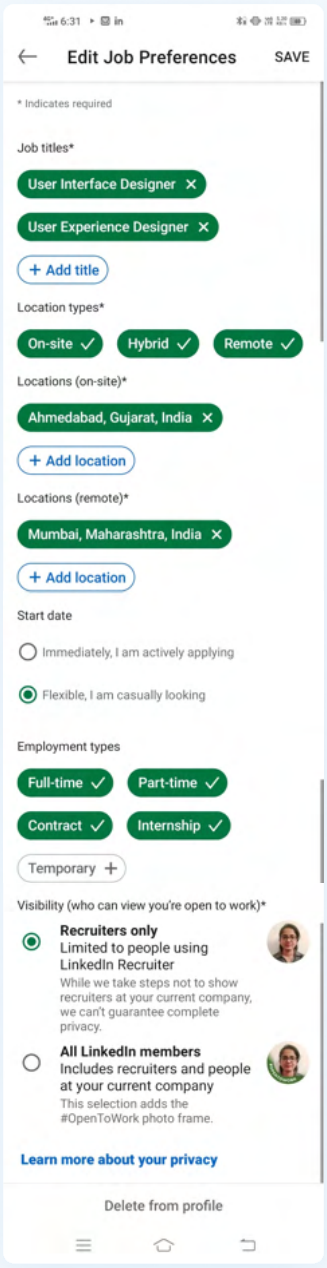
- The profile page has been segregated into two tabs, grouping related sections together for improved organization. Suggestion cards are now displayed within the respective sections to enhance relevance. Only crucial information is featured prominently on the profile, while suggestions are notified through the edit button, ensuring users are prompted to review and complete the necessary steps during interactions, visits, and profile edits.



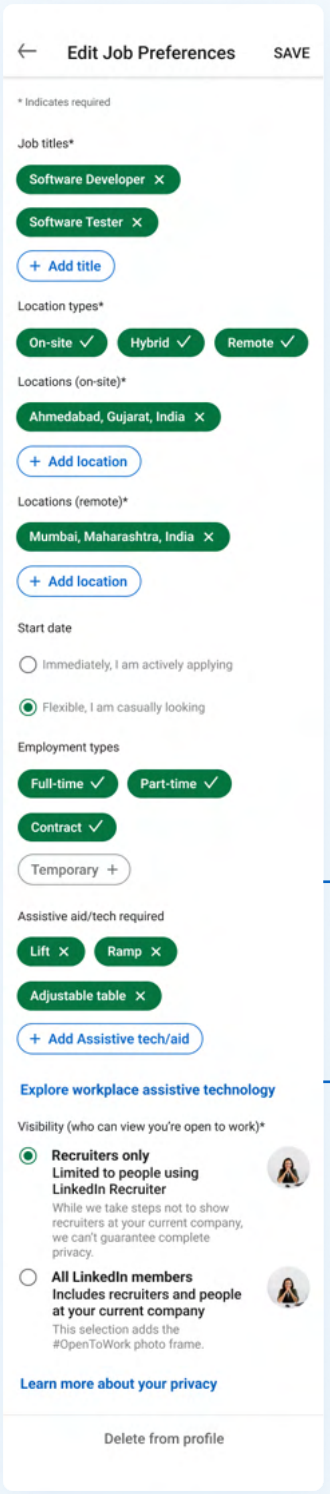
UI Screens

Job Preferences

Existing



Redesigned



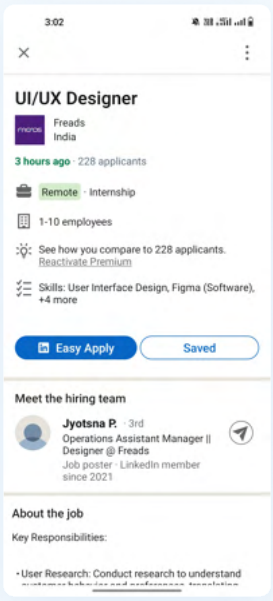
Added workplace assistive technology preferances

- A separate section is dedicated to specifying workplace assistive technology requirements. Users can outline the specific tools or accommodations necessary to perform their job effectively, ensuring employers can provide suitable support.

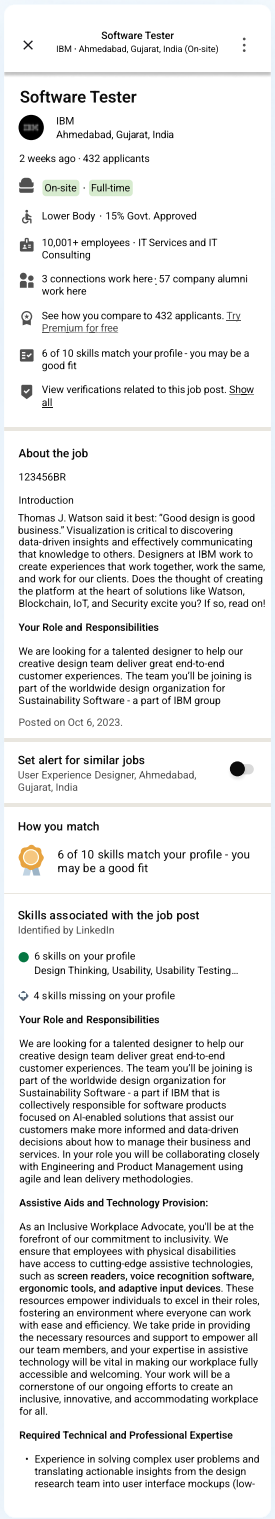
UI Screens

Job Description - Added Section

Existing



Redesigned



Government approved disability %

Ergonomic Specifications

Chapter 19

Usability Testing

Usability Testing

1. Define the Scope of the Test :

The objective of this usability test is to assess the understandability and user-friendliness of recently proposed solutions within the system. We aim to understand how easily users can navigate through the newly added features. This includes evaluating the clarity of the solutions and their overall coherence with user expectations. By conducting this test, we intend to identify areas where enhancements or adjustments are necessary to optimize the user experience.

2. Formulate Tasks:

Task 1: Creating a Profile Using the Profile Guide Feature

- In this task, participants will be asked to utilize the Profile Guide feature to create a profile on the platform. We will observe their interactions and assess whether they can successfully complete this essential action. Insights will be gathered regarding the intuitiveness and effectiveness of the Profile Guide.

Task 2: Adding Assistive Technology Requirements

- It involves participants adding their specific assistive technology requirements to their profiles. This task will help us understand how well the system accommodates such needs and whether users encounter any obstacles while doing so. Insights will guide us in improving the platform's accessibility features.

Task 3: Evaluating the Suitability of a Job Description and Its Inclusivity

- - For this task, participants will evaluate a job description to determine if it aligns with their preferences and is inclusive, especially regarding persons with disabilities. The goal is to gauge the inclusivity of job postings and identify any shortcomings in the current system.

3. Recruit Participants:

- Participants should be active users of the LinkedIn platform to ensure their familiarity with its features and functionalities.
- Participants should either have personal experience with disabilities or be closely related to persons with disabilities. This criterion is essential as it enables us to gain insights into the platform's accessibility and inclusivity aspects. Participants meeting this criterion will be better equipped to evaluate the platform from an accessibility perspective.

Usability Testing

4. Usability Testing Test Guide

Introduction:

Welcome to our usability testing session. The purpose of this session is to gather your valuable feedback on the LinkedIn platform's new features and their usability. Your insights will help us improve the user experience for all users.

Task 1: Creating a Profile Using the Profile Guide Feature

Objective: Evaluate the effectiveness and user-friendliness of the Profile Guide feature.

Instructions:

a. Access your LinkedIn profile.
b. Locate and utilize the "Profile Guide" feature to create or update your profile.
c. Follow the prompts and fill in the required information as instructed.
d. Please think out loud as you proceed, sharing your thoughts, observations, and any difficulties you encounter.

Task 2: Adding Assistive Technology Requirements

Objective: Assess how well the platform accommodates assistive tech requirements.

Instructions:

a. Go to your profile.
b. Add any specific assistive technology requirements that you may have. You can find this option in the profile settings.
c. Note your experience. Were there any challenges or areas of improvement related to this task?

Task 3: Evaluating the Suitability of a Job Description and Its Inclusivity

Objective: Evaluate a job description to determine its inclusivity and alignment with your preferences.

Instructions:

a. Click on a provided job listing.
b. Assess the job description for inclusivity, considering how well it caters to persons with disabilities.
c. Share your thoughts on whether the job description aligns with your preferences and the inclusivity aspect.
d. Highlight any aspects that you find noteworthy or areas where improvements could be made.

Usability Testing

4. Usability Testing Test Guide

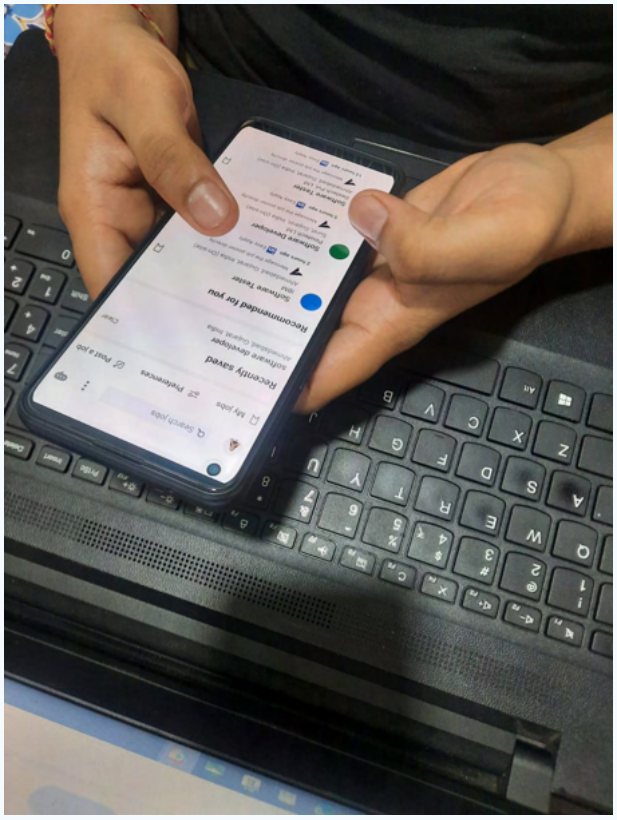
General Guidelines:

- Please be honest and provide candid feedback. Your insights are highly valuable to us.
- Think aloud during the tasks, sharing your thought process, any difficulties you encounter, and your overall impressions.
- If you encounter any issues or errors during the tasks, please let us know.
- This session should take approximately [time estimate] to complete.

Closing:

Thank you for your participation in this usability testing session. Your input is immensely valuable in helping us enhance the LinkedIn platform. If you have any additional comments or feedback beyond the tasks, please feel free to share them. We appreciate your time and insights.

5. Conduct the testing session:



Participant 1:Doing usability testing

Usability Testing

Insights Gained :

Task 1: Creating a Profile Using the Profile Guide Feature:

- Users found profile setup with the Profile Guide efficient and user-friendly.
- Dividing the profile into two sections made information more digestible.
- Familiar users appreciated the updated UI, though an adjustment period is expected. The new design was seen as a simplified improvement over the older version.

Task 2: Adding Assistive Technology Requirements:

- Adding assistive tech preferences was easy, either directly or through browsing.
- Users praised the feature for promoting inclusivity in the workspace.
- Placing job preferences directly on the jobs page and creating sub-sections was seen as a logical and intuitive design choice.
- The inclusion of suggested assistive technology options based on disabilities streamlined the process.

Task 3: Evaluating the Suitability of a Job Description:

- Company Info Organization: Users suggested better segmentation of company information for improved readability.
- Inclusivity Features: Users valued inclusive features but recommended maintaining a balance between disability-related information and other job details.
- Differentiating Disabilities: Users felt disability-related information should be informative without overshadowing other job aspects, striking a balance between inclusivity and job details.

Challenges Faced :

1. **Recruitment and Outreach:** Challenging to find diverse participants, particularly those with disabilities.
2. **Resource Allocation:** Demanding in terms of time and resources.
3. **Preconceived Notions:** Some users anticipate LinkedIn's complexity, influencing their decisions.

Chapter 20

Conclusion

Conclusion

In the course of this project, which has been focused on enhancing the accessibility and inclusivity of LinkedIn for persons with disabilities (PWD), we have harnessed a range of design testing methods, including card sorting, tree testing, and usability testing, to pave the way for a more inclusive and user-centric platform.

The journey began with a comprehensive scope that aimed to improve the understanding, navigability, and inclusivity of our platform. Through the formulation of tasks and careful guidance, we harnessed the potential of card sorting and tree testing to refine the information architecture, ensuring that content was grouped logically and that navigation was intuitive. These design testing methods played a pivotal role in shaping the structure of our platform to better align with users' mental models.

Usability testing, another vital component of our project, enabled us to dig deeper into the practical aspects of accessibility and inclusivity. By involving users with diverse abilities, we gained invaluable insights into the actual user experience. We were able to gauge task success, learnability, user satisfaction, and identify potential user errors or pain points. Usability testing offered the real-world context necessary to guide design decisions and optimize the user interface for PWD.

The collaborative efforts of our team, combined with the invaluable contributions of PWD participants and advocacy groups, have propelled this project forward. It is essential to recognize that this journey doesn't conclude here; it merely marks a significant milestone. The future scope includes the continued application of these design testing methods, adapting them to evolving accessibility standards and the changing landscape of digital platforms.

Through the ongoing application of card sorting, tree testing, and usability testing, we are committed to maintaining a proactive stance on accessibility and inclusivity. This approach ensures that LinkedIn remains a platform where every user, regardless of their abilities, can fully engage in building professional connections and exploring job opportunities. The design testing methods have been, and will continue to be, essential tools in our endeavor to create an accessible and inclusive LinkedIn experience for all. Together with PWD communities, we are excited about the positive impact we can create and the sustained journey towards a more inclusive digital world.

*The findings and analyses presented in this report are based on the best efforts made within the given time duration and may vary when considering different demographic segments and additional user interviews. It is essential to acknowledge the limitations inherent in the study's scope, recognizing that a more comprehensive understanding may be obtained through further research and broader inclusion of diverse user perspectives.