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### **BHASHA: An Interactive Experience Learning Indian Languages**

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# RIT

**BHASHA:**

**An Interactive Experience Learning Indian Languages**

**By  
Charmy Patel**

**A Thesis submitted in partial fulfillment of the requirements for the degree of  
Master of Fine Arts in Visual Communication Design**

**Department of Visual Communication Design  
College of Art and Design**

Rochester Institute of Technology  
Rochester, NY  
August 12, 2024

## Committee Approval

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Mike Strobert  
Senior Lecturer, School of Design, College of Art and Design  
Graduate Program Director, Visual Communication Design

Date

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Adam Smith  
Associate Professor, School of Design, College of Art and Design

Date

## **Dedication**

I want to express my gratitude to all who have made this thesis a success.

To my advisors, Mike Strobert and Adam Smith, whose guidance has shaped this thesis and my growth as a designer. Your insights have challenged me to explore new horizons in visual communication design.

To Zenab Bastawala, whose extensive knowledge of Indian languages, especially scripts, has been a continuous source of inspiration and an exploration of linguistic diversity and cultural understanding.

To Vishal Panchidi, whose coding expertise brought the interactive elements of BHASHA to life, adding a new dimension to the learning experience.

I am deeply grateful to the language enthusiasts and native speakers who generously shared their knowledge and passion for Hindi, Gujarati, Bengali, and Tamil. Your contributions have formed the backbone of this project, enriching it with cultural and linguistic diversity.

I extend my heartfelt thanks to my fellow students and participants who actively participated in the user testing and provided invaluable feedback. Your camaraderie and creative energy have made this journey both enlightening and enjoyable, and your contributions have significantly improved the quality of this thesis.

This thesis proves the power of collaboration and the shared belief in preserving and celebrating language diversity.



## **Contents**

Bio, Abstract, Introduction, Research, Design, Solution, Analysis, Appendix A, Appendix B

## **Bio**

Charmy Patel is a multidisciplinary designer from India with a passion for typography, UI/UX, and graphics. She earned her bachelor's degree in Graphic Design from Karnavati University and completed a summer internship at Pulp Design Agency. Following graduation, Charmy began her career as a Junior Graphics Designer at Colour Crafts Studio, focusing on brochures, print media, brand research, and identity design. She then joined Bonoboz Marketing Agency, where she contributed to web and social media design projects. Charmy is pursuing a Master's in Visual Communication Design at the Rochester Institute of Technology. She works as a part-time Graduate Assistant alongside her studies, where she was also invited to give a guest lecture on design systems, further enhancing her expertise. Her work has been recognized with multiple Graphis New Talent Honors Mentions, underscoring her creative prowess and dedication to the field.

## **Abstract**

BHASHA is an interactive online platform that focuses on the linguistic diversity of India, specifically targeting languages from the Nagari (Hindi, Gujarati, Bengali) and Dravidian (Tamil) families. The name "BHASHA," meaning "language" in many Indian dialects, reflects the platform's inclusive approach to language learning. BHASHA addresses the challenge of learning complex scripts by offering an engaging experience that showcases the unique beauty and distinctiveness of Indian language typography, characters, type anatomy, and writing systems. By combining technology, design, and linguistics, the platform provides a user-centric solution for individuals and typographers interested in learning Indian languages by making these complex scripts more accessible and enjoyable to learn. With its interactive features, BHASHA enables users to explore Indian languages deeply, fostering a deeper understanding and appreciation of India's linguistic diversity and cultural heritage. By making language learning dynamic and immersive, the platform breaks down barriers and encourages meaningful engagement with Indian languages. BHASHA's approach contributes to preserving and promoting Indian languages in the digital age, offering a valuable resource for language enthusiasts, students, and professionals. Through its innovative design and comprehensive content, BHASHA aims to inspire a new generation of learners to embrace and explore the rich tapestry of Indian languages.

Keywords: Indian languages, Language Learning, Indian scripts, Typography, Interactive

## **Introduction**

India has hundreds of languages and scripts that have developed over centuries, showcasing its rich linguistic diversity and cultural identity. This vast array of languages, each with its unique charm and history, is a source of national pride. However, the complexity of Indian writing systems and the lack of engaging resources make language learning a significant challenge. India's multilingualism, with the average Indian speaking three languages, emphasizes the need for innovative solutions to promote language learning and appreciation.

To address these challenges, BHASHA has emerged as a leading platform. BHASHA not only simplifies the learning of Indian languages but also helps preserve India's linguistic heritage. Focusing on significant languages such as Hindi, Gujarati, Bengali, and Tamil, BHASHA offers an innovative web-based solution that seamlessly combines interactive typography, gamified learning experiences, and culturally informed visual design. This platform teaches language scripts and introduces each language's cultural and geographical context, creating an immersive and captivating learning experience that makes you eager to learn more.

## **Research**

My research journey for this project began with an immersive exploration of Indian languages, scripts, and history. I delved into the evolution of Indian scripts, type anatomy, and linguistic characteristics of four significant languages - Hindi, Gujarati, Bengali, and Tamil. This comprehensive investigation revealed these languages' rich cultural and historical context and the complexities of designing typography for multilingual environments. As I navigated the research process, I encountered challenges from inconsistent data and limited resources. However, this only strengthened my resolve to uncover the unique stories of each language.

I discovered the fascinating history behind Tamil's "puli" system, the distinctive headline stroke of Devanagari, Bengali's intricate matra system for vowel representation, and Gujarati's shared script and linguistic roots with Hindi. These findings deepened my understanding of the languages and inspired the project's name, BHASHA, derived from the Sanskrit word for "language." The selection of these four languages was intentional, representing India's geographical and linguistic diversity, with Hindi from the north, Bengali from the east, Tamil from the south, and Gujarati from the west. Notably, Hindi and Bengali are among the most spoken Indian languages globally, further solidifying their importance in this project. Through this research, I aimed to capture the essence of Indian languages and scripts, laying the foundation for a meaningful project.

## **Design**

With a deep understanding of Indian languages and scripts, I embarked on the design journey for BHASHA, aiming to create an engaging and informative experience that showcases the beauty and complexity of Indian typography. I adopted a user-centered design approach, prioritizing clarity, simplicity, and visual appeal.

I developed a color coding system to facilitate user understanding, assigning a distinct visual identity to each language - Yellow for Hindi, Pink for Gujarati, Green for Bengali, and Blue for Tamil. This consistent color coding was applied across the website, posters, and printed materials, providing clear visual differentiation between the languages.

The visual design featured a 3D-type style and particle effects, adding depth and interactivity. After exploring multiple style options, color palettes, animations, and text styling, I finalized the design using the Anek typeface. This Google font supports all four languages and offers variable font capabilities.

For RIT Imagine, I designed five posters highlighting each language's geographical significance in India and a main poster outlining the project's objectives. Additionally, I created a website prototype with animations featuring a homepage with information about Indian languages, facts, and history. The website included four dedicated language pages with detailed information, type anatomy learning, and writing systems. Users could type text and see it translated in real-time into the selected language, with a character palette below offering buttons for vowels, diacritics, conjunctions, and more. As a takeaway, I screen-printed cards featuring the project monogram, name, and particles/halftone effect in both color and black and white versions.

The live website, featured on RIT Imagine, was designed to be interactive. It allows users to experiment with particles, stickers, colors, and size adjustments. This interactive element was incorporated to make the learning experience not just informative but also fun and engaging.

Throughout the design process, I was committed to refining the content to ensure it met the needs of our users. This involved conducting extensive user testing, gathering feedback, and working on documentation. I showcased the project's development by creating marketing and process videos, keeping our audience informed and involved.

## **Solution**

The BHASHA project encompassed a range of design elements, including an animated website prototype, an interactive live page, printed posters, and takeaway screen-printed cards. These components worked harmoniously to showcase the unique characteristics of the Indian languages, providing users with an engaging and educational experience.

The project's design elements worked together to create an immersive experience, effectively communicating the differences between Indian languages and promoting awareness and understanding among users.

The live website, showcased on RIT Imagine, was designed with user interaction in mind. It allowed users to experiment with particles, stickers, colors, and size adjustments, making the learning experience informative, fun, and engaging.

## **Analysis**

The design process reveals that iterative design, user testing, and feedback incorporation were crucial in refining the solution. The project's focus on simplicity, clarity, and visual appeal ensured an engaging and accessible experience for users. However, further refinement could enhance the project's scalability and adaptability to different languages and scripts.

The project's evaluation revealed significant success, with high user engagement and positive feedback on the project's educational value and interactive features. Users admired the project's ability to communicate the differences between Indian languages effectively and suggested potential expansions to include more languages and integrate the project into educational curricula. It showed a substantial increase in user interaction and engagement compared to traditional educational resources.

The project has significantly impacted the limited awareness and understanding of Indian languages and typography. By creating an interactive and engaging experience, BHASHA effectively communicates the unique characteristics of Hindi, Gujarati, Bengali, and Tamil languages, promoting user awareness and understanding.

User and expert feedback underscores the project's potential impact, suggesting that BHASHA has successfully addressed the problem. The project provides a valuable resource for those seeking to learn about Indian languages and typography. The project's strong focus on design and education significantly contributes to the growing field of design research, demonstrating the value of interdisciplinary approaches to problem-solving.

The BHASHA project contributes substantially to the design field by showcasing the power of design to promote cultural understanding and education. It emphasizes the importance of cultural sensitivity and knowledge in design, providing a valuable resource for designers and educators seeking to create engaging and immersive learning experiences. Overall, the BHASHA project significantly contributes to the design field, demonstrating the potential of design to address complex social and cultural issues.

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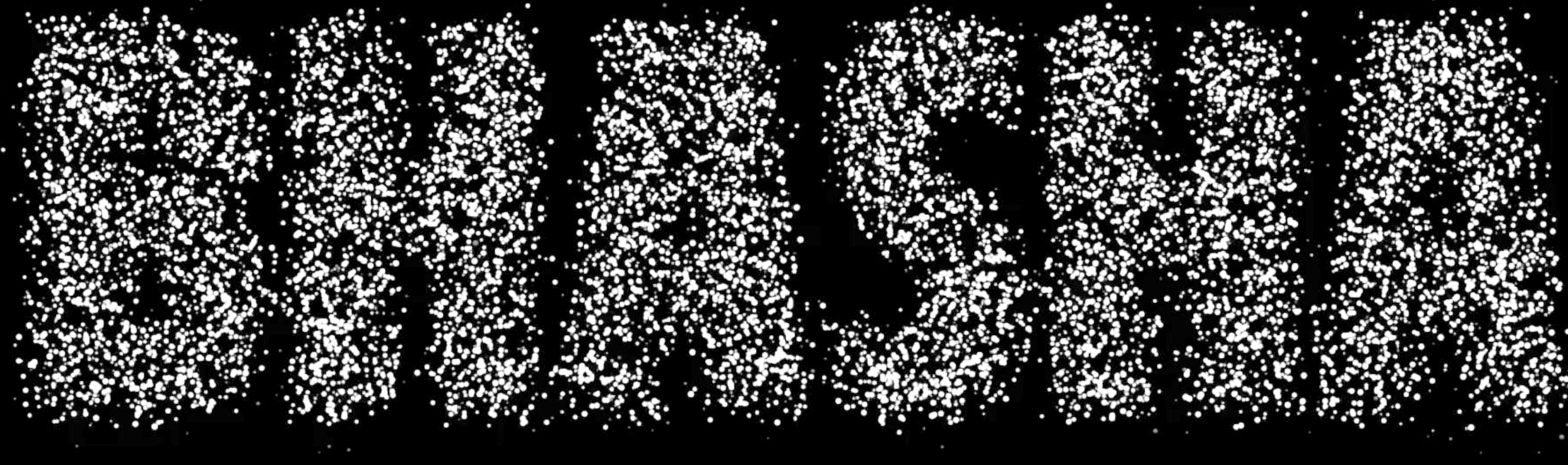
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## **Appendix B: Thesis Presentation**





## AN INTERACTIVE EXPERIENCE LEARNING INDIAN LANGUAGES



CHARMYPATEL.DESIGN



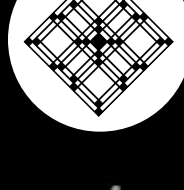
[LINK TO THE VIDEO](#)

**BHASHA** is an interactive online platform that makes learning Indian languages enjoyable and accessible, by showcasing the beauty of **Hindi**, **Gujarati**, **Bengali**, and **Tamil** typography, characters, and writing systems, and simplifying the complexity of their scripts.

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## PROBLEM

India has the highest degree of multilingualism and an average Indian speaks 3 languages. The current challenges in learning Indian languages include:

- 
**LACK OF ENGAGING RESOURCES**  
 Current language learning resources are often text-based and lack interactivity, leading to a lack of engagement and motivation among learners.
- 
**DIFFICULTY GRASPING SCRIPTS**  
 Indian language scripts are complex, with many characters and symbols that are unfamiliar to non-native learners.
- 
**LIMITED CULTURAL CONTEXT**  
 Indian languages are deeply rooted in culture and history, but current resources often fail to provide sufficient cultural context and significance.



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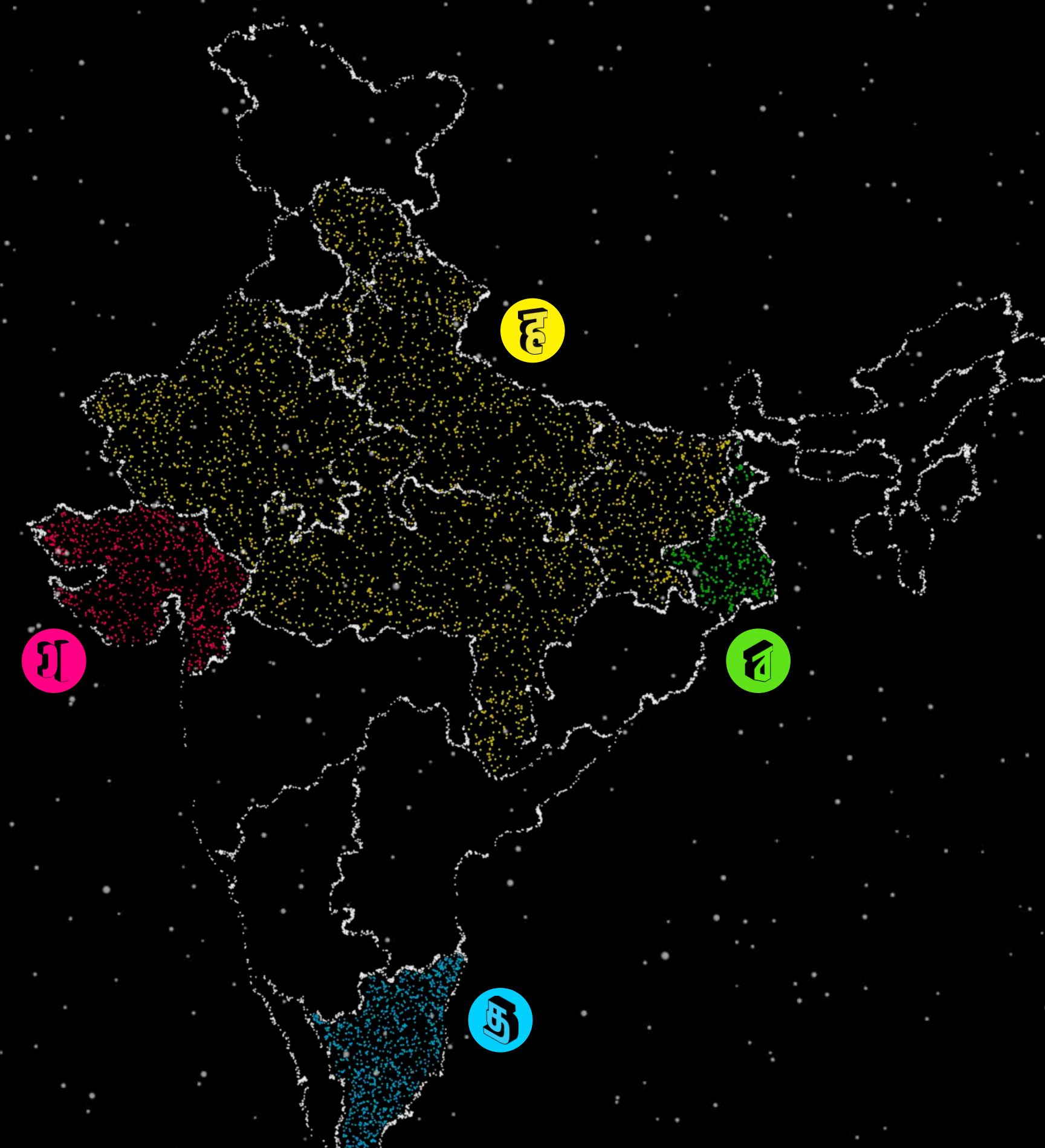
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## LANGUAGES

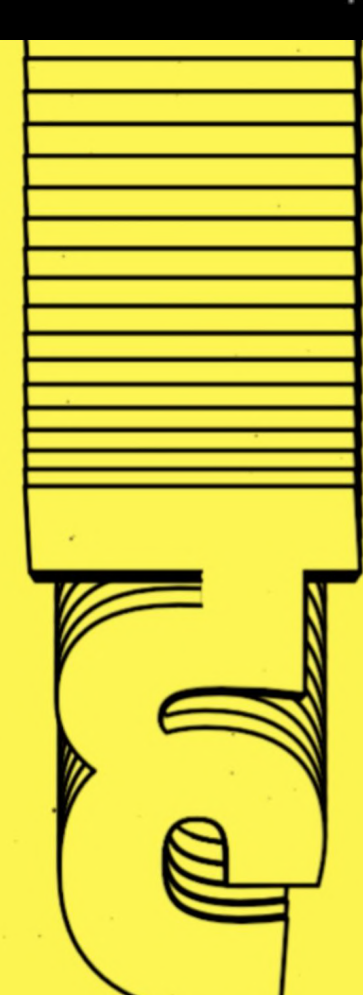
The project highlights four Indian languages - Hindi, Gujarati, Bengali, and Tamil - representing India's geographical and linguistic diversity. These languages boast unique typographical features, such as Tamil's "puli" system and Devanagari's distinctive headline stroke.



### HINDI हिंदी

Hindi is written from left to right, uses Devanagari script, and is strongly influenced by Sanskrit. The main characteristic of Devanagari is the horizontal 'headline' or 'shirorekha' which is drawn over the width of each letter. The letters are hanging from the baseline like most Nagari scripts.

Hindi belongs to the Nagari family, derived from the Brahmi script. It is written from left to right, uses Devanagari script, and is strongly influenced by Sanskrit.


[LINK TO THE VIDEO](#)

### GUJARATI ગુજરાતી

Gujarati is written in the vernacular gujarati script, from left to right, hanging from the baseline and influenced by Businessmen (Banya) script. The letters does not feature a horizontal headline stroke, unlike Devanagari but features the so-called foot (Vanaak), curve in the end of the letter so makes it more curvy in nature.

Gujarati is written in the vernacular Gujarati script, which shares stroke similarity in few characters to Devanagari. There are numerous dialects of Gujarati, which mainly vary in vocabulary depending on the region while using the same script.


[LINK TO THE VIDEO](#)

### BENGALI বাংলা

The Bengali/Bangla script evolved from the Siddham script, which is derived from Brahmi. It is written from left to right, with a horizontal headline stroke, with most of the letters hanging from the baseline.

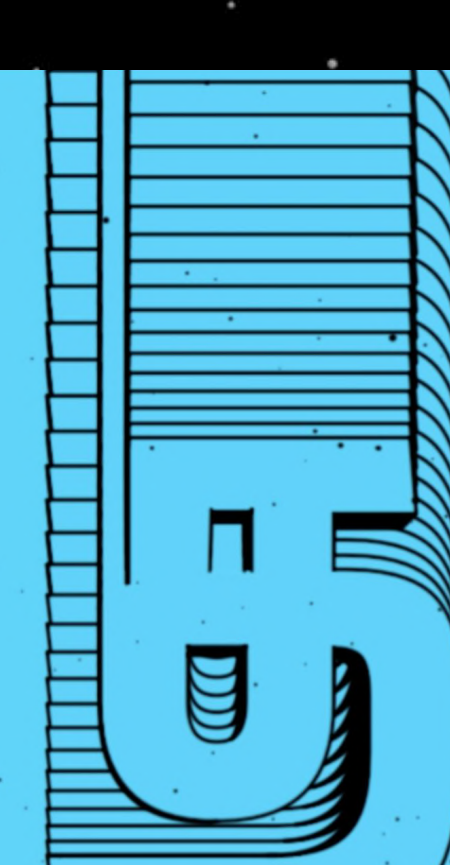
Bengali script is an abugida, like Devanagari, meaning every consonant ends with a syllable of inherent vowel. "Hasanta" symbol mutes inheritant vowel sound.


[LINK TO THE VIDEO](#)

### TAMIL தமிழ்

Tamil script is from Grantha, written from left to right, the letters are touched till the baseline. Letters in Tamil are rounded in shape because they were originally written on palm leaves. They were mainly made up of curved strokes, which prevent the leaves from tearing.

Unlike many other Indian scripts, Tamil writing uses a tiny dot called "puli" on top of consonants instead of joining consonant letters like some other Indian scripts. This dot indicates that there is no vowel sound after that consonant.


[LINK TO THE VIDEO](#)





# SOLUTION

BHASHA offers an immersive, interactive platform to learn Indian languages, making their unique typography and writing systems more accessible and engaging.

## SCRIPT LEARNING

It allows learners to practice and learn Indian language scripts like consonants, vowels, diacritics, punctuation, and symbol.



[LINK TO THE VIDEO](#)

## TYPE ANATOMY

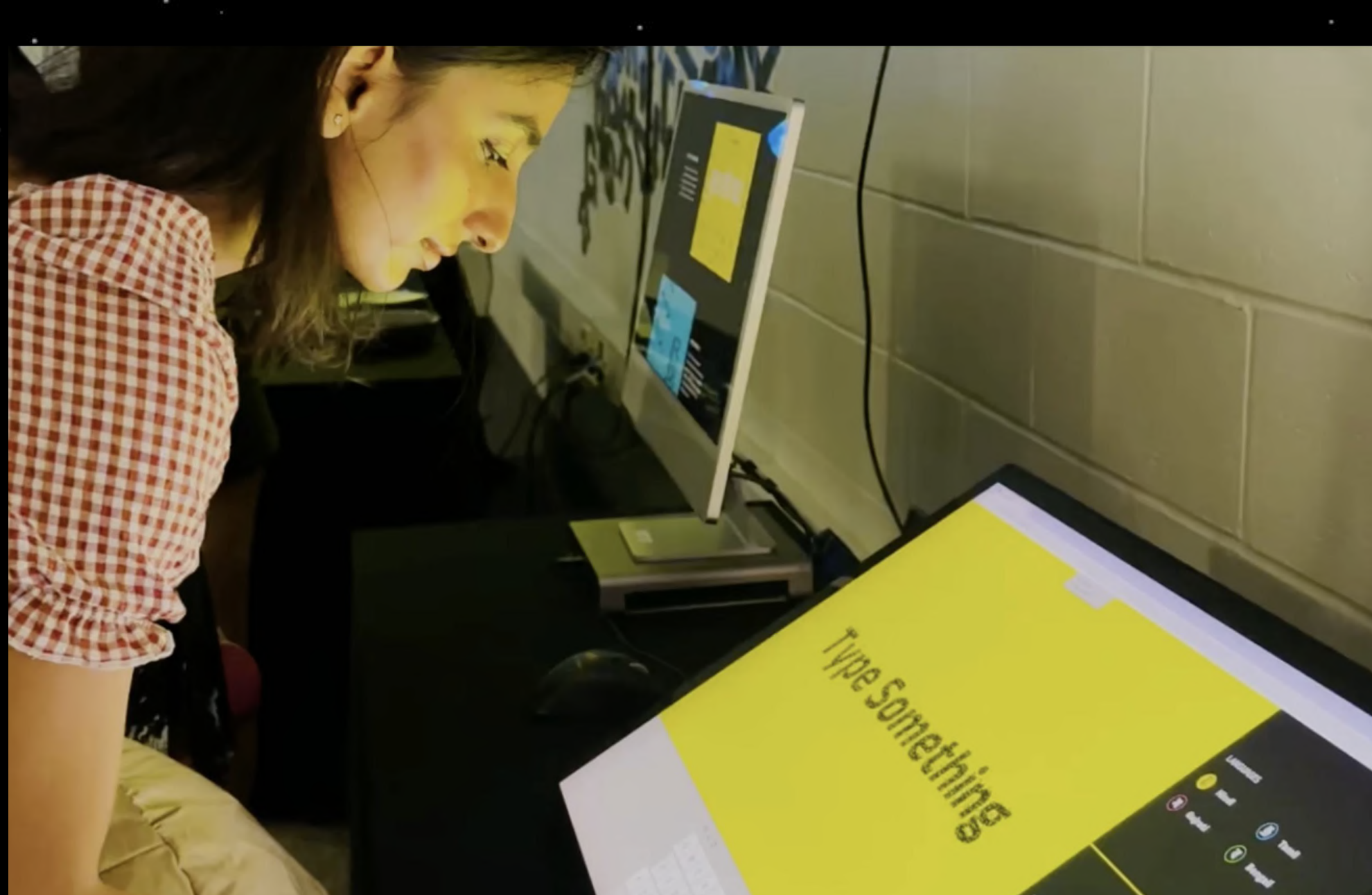
Learn the anatomy of language, including character structure and script elements like headlines, baselines, ascenders, and descenders.



[LINK TO THE VIDEO](#)

## LIVE TRANSLATION

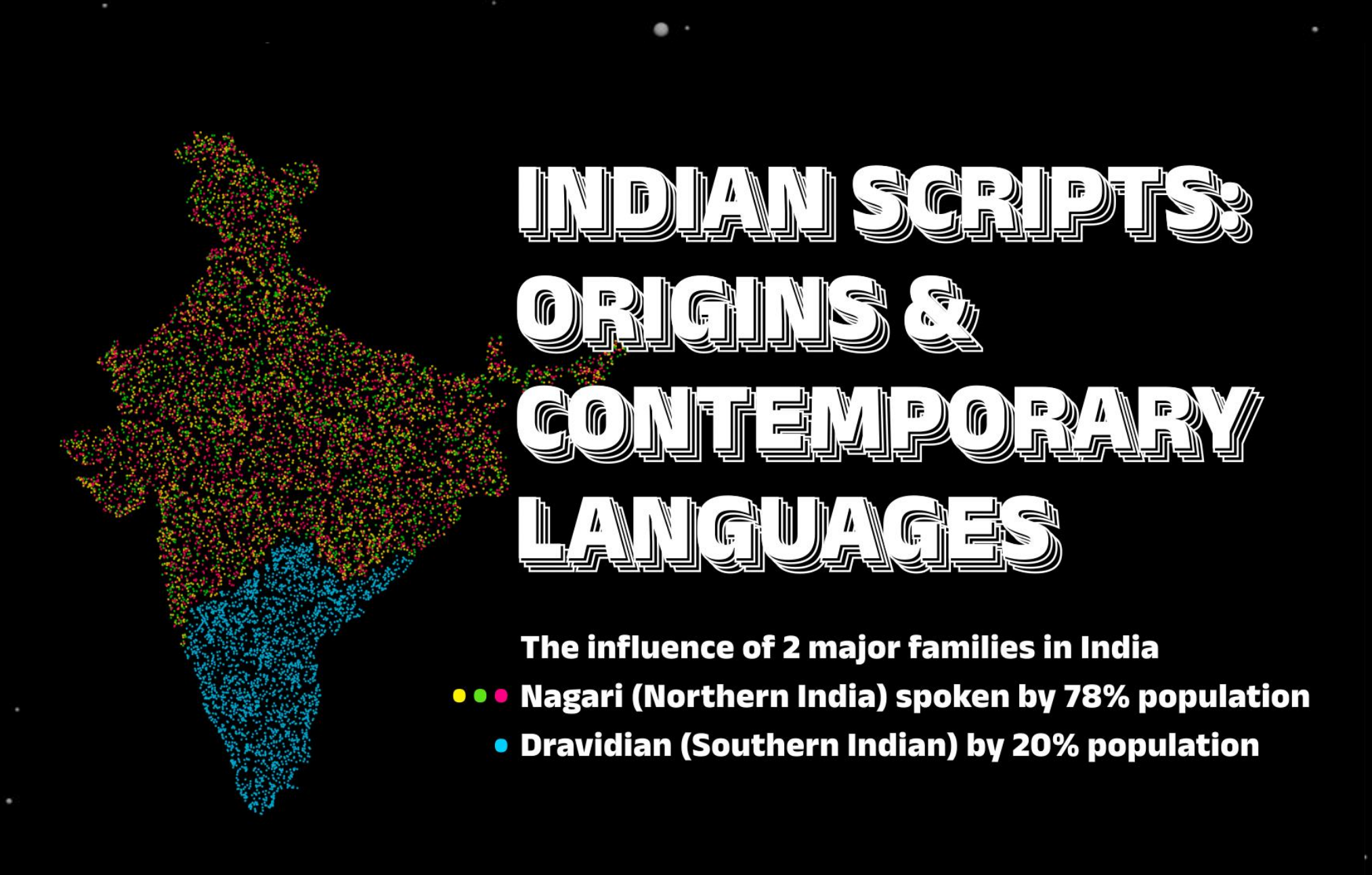
An interactive webpage that enables users to type text and see real-time translation in four languages with interactive particles and stickers that add a fun and creative element to the learning.



[LINK TO THE VIDEO](#)

## EDUCATIONAL EXPERIENCE

The homepage introduces Indian languages, while individual language pages provide in-depth information on Hindi, Gujarati, Bengali, and Tamil, covering history, culture, and more.



[LINK TO THE VIDEO](#)

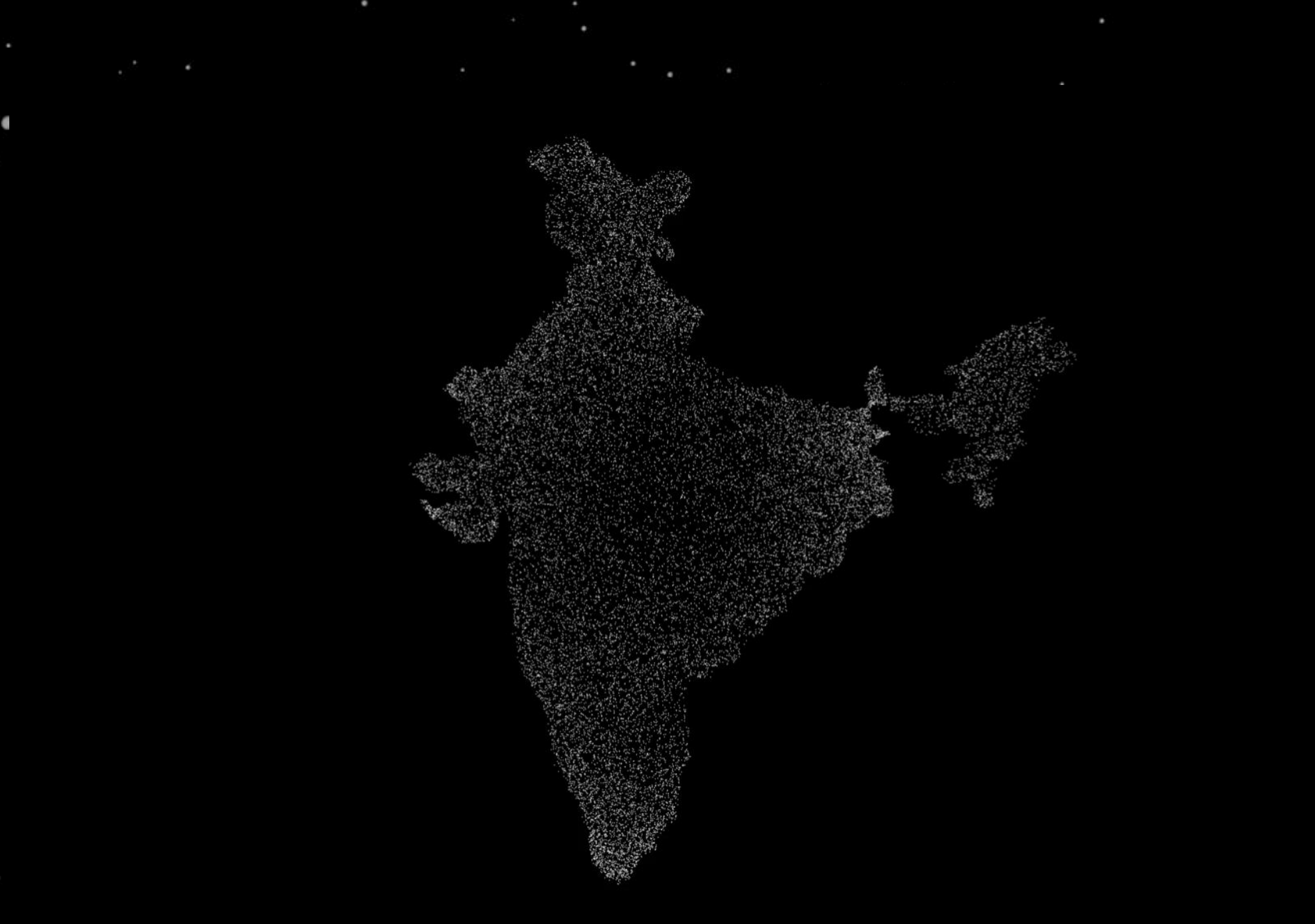


# DESIGN

My aim is to create an engaging and informative experience that showcases the beauty and complexity of Indian typography. I adopted a user-centered design approach, prioritizing clarity, simplicity, and visual appeal.

## MONOGRAM

The monogram design draws the inspiration from these languages, each represented by its distinctive initial character: Hindi - ह, Gujarati - ગ, Bengali - ব, Tamil - த.



[LINK TO THE VIDEO](#)

## COLOR PALETTE

A color coding system to facilitate user understanding, assigning a distinct visual identity to each language - Yellow for Hindi, Pink for Gujarati, Green for Bengali, and Blue for Tamil. This consistent color coding was applied across the website, posters, and printed materials, providing clear visual differentiation between the languages.



[LINK TO THE VIDEO](#)

## TYPEFACE

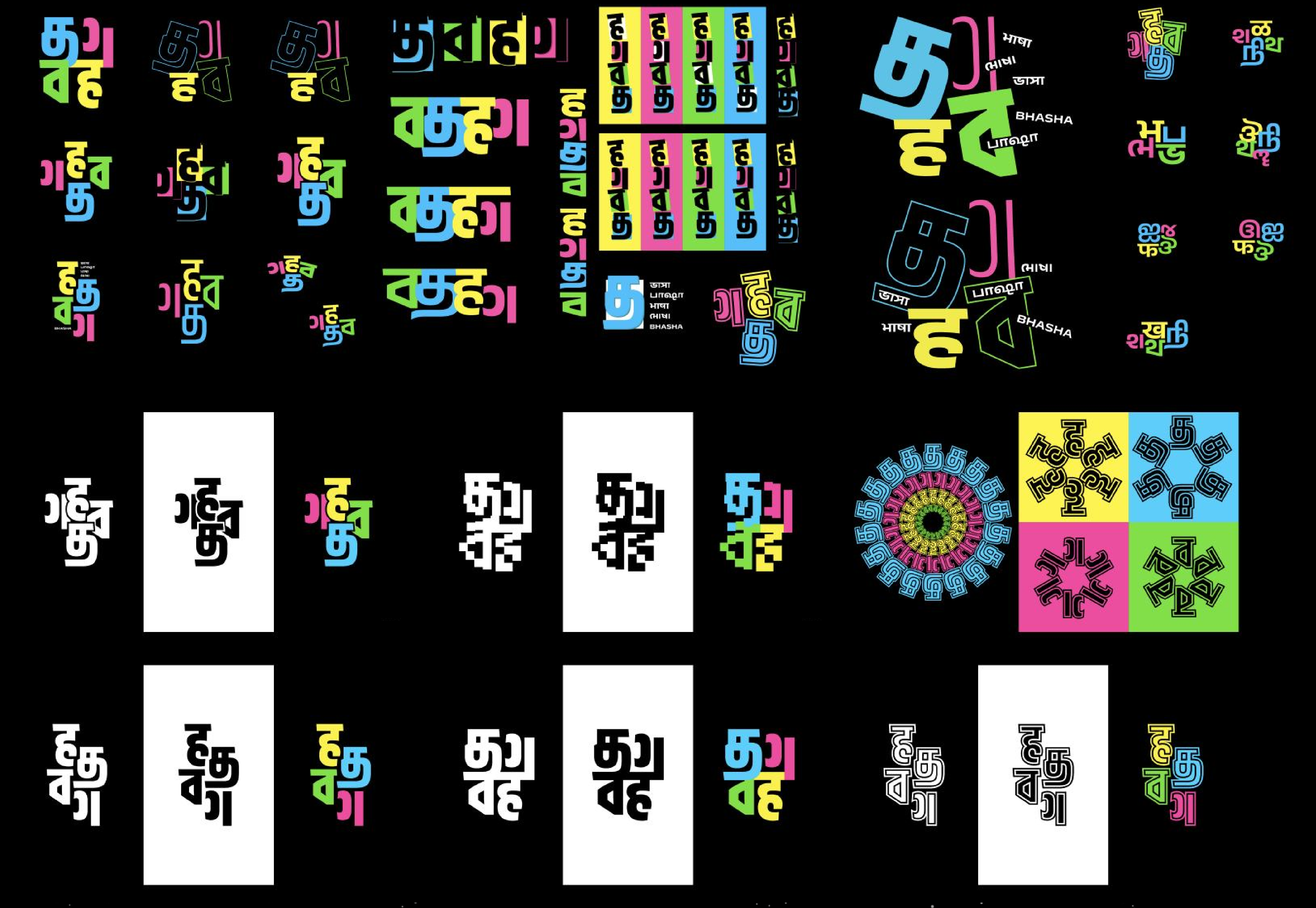
The font used for this project is Anek typeface, designed by Ek type foundry. This font offers variable typefaces with adjustable weight and width, supporting a wide range of languages and font capabilities. It includes multilingual scripts and modern multiscript features.



[LINK TO THE VIDEO](#)

## DESIGN STYLE

The visual design showcased a 3D-style typography, with overlapping text and dynamic particle effects that enhance depth and interactivity. The particle effects were created using Cinema 4D, while the text animations were crafted in After Effects. The website design UI was developed in Figma and further prototyped in after effects.





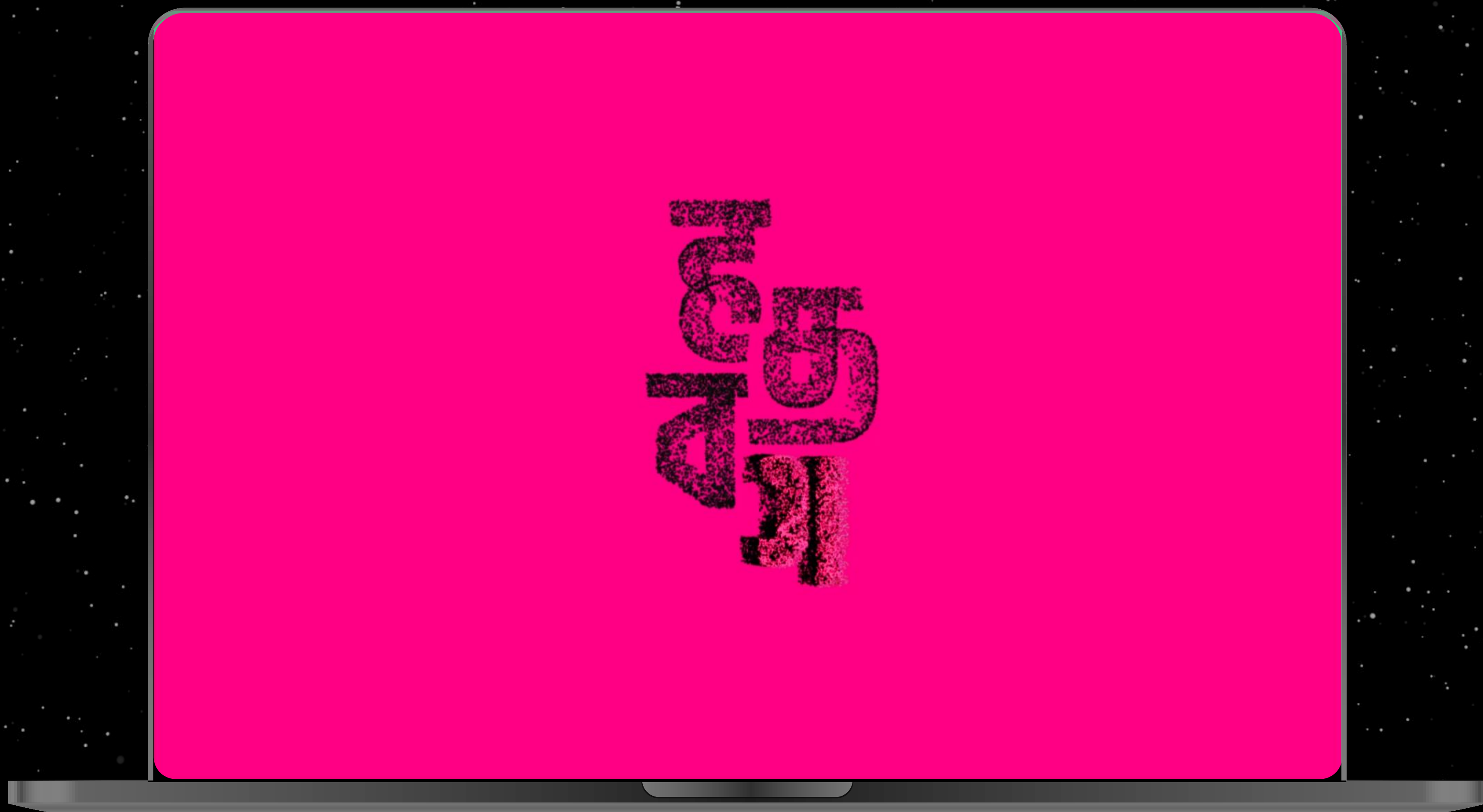
# OUTCOME



LINK TO THE VIDEO



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LINK TO THE VIDEO

Your Message  
thank you

# धन्यवाद

भाषा CHARMYPATEL.DESIGN BHASHA

LINK TO THE PAGE

## LANGUAGES

- हि Hindi
- त Tamil
- ગુ Gujarati
- ব Bengali

## BACKGROUND COLOR

- 
- 
- 

## TEXT COLOR

- 
- 
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## EFFECTS

- Particles
- Stickers

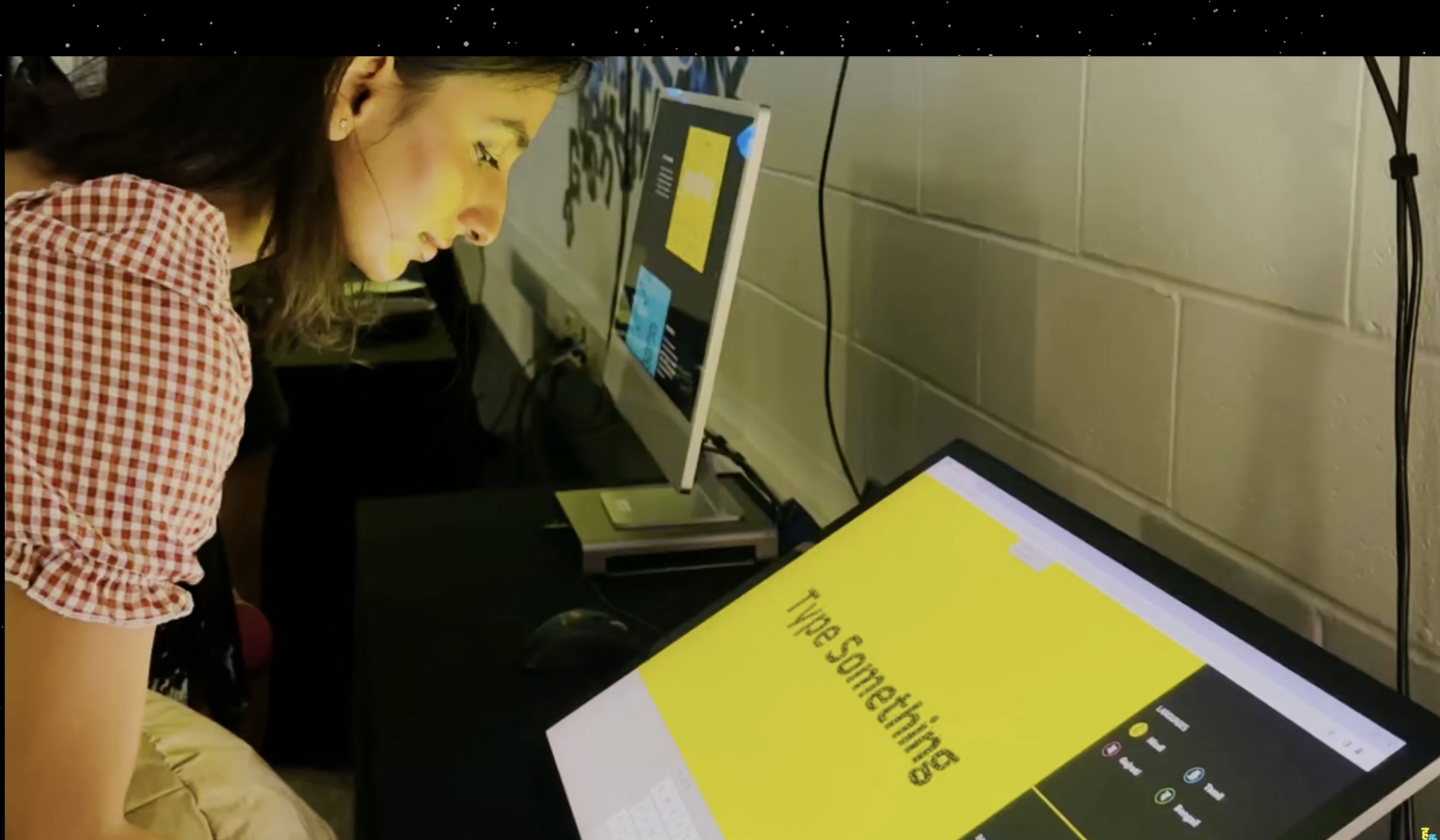


# IMAGINE RIT

For RIT Imagine, I created five posters that each showcase the geographical significance of different Indian languages, along with a main poster that highlights the project's objectives.

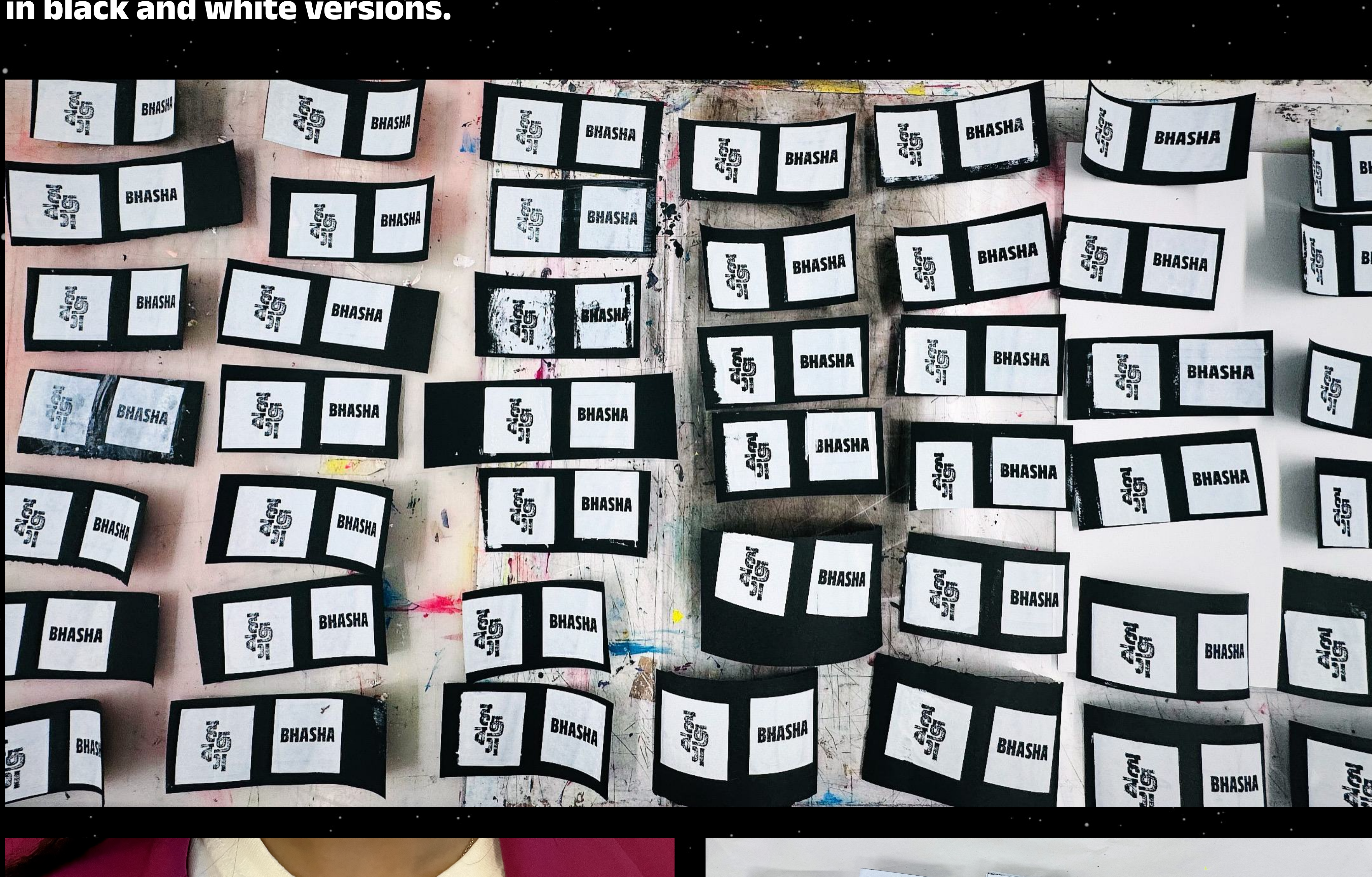


The live website, featured on RIT Imagine, was designed to be interactive. It allows users to experiment with particles, stickers, colors, and size adjustments. This interactive element was incorporated to make the learning experience not just informative but also fun and engaging.

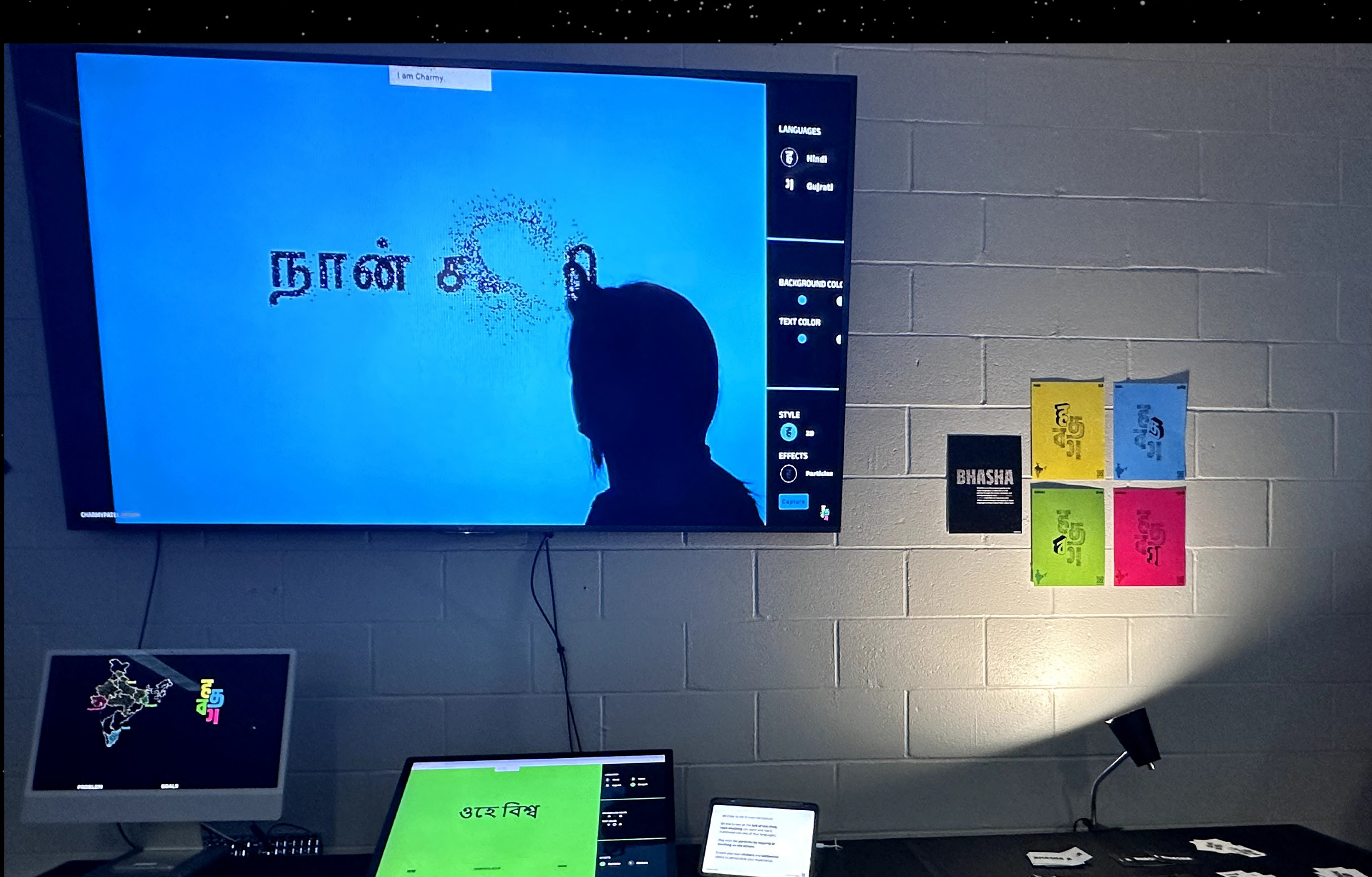


[LINK TO THE VIDEO](#) [LINK TO THE PAGE](#)

As a takeaway, screen-printed cards featuring the project monogram, name, and particles/halftone effect in black and white versions.



The evaluation of the project showed high user engagement and positive feedback, particularly regarding its educational value and interactive features. Users appreciated its effectiveness in showcasing language differences and suggested expanding it to include more languages and integrate it into curricula. The project notably increased user interaction compared to traditional educational resources.



[LINK TO THE VIDEO](#)

# SUMMARY

The BHASHA project contributes substantially to the design field by showcasing the power of design to promote cultural understanding and knowledge. It emphasizes the importance of cultural sensitivity and education in design, providing a valuable resource for designers and educators seeking to create engaging and immersive learning experiences. Overall, the BHASHA project significantly contributes to the design field, demonstrating the potential of design to address complex social and cultural issues.

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