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Designing a New Font type for Masaram Gondi Script

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Abstract
The culture and history of a place or people is their root of existence. And when it comes to Madhya Pradesh, it is known for being a hub of the earliest known human civilizations. The Gond is the most prominent among them. It is widely spread in Chhindwara District of Madhya Pradesh, Bastar District of Chhattisgarh and in part Maharashtra, Andhra Pradesh. The initial historically recorded of the Gond turned up in the Centre India's hilly region circa 14th and 15th century AD. Gondi which is the language of Gond is assumed to be a South-Central Dravidian language is spoken by 2.6 million people of Gond.

The literacy rate among the Gond people is very low which in a way means they had a prosperous oral culture, and the use of script is at its bottom level. Munshi Mangal Singh Masaram of Kochewad Balaghat District in Madhya Pradesh had developed the Masaram script which was discovered in the year 1918. It was composed based on writing model of Brahmi script; Masaram script is free from any genetic relationship with any other writing system. The second older script for writing Gondi which is termed as Gunjala Gondi Script dated around 1750 found in Adilabad district Telengana. As time passed using this very important script got reduced now in present day's people of Gond tribe were using their language but are writing in Devanagari. There is need to preserve this type of script and to give the script a digital form. There is a scope in designing a font for Masaram script with proper technique which will help in documenting life and the culture in their own language and in their own script. The purpose of this research paper is to through light on the Gond tribe and specifically its script. It renders information not only of the writing scripts of the Gond language but also the overall root and background of the Gond for its act as a base for the research and without it further action cannot be possible.

Keywords: Culture, history, tradition, script, font design and concept.

1. Historical Background

According to, (Socio-cultural history of the Gond Tribe of Middle India (4, April 2016) Gond are the largest tribe community found in the Gond Forest of Central India. These hill tracts in the Central India, known as "Gondwana" or "the Land of Gonds", are located to the easternmost district of Madhya Pradesh, formally the central Provinces of India. First called as Gonds by the Mongol – meaning people who live on hills – they also called themselves Koi or Koitur whose meaning remains unclear. Gonds are one of the largest and oldest tribal group in the world with net population between 4 to 5 million shares of 13.45 per cent of the total population of Indian schedule tribe.

Gonds are primarily divided into four classes: Raj Gond, Khatola Gond, Media Gond, Dhur Gond. There also exist few other groups like Deva Gond, Mokasi Gond and Goat Gond. Raj Gond are considered as a ruling class among the other Gonds.

Gond ruled almost quite a long past of Central India but eventually started declining after the rise of Mughal dynasty in Delhi. Their lifestyle is inclined to the primitive of farming traditions. They are still confined to the limitations laid down by their ancestors and deny embracing the modern way of life. Gond have established their own set of cultural conventions in the course of action of their social construction without much involvement and borrowing from other cultures. Their culture practices were simple and over a due course of time have been passed on through generation after generation by means of oral folklore.

The Gond were very efficient in art and crafts. They were also experts in manual art and floral design. However, due to urban influence this feature of colorful wall decoration is increasingly disappearing. The most interesting part about their art was personal decoration. It is a prominent mythology about tattooing that it was believed to be a true Jewellery that remain with oneself even after death and was believed to please the gods. It is also widely believed that tattoos were to adorn the body and had some special medical healing.

Figure1: Old document of Masaram Gondi Characters (Proposal to Encode the Masaram Script in L2/15-090 Anshuman Pandey, 2025).

2. Masaram Script:

Munshi Mangal Singh Masaram of Kochewad Balaghat District in Madhya Pradesh had composed the Masaram script which was discovered in the year 1918. Designed based upon writing model of Brahmi script, Masaram script is free from any genetic reliability with any other writing system. The script was formed for writing Gondi, a Dravidian language, enjoys the highest supremacy as compared to other scripts been used by Gond tribe of Madhya Pradesh and Maharashtra.

Masaram script was added to Unicode standard in June 2017. It is interpreted in several samples. (Figure 2.8) The Central Institute of Indian Languages (CIIL) has in its collections a manually drawn chart of Masharam's script from 1951. (Proposal to Encode the Masaram Script in L2/15-090 Anshuman Pandey, 2015).

The initial version of the script was assigned to name of the manuscript blocks as 'Gondi' but the confusion emerged when other scripts dedicated to and focusing on the same Gondi language came to being. Like, for instance, the Gunjala Gondi was precisely similar to this script, and it is also related to the language and culture of the Gonds. Given this, it was applicable to appoint a qualifier for the script block that would be for distinguishing which 'Gondi' script that particular is all about. Hence, an appellation that includes the name of the scripts created that seems precise and promising. Apparently, that is how Masaram script got its name.

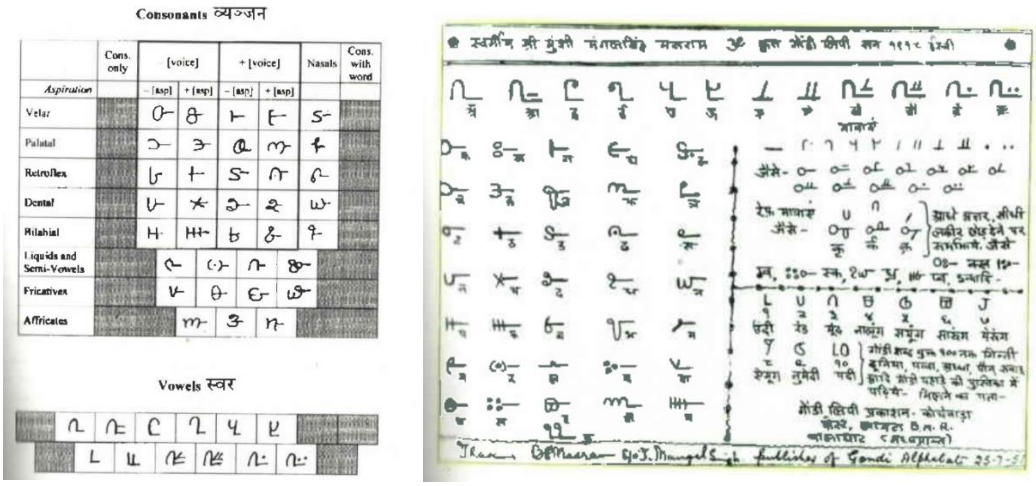

Figure 2: A handwritten chart of Munshi Mangal Singh Masaram Gondi character written by his son Bhavan Singh in 1951(Proposal to Encode the Masaram Script in L2/15-090, Anshuman Pandey, 2015).

3. Basic Character Set of Masaram Script Comparison with Devanagari & Brahmi Script:

Masaram Gondi script is an alpha syllabic writing system which means it is written from left to right. Masaram script consists of total 48 unique letters in which 36 are consonants and 12 vowels, quite similar to Devanagari script. As it is mentioned that Masaram script doesn't have any genetic relationship with any writing system but still it forms a relationship with Devanagari script and is probably based on the Brahmi system of writing.

The Brahmi script, considering its intensity and influence, is privileged to be one of the most elite writing systems of the world but also deemed to exist around 1700 years ago. Yet, it was the Brahmi script that gave birth to many scripts, and almost all Indian languages needless to say Dravidian or North Indian are all have their origin from Brahmi script.

Devnagari script is formulated from Brahmi script and Masaram Gondi script has followed the same. But obviously their differences persist when both the scripts are compared and these distinctions between the two are based primarily on the change of character shape, it is rendering structure, combination of vowel-consonants, consonants-conjunctions etc. Also, few shapes of the characters, vowel sings are

comparatively alike to that of Brahmi script. The prime difference between Devnagari or Brahmi and Masaram scripts is that there exists no horizontal line, which is also known as 'Shiro Rekha', in Brahmi and Masaram script.

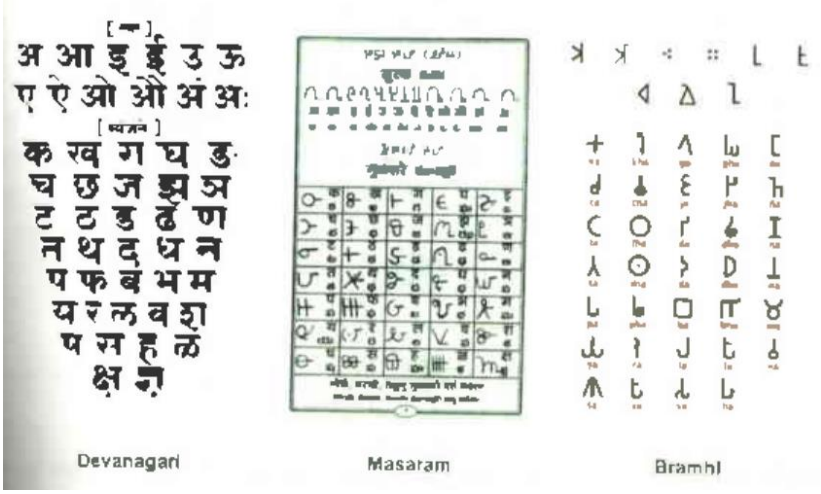

Figure 3: Comparison between consonant and vowel of Devanagari, Masaram Gondi and Bramhi script.

4. Characteristic Structure of Masaram Script/Font:

The characters of Masaram script witnessed a minute and through investigation in a way that it was analyzed on the basis of its flow in which they were written. The flow was derived by observation of the writing style of Munshi Mangal Singh Masaram. The flow was marked by observing the writing style in various ways and patterns and thus the direction of the flow had evolved. This activity was prominently done to comprehend and approved several writing styles of the script and to establish the most common way of writing on the basis of what the majority decide which is examined in each character. In flow of writing there are three points to concern: the start point, the pause point and the end point.

The anatomy of Masaram script does not resemble taken from any writing system or script. The anatomy of Masaram script is uncomplex because of handful number of curves and have symbolic characteristics like ovel shape, straight lines both horizontal and vertical. The number of basic shapes is in multiple amounts. Complexities increase when the matras and other conjuncts come.

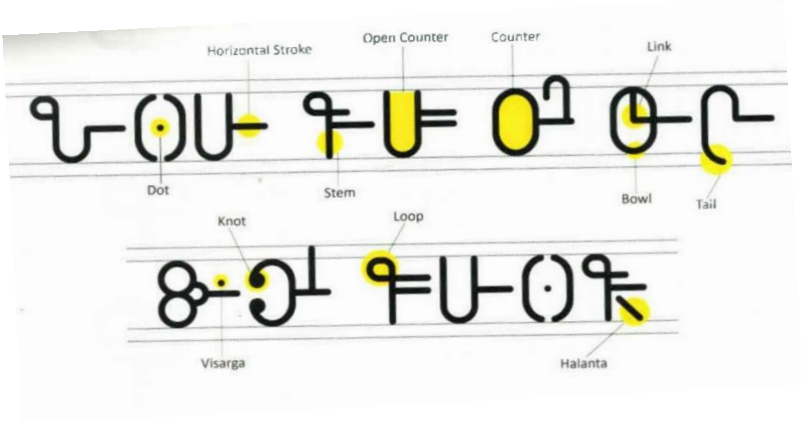

Figure 4: Anatomy of the Masaram Gondi Script created in digital format.

Counter: Counter, completely or partially, is an enclosed space within a letter or a negative space which is encircled within a letter. For example – letters like ‘ka’, ‘kha’, ‘ ja’, ‘va’ and ‘ssa’.

Open Counter: The partial open space within a letter that is open from one end. The counter space is written with complete or slightly opening, depending on the design of the font. But with slightly open counters the visibility is high.

Loop: It is the part of the knot which carries a small negative space similar to the counter. Sometimes this could be totally filled. In the above-mentioned figure, it is visible in a letter Ma. When the stroke meets with its own earlier stroke on right side then it creates a small negative space. This loop is depicted in following elements like ‘nay’, ‘nna’, ‘dha’, ‘bha’, ‘ma’ and ‘ha’.

Knot: Knot appears as a fill circle at the beginning of a letter and extends further to complete the letter. Deciding knot size in font is very important when it comes to typing below ten points then this knot should be clearly visible. Letter ‘da’ and ‘dha’ have a knot.

Link: A stroke that brings in two parts of a letter is known as a link. Usually present in letter ‘Ja’ it links the topmost part of the bottom right of the horizontal line of a consonant.

Tail: Also known as a descending stroke, tail is usually present in letter ‘ya’. It may be the back, last, lower, or inferior part of letter.

Stem: The stem is the main, key vertical stroke of a letter form.

Horizontal Stroke: The horizontal stroke is that which intersects the stem. Following letters; ‘Ttha’, ‘Pa’, ‘Pha’ have a stroke. Besides, the horizontal stroke is present on every right side of consonant in Masaram script.

Bowl: The fully closed curved or circular part of a character is called the bowl.

Dot: A point or a small symbol donated as a diacritical mark in writing is called the dot. Usually it is found in letter ‘Ra’.

After discussing all the characteristics of Masaram script like anatomy, shape, flow and letter formation of the script to create a font for Masaram, it is accepted that one should work on paper first rather than going directly to digital form. Here the experiment is done by using varied numbers of tools ranging from chisel to calligraphy pen to cut nib pen, to bullet tip and have tried to design manually with free hand. Employing these tools makes it easier to understand and helps bring clarity in defining the stroke variation of letters, joints, balance between inner and outer counter shape, kerning, flow of each letter etc. As Masaram script is full of symbolic features giving an impression of some sort of signs.

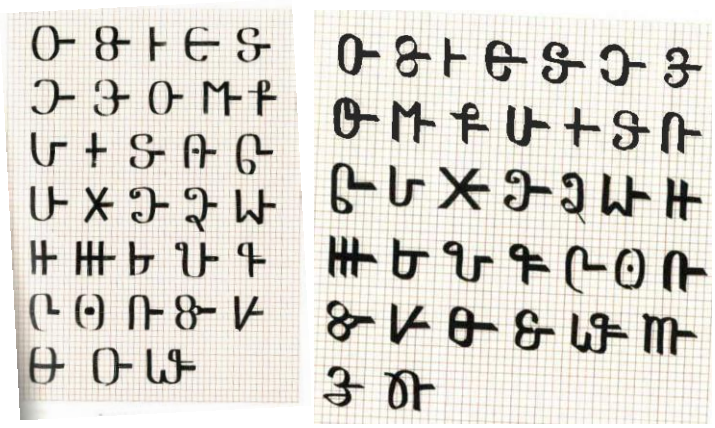

Figure 5: Calligraphy with Cut Nib Pen and with Chisel Pen.

Refining each character of Masaram script on paper with proper dimensions on basis of the bullet tip pen design. Corrections have been made like the thickness of the stroke was uneven at few places, or few knots were closed due to thickness of the marker while few characters' width was not properly drowned and in some characters the loops were fully closed. These corrections need to be fixed before moving further.

After through and careful research, it has been decided to follow Mono-linear font for the Masaram script for it has a consistency in its thickness of the stroke and it is quite comprehensive and readable. There exist hardly any profound fonts that have been specifically designed and developed for Masaram script. The calligraphic style for script could also be used but these types of fonts are primarily developed for the aesthetic motive merely to make it look beautiful and authentic. Considering the visual ergonomics in Typography, it is based mainly upon three principles, and they are as follows: Visibility, Legibility and readability. 'Visibility' means whatever is visually being presented. 'Legibility' means individual identity of a letter or how quickly and easily we can understand each of the letters. While 'Readability' means how quickly can we decode the given information in a passage. After the study on primitive Masaram letters and documents, we could be able to know the structure of the script, construction of a letter, axis, knots, nodes, loops axis, grey value and differences between the individual letters, character height and width, the and the end point of the letter etc.

The fonts designed are in mono-linear and are of bold stroke; and all the characters developed have homogeneous height. None of the parts of the letters goes above the headline or below the baseline except two letters 'naa' and 'ya'. The characters which pose similar features have some additional elements that mark the difference between the two.

5. Semantics and Connotation:

Semantics is the study of meaning. It focuses on the relation between signifiers, like words, phrases, signs, symbols, what they stand for and their denotation. Linguistic semantics is the study of meaning that is used for understanding human expression through language. Semantics of proposed Masaram font are showing through their characteristics, as discussed earlier. The connotation is related to details and their representation in font, and what is the meaning behind these characteristics in font.

Proposed Masaram font contains the structure of traditional script which is designed by Munshi Mang Singh Masaram. This font is written with ink and pen on paper. This research paper focuses on redesigning

the script in a digital way, taking the mono-linear form which gives more space and big counterspace in letters. This allows design to change and modify style of the font, keeping the meaning and connotation same. Which gave the font a modern look and enhances its readability, compared to traditional script.

The proposed Masaram font has smooth lines, curve in nature and its structure contains horizontal and vertical lines. Proposed fonts have oval shapes which give it a modern look than the traditional script. The proposed font could be used for printing documents that contain traditional information about the culture, their standard of living and way of living. This documentation will further help in preserving cultural information in their own understandable script.

6. Digitalizing the Fonts:

Digitalizing the fonts is nothing but its vectorization. Vectorizing the glyph is essential before taking any glyph into the font developing software. The initial stage of the procedure starts when calligraphy is made manually on paper along with all its corrections and refinements. Adobe Illustrator CC is used for vectorizing glyphs. This process involves the following steps:

- Scanning of manual handwritten letters and transferring them to illustrator.
- Appropriate tools; here by using pen tools to draw a new shape as references of the scanned images.
- Drawing a vectorized shape of the letter is followed by correction process which is done keeping in mind the design parameters.
- Finally, the documents are saved in the SVG format. Repeat the procedure to create the remaining letters.

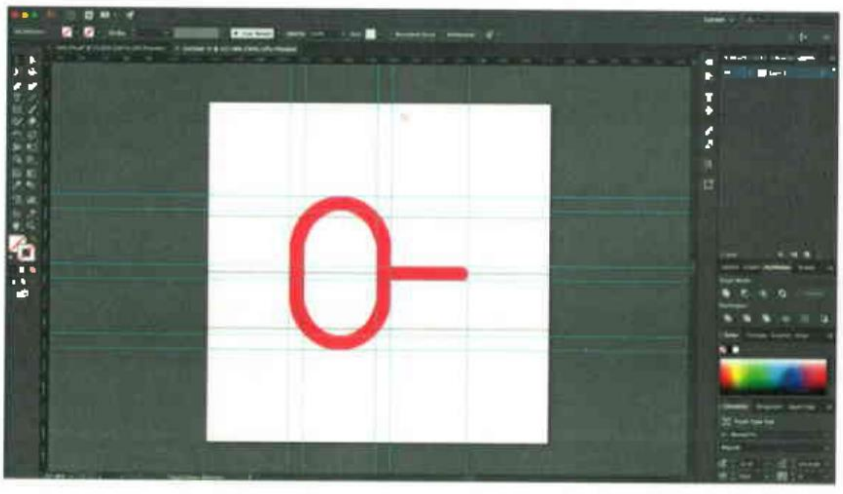

Figure 6: Drawing a glyph of the character taking reference of the scanned image of handwritten letter.

7. Developing Font using Font Forge Software:

Font-Forge software is being used for the information of the proposed font for Masaram script. Its well-improved toolset for designing a font makes it suitable for beginners as well as professionals. This software is absolutely free for windows and promotes commercial use. There are prominently four windows as follows:

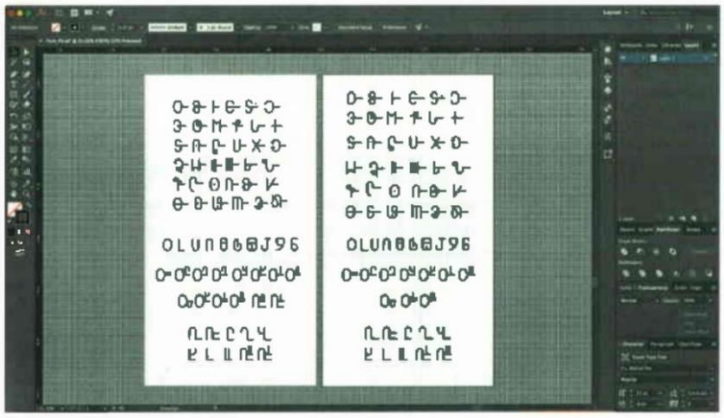

Figure 7: Vectorizing basic letters, matras and numerical of the Masaram script.

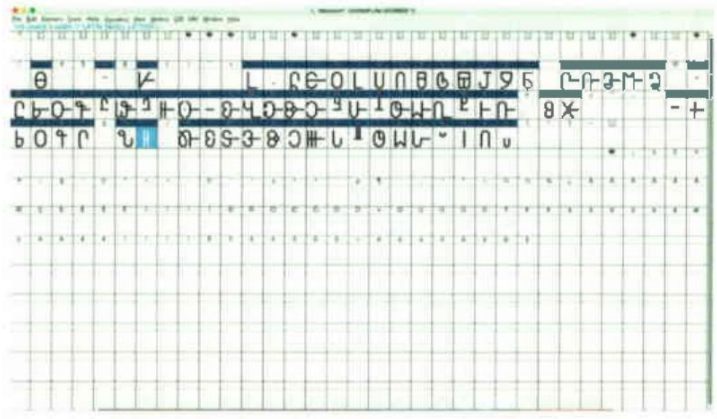

Figure 8: Assigning the Masaram letters in 'Font View Window' in FontForge software.

The Font view Window: This is opening window which pop-ups opening the software.

The character view Window: Double clicking on the glyphs on the Font view Window will open the Character view Window. Actual designing of the glyphs takes place here.

The Metrics Window: The Metrics Window is used for adjustment of spacing and kerning of the letters.

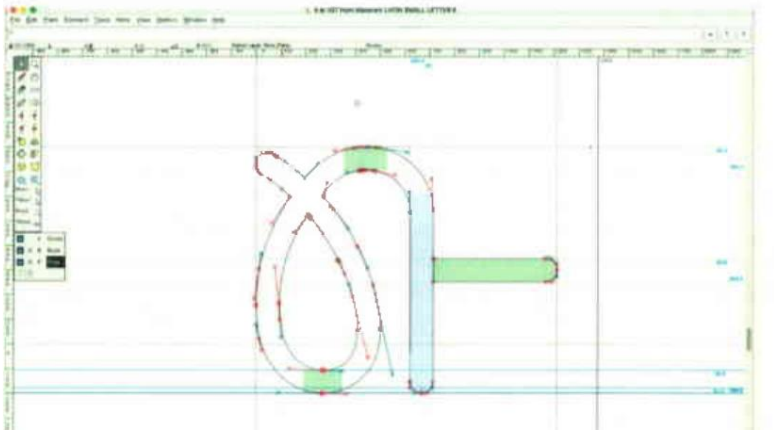

Figure 9: Creating glyphs for Masaram script in the character window.

The font Info Window: All the information about the font is stored here in this window.

The next step is to import all the vectorized characters designed in Illustrator into Font-Forge. This is done by double clicking on the glyphs from the front view Window then importing specific letter to respect letter. All the Masaram characters are placed here in phonetical sequence with the English keyboard.

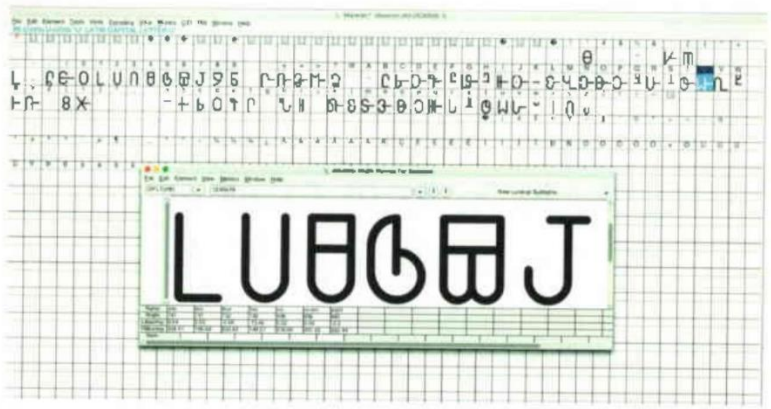

Figure 10: Deciding the spacing between individual letters or kerning in the Metrics window.

The final step is to form the vector outlines for Masaram script in the Character Window. This is done by double clicking the glyphs in Font view Window and importing the SVG file from Illustrator. This software too has almost the same tools as Illustrator for adjustment of different knots and different curves etc. After the glyph design in Character Window is finally completed, the spacing between each letter or kerning is decided and managed in the Martics Window.

Designing Basic Character Set in Font-Forge:

The Basic Character set contains Vowels, Consonants, Vowel signs and Numerical. All of these were designed in Font-Forge software. There is basic 2 types were designed one is “Masaram_Regular” and another one is “Masaram_Bold”, shown in image below.

It can be seen the keyboard for newly designed Masaram font, with Caps Off and Caps On.

8. Conclusion

The aim of this research study is to understand the historical context of the Gond tribe and also the analytical study of the Masaram script. The tribal community of Madhya Pradesh traditionally used this script, however, over a period of time, this script seems lost in the pages of history. A script plays an important role in growth of a community or a tribe. It is most effective way of transmitting traditional information to the upcoming generation. The study towards this topic is aimed at introducing a new Masaram font. The digital font was designed while being sensitive about the attributes such as visibility, legibility, and readability of the characters. The font satisfies the attributes both in the digital and the printing media. The font could be used for the publication of typically Gondi books and magazines written in their own language so as to promote their culture. An online platform/ blog could be written concerning the issues and events of the Gondi tribe in the Gondi language exclusively with the help of the Masaram script. India is a vast country, there may be many more untouched original tribal cultures still preserve the sustainable livelihood with rich oral tradition, the interested researcher/ designer may pick their culture and do the research in detail to bring their knowledge to the digital platform by adopting similar method.

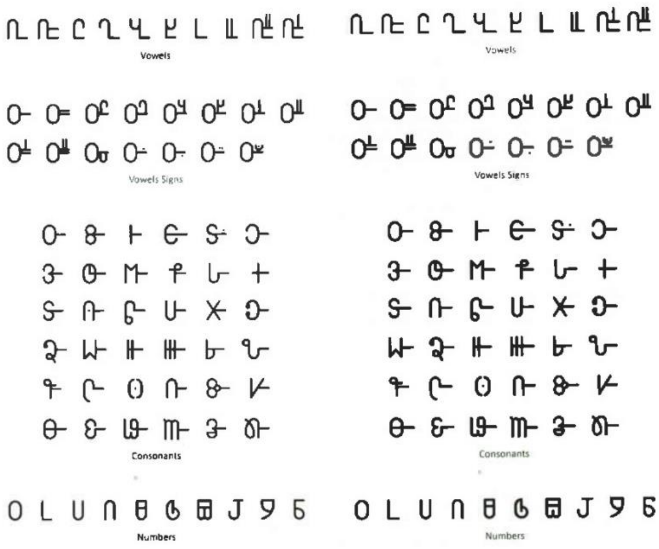

Figure 11: Basic character set of Masaram script as Masaram _regular_font and Masaram_regular_bold font.

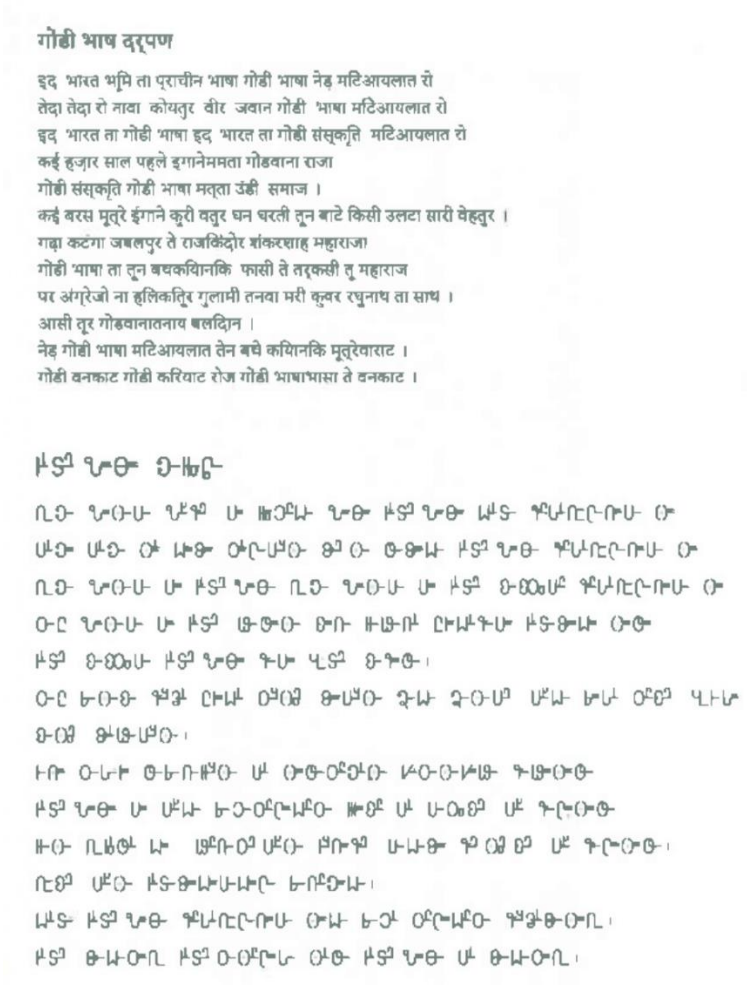

Figure 12: Written sample of Masaram font.

Masaram Keyboard with Caps OfT

Masaram Keyboard with Caps On

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