



Islamic University of Technology (IUT)

**Assignment 1 on Identifying needs and
establishing requirements of HCI term-project**

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0.1 Methodology

- Used a mixed-method approach to data collection, integrating quantitative and qualitative methods.
- Distributed questionnaires to the target demographic, which included Bangla and English speakers from various demographics and locations.
- Surveys were designed to collect complete data on user preferences, browsing behavior, language ability, and technology understanding.
- Conducted focus group sessions to learn more about specific user experiences, concerns, and expectations for website engagement, language hurdles, and accessibility.
- Used gaze-tracking technology to follow users' natural surfing habits and points of interest on existing websites.
- Collected real-time data on user interactions with digital material to discover opportunities for increasing user engagement and inclusion.
- Gained a solid understanding of the target audience's needs and preferences, which helped guide the design and development process efficiently.
- Representative users comprised students, professionals, and elders, reflecting the diversity of potential website visitors. To establish a representative sample, linguistic competence, technological literacy, and socioeconomic status were used as selection criteria.
- Incorporated people with varying degrees of vision impairment to assess the effectiveness of accessibility elements, enabling inclusivity in the research methodology.

0.2 Raw Data

Among the most salient findings from our research were the diverse browsing habits and preferences among our users. While some users preferred visual navigation with traditional mouse interactions, others exhibited a sense of frustration while going through multiple different navigation to access through a single piece or multiple smaller pieces of information, particularly those with physical disabilities or limited mobility. This highlighted the importance of offering multiple interaction modalities to accommodate different user needs effectively.

Although gaze control wasn't a primary requirement, gathering feedback for website redesign from gaze track data was still deemed crucial for understanding user

engagement and preferences accurately.

Additionally, we found that language barriers posed significant challenges for many users, particularly those navigating between Bangla and English content. While some users were proficient in both languages, others struggled with comprehension or preferred content in their native language. This underscored the necessity of implementing live translation features to enhance accessibility and cater to a more diverse user base effectively.

Furthermore, our data revealed varying levels of digital literacy among users, influencing their ability to navigate complex interfaces and utilize advanced features. This emphasized the importance of designing intuitive and user-friendly interfaces to ensure seamless user experiences across different proficiency levels.

0.3 Personas

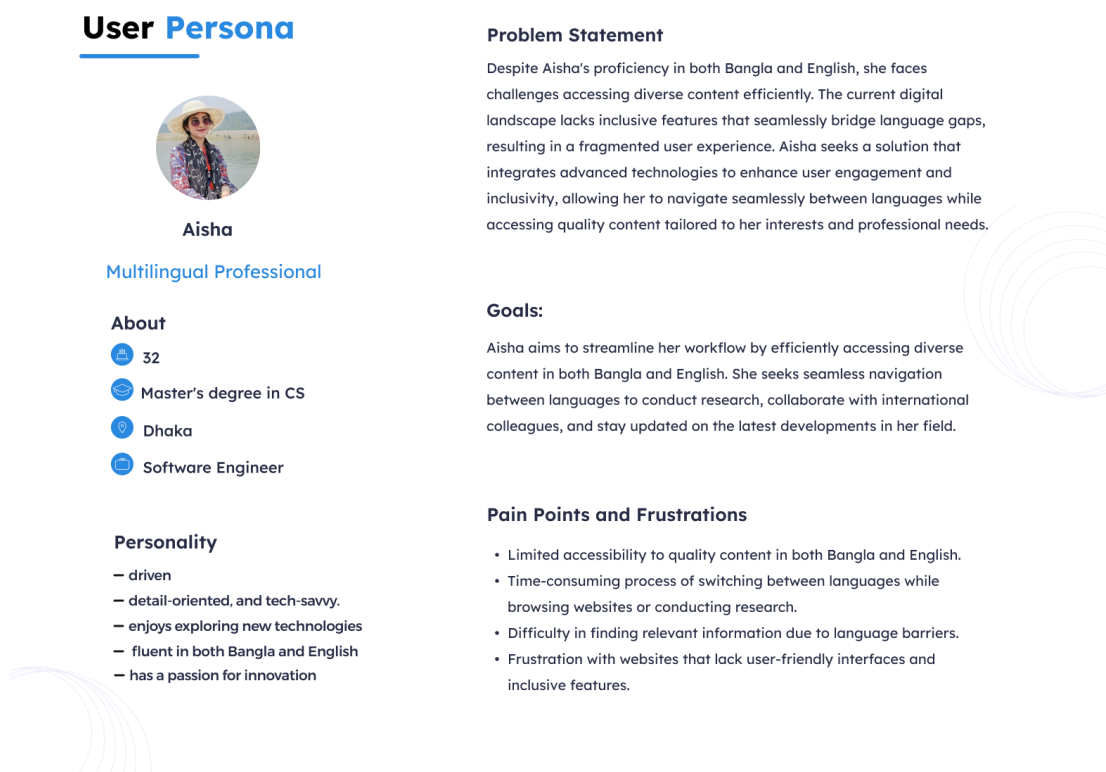


Figure 1: User Persona 1

0.3.1 Scenario where it will be used

Aisha will utilize the system to seamlessly navigate between Bangla and English while accessing a variety of online content for both work and personal interests. She will appreciate the live translation feature, which dynamically translates content between languages, allowing her to access diverse resources without language barriers. Additionally, Aisha will benefit from the user-centric design and inclusive features, which prioritize accessibility and enhance her overall browsing experience.

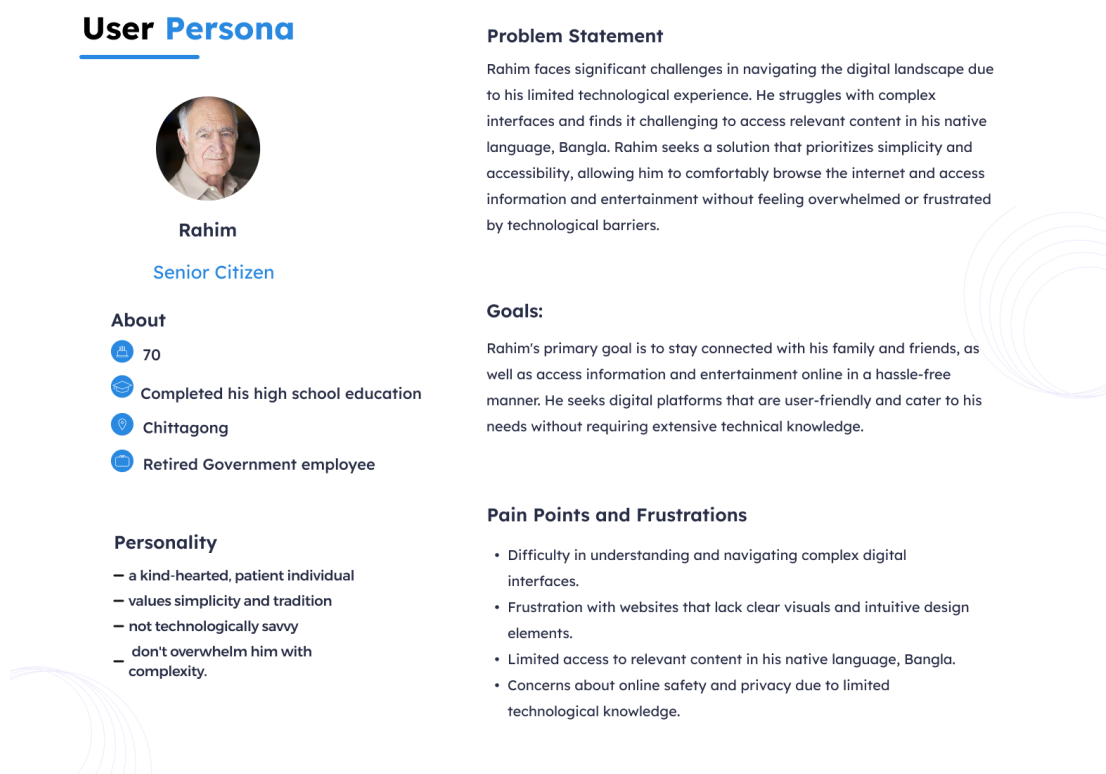


Figure 2: User Persona 2

0.3.2 Scenario where it will be used

Rahim will use the system to comfortably browse the internet and access information and entertainment in his native language, Bangla. He will appreciate the simplicity and accessibility of the interface, which will allow him to navigate the website without feeling overwhelmed by complex features. Rahim will benefit from the clear visuals and intuitive design, which cater to his preference for straightforward digital interfaces.

User Persona



Farhana

Language Enthusiast

About

- 28
- Bachelor's degree in Linguistics
- Dhaka
- Freelance translator and language tutor

Personality

- curious, creative
- prefers simplicity and functionality in digital interfaces
- comfortable with technology,
- deeply passionate about languages and literature

Problem Statement

Farhana, as a language enthusiast and avid reader, faces challenges in seamlessly navigating between different languages while exploring online content. She seeks a solution that prioritizes accessibility and user-friendly design, allowing her to effortlessly switch between Bangla and English settings and access diverse literature and cultural resources that enrich her language learning journey.

Goals:

Farhana's primary goal is to explore and engage with diverse content across different languages seamlessly. She seeks user-friendly platforms that facilitate easy navigation between Bangla and English, allowing her to access a wide range of literature, articles, and cultural resources effortlessly.

Pain Points and Frustrations

- Difficulty in finding high-quality content in both Bangla and English.
- Frustration with websites that lack user-friendly language-switching features.
- Time-consuming process of manually translating or navigating between different language settings.
- Limited availability of diverse and culturally rich content that aligns with her interests.

Figure 3: User Persona 3

0.3.3 Scenario where it will be used

Farhana will utilize the system to explore diverse content across different languages seamlessly. She will appreciate the user-friendly language-switching features, which will allow her to effortlessly switch between Bangla and English settings while accessing literature and cultural resources. Farhana will benefit from the platform's focus on accessibility and functionality, which aligns with her love for languages and exploration of diverse cultures.

User Persona



Kamal

Busy Parent

About

35

Bachelor's in Business Administration

Dhaka

Middle-level manager in a multinational corporation

Personality

- practical, organized, family-oriented
- values efficiency and convenience in all aspects of his life
- comfortable using technology for basic tasks

Problem Statement

Kamal, as a busy parent, faces challenges in efficiently finding educational resources and entertainment for his bilingual children online. He seeks a solution that offers time-saving features and a user-friendly interface, allowing him to quickly access high-quality content in both Bangla and English without the hassle of navigating through complex menus or settings.

Goals:

Kamal's primary goal is to find educational resources and entertainment for his bilingual children quickly and efficiently. He seeks online platforms that offer streamlined browsing experiences, allowing him to access relevant content in both Bangla and English without wasting time navigating through complex menus or settings.

Pain Points and Frustrations

- Limited time to search for educational resources and entertainment for his children.
- Frustration with websites that are cluttered or difficult to navigate, making it challenging to find relevant content quickly.
- Concerns about the quality and suitability of online content for his children.
- Difficulty in finding bilingual resources that cater to his children's language needs

Figure 4: User Persona 4

0.3.4 Scenario where it will be used

Kamal will use the system to quickly find educational resources and entertainment for his bilingual children. He will appreciate the time-saving features and streamlined browsing experience, which will allow him to access relevant content in both Bangla and English without wasting time navigating through complex menus or settings. Kamal will benefit from the system's intuitive design and efficient functionality, which cater to his busy lifestyle as a parent.

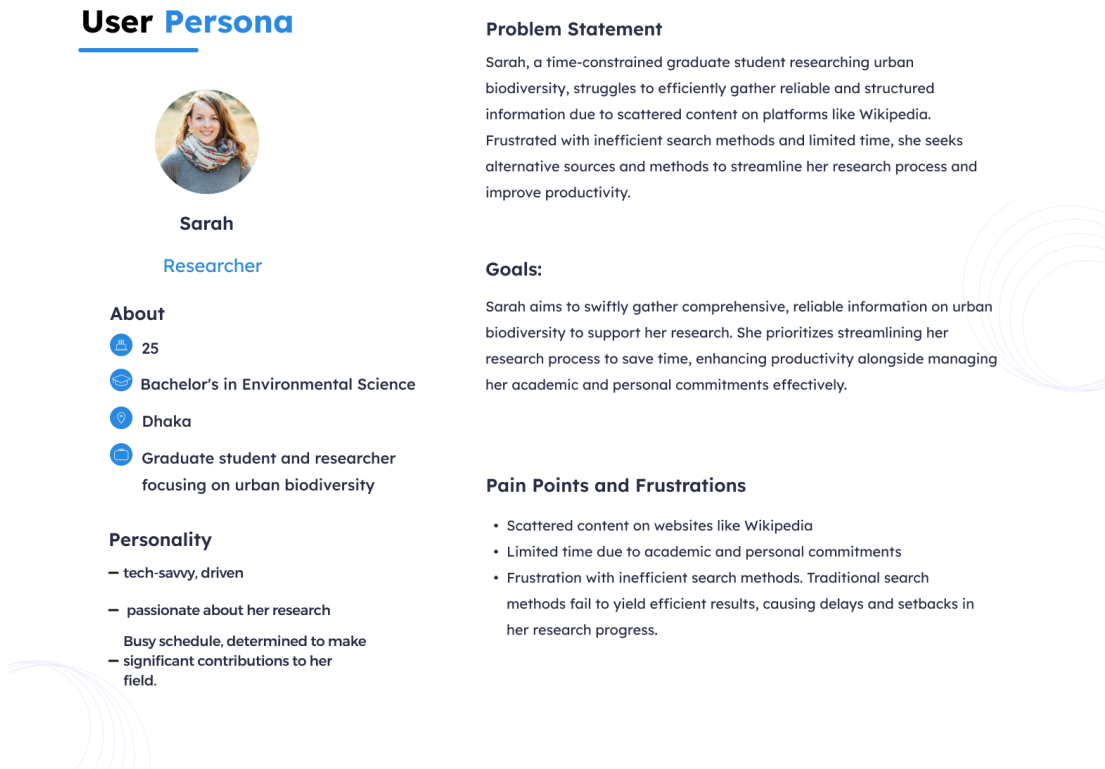


Figure 5: User Persona 5

0.3.5 Scenario where it will be used

Sarah will use the system to efficiently gather basic research information by accessing structured and reliable content on urban biodiversity. She will utilize the platform to find comprehensive resources that provide accurate data and insights, saving her time and effort in sifting through scattered information. Additionally, Sarah will leverage the system to streamline her research process, utilizing its features to organize her findings, annotate relevant sections, and collaborate with peers and professors, ultimately enhancing her productivity and contributing effectively to her field of study.

0.4 Requirements

Our system will provide:

1. Live translation feature for dynamic language switching.
2. Intuitive and responsive interfaces catering to diverse user needs.
3. Clear visual hierarchy and customizable settings for improved readability.

Our system will not offer:

1. Complex features that may overwhelm users with limited technological proficiency.
2. Excessive personalization options that could detract from usability.
3. Language detection algorithms that compromise user privacy.