# Tulu

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## Proposal to encode Tulu

## Introduction

Tulu (ISO-639-3:tcy) is one of the Dravidian languages spoken mainly in the coastal districts (Mangaluru and Udupi) of Karnataka State and northern district (Kasaragod) of Kerala State of India<sup>1</sup>. The area where Tulu speaking people are present is referred to as *Tulunaadu*, where *naadu* means land. The people who speak the language Tulu are referred to as *Tuluvas*. There are a lot of Tulu speaking people living outside this region also. Sizeable of them are living in other cities in India such as Mumbai and the rest outside of India such as Gulf countries. The Indian census report of 2011 reported a total of 1,846,427 native Tulu speakers in India<sup>2</sup>. It is estimated that the total number of Tulu speaking people will be much above 2.5 million, touching almost 5 million. There is some difficulty in estimating the real number of Tulu speakers in the world due to the fact that many are spread outside *Tulunaadu*. Tulu is written in Tulu script which is derived from Grantha script. This is a proposal to encode Tulu script in Unicode in the Universal Character Set (ISO/IEC 10646). This proposal replaces the proposal by Michael Everson of 2011-04-22 No. N4025, L2/11-120. This document explains in detail about character set given in the proposal L2/20-177.

### Background

Tulu has a long history of almost 2000 years. Tulu has rich Tulu culture, literature, folklore. Tulu script was in use till the beginning of 19<sup>th</sup> century when the printing technology made an entry to the region. Venkatraja Puninchithaya has written a detailed research paper in Kannada on Tulu script published by Kannada University, Hampi, Karnataka<sup>3</sup>. Given below are the main parts of that paper, translated into English.

It is very surprising to see sudden disappearance of Tulu script, which had a wide popularity with more than thousands of palm leaf manuscripts, it went out of limelight to being history. It could be because of no proper patronization by the rulers of the then kingdom. There were few poets like 'Arunabja' who then requested the local chieftains such as Chittupaddyboodu Moodillar and Nidambooruboodu Nidamburar to popularise Tulu literature and patronize them. Perhaps those efforts were not enough to sustain the use of the Tulu script. Tulunadu is a small region in comparison to the vast Karnataka, the existence of Tulunadu is tiny.

Along with flourishing as a folk language, Tulu has evolved as a Literary language too. Poets like Arunabja, Vishnuthunga have enriched the Tulu literature by their outstanding works and have retained the treasure of old Tulu in their literary

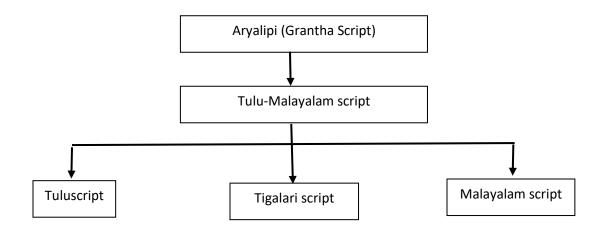
<sup>&</sup>lt;sup>1</sup>https://www.ethnologue.com/subgroups/dravidian

<sup>&</sup>lt;sup>2</sup><u>https://www.censusindia.gov.in/2011Census/Language-2011/Statement-1.pdf</u>

<sup>&</sup>lt;sup>3</sup>*Tulu Lipiya Moola MattuVikasa* (Origin and evolution of Tulu script), VenkatarajaPuninchithaya, *Tulu Sahitya Charitre* (History of Tulu Literature), Ed. B. A, Viveka Rai *et.al.*, Prasaranga (Publication Divn), Kannada University, Hampi, Karnataka, India, First edition, year 2007, pp160.

works. Tulu has uniquely preserved its word vocabulary in oral traditions as well as its word-original forms in transcribed palm leave manuscripts. The writing custom popularised to write veda-manthras and traditional rituals at that time is known as Tulu Lipi (Tulu Script).

In Kerala Tulu Script is known as Tulu-Malayalam Lipi (script). Once it was equally popular in Tulunadu and Kerala and hence it got the name 'Tulu-Malayalam Script'. There is one more variant of same known as 'Tigalari Script' used in North Kanara and Western Ghat regions. Origin of Tulu, Tigalari and Malayalam is Grantha Script hence all of them bear greater resembles.



A western researcher named Burnell in his work 'Elements of South Indian Palaeography' has compiled and published the complete Tulu character sets.<sup>4</sup>

During the time of Madhvacharya (Seer, Krishna Mutt, Udupi), Tulu script was very popular in Tulunadu. Madhvacharya wrote all his literature in Tulu Script. In fact, he used to put his signature in Tulu Script. Hence the period of 11th to 12th century could be considered as the evolution period for Tulu Script. People had strong religious affiliation to this script since most of the characters in Tulu script are written in clockwise orbital (because of the importance in Hinduism) and also people had a strong will to inscribe all ritual *mantras* in Tulu scripts.

Grantha Script transformed into Arya script, Tulu Malayalam Script, Tulu Script, Tigalari Script on various period of history and taken form of current Tulu Script.

On the advent of printing technology Tulu script went into oblivion. This is due to the fact that Christian Missionaries adapted Kannada script for printing Tulu. They might have thought of easing the process and reducing the efforts by not to have to duplicate the work of printing books in Kannada and Tulu scripts. Slowly people of Tulunadu got accustomed to using Kannada script for Tulu language.

<sup>&</sup>lt;sup>4</sup>Elements of South Indian Palaeography, A. C. Burnell, Trubner & Co., London, 1878.

There were efforts to revive the Tulu script recently. Some of them are by individuals without any institutional backing. One such example is mentioned here<sup>5</sup>. Karnataka Tulu Sahitya (Literary) Academy (KTSA), a body set up by Karnataka Govt, started working on reviving the Tulu script in the year 2007. Many meetings with scholars were held with the aim to arrive at a standardised Tulu script to be used for Tulu language. The Tulu script finalised now as detailed in this document is the result of those exercises. KTSA has published a book on Tulu script.<sup>6</sup> Given below are the main parts of that paper, translated into English.

A book in Hindi about Indian scripts lists Tulu script as a separate script.<sup>7</sup> Thousands of manuscripts in Tulu script were found in Tulunadu. Most of them relate *to Veda, Vedanta, Jyotisha*, Sanskrit literature, medicine, etc. Venkatraja Puninchathaya discovered "*Shree Bhagavatho*", an epic written in Tulu script and Tulu language. Thereby he proved that Tulu script used to write Tulu language also has a history of ancient literature. After that he discovered, edited, and published ancient books titled *Kaveri, Devi Mahatme* and *Mahabharatho*. S. R. Vighnaraj discovered, edited and published 9<sup>th</sup> chapter of Tulu *Bhagavatho*. Radhakrishna Belluru discovered, edited and published Tulu *Anantha Vrata* story, some manuscripts of 5<sup>th</sup> chapter of Tulu *Bhagavatho*, and some more manuscripts. Many inscriptions in Tulu script were found in Tulunadu. One copper inscription was also found in Tulunadu.

By the end of 19<sup>th</sup> century CE, the usage of Tulu script in Tulunadu diminished and almost stopped. This is due to the fact that it was not used in printing. Printing technology was brought to India by Christian Missionaries. They brought in printing technology for Kannada also, in the first half of 19<sup>th</sup> century CE. Bassel Mission of Mangaluru printed many books in Kannada and Tulu languages adapting Kannada script. Since all those who know Tulu also know Kannada, Bassel Mission did not think it was necessary to start manufacturing letters in Tulu script for printing books in Tulu script for the letter press printers of those time.

*Elattu* means writing. *Aryaelattu* means *Arya* script. The word *Arya* has a meaning of greatness and depicts Sanskrit language. Before the advent of printing technology, the script that which was prominent in use in Tulunadu was also used for writing Tulu language. This has been proved by the discovery of many manuscripts and inscriptions. Hence this script has been identified as Tulu script.

Due to the efforts of KTSA lot of interest has been generated among the people of Tulunadu to revive and use the Tulu script. Karnataka Govt has included Tulu as a language in the

<sup>&</sup>lt;sup>5</sup>https://web.archive.org/web/20200809091516/http://www.typoday.in/2012/spk\_papers/vaishnavi-murthy-typographyday2012.pdf

<sup>&</sup>lt;sup>6</sup>*Tulu Lipi* (Tulu Script), Radhakrishna Belluru, Karnataka Tulu Sahitya Academy, Mangaluru, 2020.

<sup>&</sup>lt;sup>7</sup>Bharatiya Prachin Lipimala (The Palæography of India). First published 1894. Publisher of 3rd edition MunshiramManoharlal, New Delhi 1971.

curriculum of 6<sup>th</sup> to 10 grades in school as well as in the under graduate courses. Many individuals, groups, organisations and non-profits are conducting Tulu script learning classes. Usage of revived Tulu script has gained momentum recently. Some of them are shown in Appendix-3. All these use the script finalised by KTSA. This document gives the details of that script.

### Structure

Tulu script has the basic structure very similar to other scripts derived from Brahmi script. It is written from left to right. It has basically three types of characters – *swaras* (vowels), *yogavahas* and *vyanjanas* (consonants). Consonants have the built-in or inherent vowel 'a' which can be replaced by the vowel signs known as *matras*. Since most Tulu speakers can read kannada also, the table below has shown equivalent characters in Kannada script as well. There are some characters in Tulu script which are not present in Kannada script. In the table below, those characters are shown by the shapes used in the Tulu Lexicon<sup>8</sup>.

Total number of proposed characters = 84

**Tulu vowels (swaras)** – the table below lists the independent vowels of Tulu script. There are totally 17 vowels.

In Tulu script	Detail	In Kannada script
269	TULU LETTER a	అ
~G3	TULU LETTER aa	3
ొ	TULU LETTER i	8
ານ	TULU LETTER <i>ii</i>	ಈ
Ž	TULU LETTER <u>u</u>	ಲ್
2	TULU LETTER u	ಉ
ୢୄୡ	TULU LETTER uu	ಊ
૪	TULU LETTER VOCALIC ŗ	ಋ

<sup>&</sup>lt;sup>8</sup>Tulu Lexicon, Volumes 1-6, Rashtrakavi Govinda Pai Research Centre, M.G.M. College, Udupi, 1997.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	TULU LETTER VOCALIC <b>ŗ</b> ŗ	ಯೂ
20	TULU LETTER e	ఎ
26)	TULU LETTER ee	ప
50	TULU SPECIAL SOUND $\in$	ລໍ
محه	TULU SPECIAL SOUND $\in \in$	<b>ఎ</b> ిఁ
ಗಿ∞ಲು	TULU LETTER ai	<b>ဆ</b>
ನ	TULU LETTER o	ఒ
19	TULU LETTER oo	ఓ
zn	TULU LETTER ou	8

**Tulu Consonants (***vyanjanas***)** – There are totally 36 consonants in Tulu. These are organized as *vargeeya* and *avargeeya* similar to other Indic scripts.

In Tulu script	Detail	In Kannada script
ದ	TULU LETTER k	ಕ
ข	TULU LETTER kh	ಖ
S	TULU LETTER g	ಗ
സ	TULU LETTER gh	ಘ
ଜ୍ୟ	TULU LETTER <i>'n</i>	8
21	TULU LETTER c	23
21/0	TULU LETTER ch	ಛ
ഞ	TULU LETTER j	ಜ
ക	TULU LETTER jh	ಝ

ഈ	TULU LETTER ñ	భ
5	TULU LETTER <u></u>	હ
O	TULU LETTER <i>th</i>	ठ
ພ	TULU LETTER <b>d</b>	ಡ
જ	TULU LETTER <b>dh</b>	द
ണ	TULU LETTER <u>n</u>	63
ത	TULU LETTER t	ತ
فا	TULU LETTER th	ø
3	TULU LETTER <i>d</i>	ದ
ω	TULU LETTER dh	ಧ
Μ	TULU LETTER <i>n</i>	ನ
പ	TULU LETTER p	ಪ
വ	TULU LETTER <i>ph</i>	ಫ
ബ	TULU LETTER <b>b</b>	ນ
ഹ	TULU LETTER <i>bh</i>	ಭ
2	TULU LETTER <i>m</i>	ಮ
გ	TULU LETTER y	ಯ
6	TULU LETTER r	ರ
ಅ	TULU LETTER <b>rX</b>	జ
ಲ	TULU LETTER <i>l</i>	ల
വ	TULU LETTER V	ವ
ຎ	TULU LETTER Ś	ಶ

n&	TULU LETTER ș	ಷ
ოე	TULU LETTER s	ਸ
ഗ	TULU LETTER h	ಹ
3	TULU LETTER <b>!</b>	ಳ
eo	TULU LETTER <u>I</u>	ట

Each of these 36 consonants have the inherent vowel "a" built into them. In the table above, the letters from  $\varpi(k)$  to 2 (m) are known as *vargeeya vyanjanas* depicting the fact that they are structured consonants. These are classified based on the position of the tongue while pronouncing those letters. These can be further illustrated in tabular form given below.

	voiceless	voiceless aspirate	voiced	voiced aspirate	nasal
Velars	ය (k)	2」 <sub>(kh)</sub>	ဟ <sub>(g)</sub>	<b>ഡ</b> <sub>(gh)</sub>	<b>ഘ</b> <sub>(ṅ)</sub>
Palatals	21 <sub>(c)</sub>	210 <sub>(ch)</sub>	ഞ <sub>(j)</sub>	<b>രു</b> (jh)	ഈ <sub>(ñ)</sub>
Retroflex	S (ț)	O <sub>(<i>th</i>)</sub>	${\mathfrak W}_{(q)}$	<b>W</b> <sub>(<i>dh</i>)</sub>	ണ <sub>(ग़)</sub>
Dentals	ത <sub>(t)</sub>	መ <sub>(th)</sub>	<b>3</b> (d)	W (dh)	M <sub>(n)</sub>
Labials	പ <sub>(p)</sub>	<b>റ്ട</b> <sub>(ph)</sub>	ബ <sub>(b)</sub>	<b>ഹ</b> <sub>(bh)</sub>	<b>2</b> (m)

Remaining consonants are known as *avargeeya vyanjana*s meaning unstructured consonants.

**Yogavaha** (Various signs) – There are two characters which can be called as part vowel. They are *anusvara* and *visarga* as described in the following table.

In Tulu script	Detail	In Kannada script
ം	TULU VOWELSIGN anuswara am	0
0:	TULU VOWELSIGN visarga <b>ah</b>	8

**VIRAMA SIGN** (Equivalanet of Halant) - Like Devanagari, Tulu script also needs a sign to depict the removal of the inherent vowel "a" from the consonant. This is the equivalent of *halant* (or VIRAMA in Unicode) in Devanagari and many other Indic scripts. It is shown in the table below.

In Tulu script	Detail	In Kannada script
്	TULU HALANT(VIRAMA)	<del></del>

**Tulu Vowel signs** – These are known as *matras*. These dependent vowel signs serve as the common manner of writing non-inherent vowels and are generally referred to as *Swara Chinhas* or *Matras* in Sanskrit. They are not written independently but are written in the combination with a base letter. These are the vowel part of stand-alone vowels which get joined to consonants or consonant clusters. When a consonant cluster ends with the inherent vowel "a" no separate vowel sign is depicted. When the consonant cluster, commonly known as syllable, ends with a vowel other than "a", then that cluster is written by ending with the appropriate vowel sign. There are 17 vowels out of which the letter "a" does not have an equivalent vowel sign. Hence there a total of 16 vowel signs as depicted in the table below.

In Tulu script	Detail	In Kannada script
ា	TULU VOWELSIGN aa	7
ା	TULU VOWELSIGN i	9
්	TULU VOWELSIGN <i>ii</i>	9 e
്	TULU VOWELSIGN <u>u</u>	್
Ç	TULU VOWELSIGN u	3
ু	TULU VOWELSIGN uu	n
੍ਹ	TULU VOWELSIGN ŗ	ల
C.	TULU VOWELSIGN <b>ŗ</b> ŗ	್ರಾ
গত	TULU VOWELSIGN e	و

JO.	TULU VOWELSIGN ee	ిల
JO	TULU SPECIAL SOUND ∈	9
90	TULU SPECIAL SOUND $\in \in$	ిల
۱۹⊖	TULU VOWELSIGN ai	ہ ف
<b>)</b> ⊖1	TULU VOWELSIGN o	ೊ
୭୦ๅ	TULU VOWELSIGN 00	ຸຈ
ొ	TULU VOWELSIGN ou	FP

**Digits and numerals** – Like any other Indic scripts, Tulu script also has its own digits and numerals. There are digits for 0 to 9 and also for 10 and 100 separately. Having separate digits for 10 and 100 is different from Kannada, but similar to Malayalam.

Digit	In Tulu script	Detail
0	0	TULU DIGIT zero
1	f	TULU DIGIT one
2	5	TULU DIGIT <i>two</i>
3	ి	TULU DIGIT three
4	60	TULU DIGIT four
5	3	TULU DIGIT <i>five</i>
6	ത	TULU DIGIT six
7	າ	TULU DIGIT seven
8	20	TULU DIGIT eight
9	უ	TULU DIGIT nine

10	З	TULU DIGIT ten
100	გ	TULU DIGIT hundred

**Conjuncts**- Tulu script behaves very similar to other Indic scripts. It is called formation of syllables (clusters). These are also known as *samyuktakshara* or conjuncts. They are made up of *swara* or vowels (V), *vyanjana* or consonant (C) and *matra* or vowel signs (Vs). There could be a *yogavaha* at the end of the cluster or syllable. The common forms are standalone vowels (V), consonants (CC), consonant with vowel sign (CVs), known as *gunithaksharas*, or consonant cluster with vowel sign (CCVs). Note that the consonants have inherent vowel sign "a" built into them. To make conjuncts (*samyuktakshra*) the inherent vowel sign "a" has to be removed. This is done by adding the *halant* (Viarama) to the appropriate consonant.

**Gunithaksharas** – When vowel signs or *matras* are added to consonants, we get *gunithaksharas*. There are 36 consonants and 16 vowel signs. Each consonant can have addition of all vowel signs. The vowel signs have all these forms -post-base, below-base and pre-base. One sample sequence with consonant "k" is shown below.

Consonant "k"	Vowel sign	Vowel sign detail	gunithakshara
ದ	ា	TULU VOWELSIGN aa	മ്പ
ದ	ି	TULU VOWELSIGN i	ති
ದ	ಿ	TULU VOWELSIGN <i>ii</i>	ති
ದ	്	TULU VOWELSIGN <u>u</u>	ັລັ
۵	0°	TULU VOWELSIGN u	۵,
۵	ୄୖ	TULU VOWELSIGN uu	Q
ದ	୍ଦ୍	TULU VOWELSIGN <u>r</u>	ದೃ
ದ	C.	TULU VOWELSIGN <u>r</u> r	ದೃ
ದ	<b>)</b> ()	TULU VOWELSIGN e	ಿದ
ದ	C	TULU VOWELSIGN ee	ාස

ದ	Q	TULU SPECIAL SOUND $\in$	Ja
ದ	ം	TULU SPECIAL SOUND $\in \in$	ລເ
ದ	າົ	TULU VOWELSIGN ai	າາດ
ದ	<b>)</b> ⊖1	TULU VOWELSIGN o	୩୦୦୮
ದ	୭୦୨	TULU VOWELSIGN 00	ງຕາ
ದ	ී	TULU VOWELSIGN ou	ದ್

**Samyukthaksharas**-Like other Indic scripts, in Tulu also a large number of consonant clusters or *samyukthasharas* are possible. The combination of consonants with or without a vowel sign at the end makes a syllable. Since consonants have inherent vowel "a" in them, they have to be removed before joining with next consonant. This is done by the addition of *halant* (Viarama). This behavior is in tune with most other Indic scripts. In a consonant cluster, the first consonant will have the full shape of it. The next consonant after the *halant* takes the below-base form similar to Kannada script, known as *ottu* (or *vattu*). If there are more than two consonants in the cluster, all consonants after the first consonants, take the below-base form. If there is a vowel sign (*matra*) at the end, it is joined using its rendering rule, depicted in the table of vowel signs (post-base, below-base or pre-base forms). There can be one of the *yogavahas* also at the end of the cluster.

Some sample samyukthaksharas with the consonant "k" -

First consonant ("k")	Second consonant (after halant)	Samyukthakshara without additional vowel sign	With vowel sign "i" at the end
ದ	ข	<mark>ک</mark>	ති
ದ	S	ą	තී
ದ	202	۲ ۵	තී
ದ	5	ğ	ୟୁ
ದ	ത	ð	කී

**Punctuations and other symbols** – Tulu script can use punctuation marks and other symbols like *avagraha*, *danda*, *double danda*, from other code blocks just like many other Indic scripts.

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#### **APPENDIX A**

### 11**B50**

### Tulu

### **11BBB**

Various signs		
11B50	А	TULU SIGN ANUSVARA
11B51	В	TULU SIGN VISARGA

	Vowels		
11B54	2 <b>6</b> 9	TULU LETTER A	
11B55	~G	TULU LETTER AA	
11B56	ొ	TULU LETTER I	
11B57	າງ	TULU LETTER II	
11B58	হঁ	TULU LETTER UA	
11B59	2	TULU LETTER U	
11B5A	0.hr	TULU LETTER UU	
11B5B	ళ	TULU LETTER VOCALIC R	
11B5C	%	TULU LETTER VOCALIC RR	
11B5D	26	TULU LETTER E	
11B5E	29	TULU LETTER EE	
11B5F	56	TULU LETTER AE	
11B60	5 D	TULU LETTER AEE	
11B61	ീ²േ	TULU LETTER AI	
11B62	ര	TULU LETTER O	
11B63	13	TULU LETTER OO	
11B64	37	TULU LETTER AU	

	Consonants		
11B69	α	TULU LETTER KA	
11B6A	2	TULU LETTER KHA	
11B6B	S	TULU LETTER GA	
11B6C	ശ	TULU LETTER GHA	
11B6D	പ	TULU LETTER NGA	
11B6E	บ	TULU LETTER CA	
11B6F	210	TULU LETTER CHA	
11B70	ഞ	TULU LETTER JA	
11B71	പ	TULU LETTER JHA	
11B72	ണ	TULU LETTER NYA	
11B73	5	TULU LETTER TTA	
11B74	O	TULU LETTER TTHA	
11B75	w	TULU LETTER DDA	
11B76	જ	TULU LETTER DDHA	

11B77	ണ	TULU LETTER NNA
11B78	ത	TULU LETTER TA
11B79	٩	TULU LETTER THA
11B7A	3	TULU LETTER DA
11B7B	ω	TULU LETTER DHA
11B7C	с	TULU LETTER NA
11B7D	പ	TULU LETTER PA
11B7E	വ	TULU LETTER PHA
11B7F	ബ	TULU LETTER BA
11B80	ŝ	TULU LETTER BHA
11B81	2	TULU LETTER MA
11B82	გ	TULU LETTER YA
11B83	6	TULU LETTER RA
11B84	ల	TULU LETTER RRA
11B85	ಲ	TULU LETTER LA
11B86	ຎ	TULU LETTER VA
11B87	ຄ	TULU LETTER SHA
11B88	n&	TULU LETTER SSA
11B89	იე	TULU LETTER SA
11B8A	ഗ	TULU LETTER HA
11B8B	3	TULU LETTER LLA
11B8C	ಲಾ	TULU LETTER LLLA

	Vowel signs			
11B8F	ា	TULU VOWEL SIGN AA		
11B90	୍ର	TULU VOWEL SIGN I		
11B91	ි	TULU VOWEL SIGN II		
11B92	്	TULU VOWELSIGN UA		
11B93	C°	TULU VOWEL SIGN U		
11B94	ୁ	TULU VOWEL SIGN UU		
11B95	್ಕ	TULU VOWEL VOCALIC R		
11B96	C.	TULU VOWEL VOCALIC RR		
11B97	<b>)</b> O	TULU VOWEL SIGN E		
11B98	3O	TULU VOWEL SIGN EE		
11B99	jO	TULU SOUND AE		
11BA4	٩O	TULU SOUND AEE		
11BA5	110	TULU VOWEL SIGN AI		
11BA6	າວາ	TULU VOWEL SIGN O		
11BA7	୬୦ୀ	TULU VOWEL SIGN OO		
11BA8	್	TULU VOWEL SIGN AU		

11BAB	്	TULU SIGN HALANT

		Tulu numerale
		Tulu numerals
11BB0	0	TULU DIGIT ZERO
11BB1	f	TULU DIGIT ONE
11BB2	2	TULU DIGIT TWO
11BB3	ి	TULU DIGIT THREE
11BB4	8	TULU DIGIT FOUR
11BB5	ଉ	TULU DIGIT FIVE
11BB6	ത	TULU DIGIT SIX
11BB7	າ	TULU DIGIT SEVEN
11BB8	2	TULU DIGIT EIGHT
11BB9	υ	TULU DIGIT NINE
11BBA	ω	TULU DIGIT TEN
11BBB	ъ В	TULU DIGIT HUNDRED

#### **APPENDIX B**

Collation of Tulu characters is to be modelled after Kannada.

TULU SIGN ANUSVARA
TULU SIGN VISARGA
TULU LETTER A
TULU LETTER AA
TULU LETTER I
TULU LETTER II
TULU LETTER UA
TULU LETTER U
TULU LETTER UU
TULU LETTER VOCALIC R
TULU LETTER VOCALIC RR
TULU LETTER E
TULU LETTER EE
TULU LETTER AE
TULU LETTER AEE
TULU LETTER AI
TULU LETTER O
TULU LETTER OO
TULU LETTER AU
TULU SIGN HALANT
TULU VOWEL SIGN AA
TULU VOWEL SIGN I
TULU VOWEL SIGN II
TULU VOWELSIGN UA
TULU VOWEL SIGN U
TULU VOWEL SIGN UU
TULU VOWEL VOCALIC R
TULU VOWEL VOCALIC RR
TULU VOWEL SIGN E
TULU VOWEL SIGN EE
TULU SOUND AE
TULU SOUND AEE
TULU VOWEL SIGN AI
TULU VOWEL SIGN O
TULU VOWEL SIGN OO
TULU VOWEL SIGN AU
TULU LETTER KA
TULU LETTER KHA
TULU LETTER GA

TULU LETTER GHA TULU LETTER NGA TULU LETTER CA TULU LETTER CHA TULU LETTER JA TULU LETTER JHA TULU LETTER NYA TULU LETTER TTA TULU LETTER TTHA TULU LETTER DDA TULU LETTER DDHA
TULU LETTER CA TULU LETTER CHA TULU LETTER JA TULU LETTER JHA TULU LETTER NYA TULU LETTER TTA TULU LETTER TTHA TULU LETTER DDA TULU LETTER DDHA
TULU LETTER CHA TULU LETTER JA TULU LETTER JHA TULU LETTER NYA TULU LETTER TTA TULU LETTER TTHA TULU LETTER DDA TULU LETTER DDHA
TULU LETTER JA TULU LETTER JHA TULU LETTER NYA TULU LETTER TTA TULU LETTER TTHA TULU LETTER DDA TULU LETTER DDHA
TULU LETTER JHA TULU LETTER NYA TULU LETTER TTA TULU LETTER TTHA TULU LETTER DDA TULU LETTER DDHA
TULU LETTER NYA TULU LETTER TTA TULU LETTER TTHA TULU LETTER DDA TULU LETTER DDHA
TULU LETTER TTA TULU LETTER TTHA TULU LETTER DDA TULU LETTER DDHA
TULU LETTER TTHA TULU LETTER DDA TULU LETTER DDHA
TULU LETTER DDA TULU LETTER DDHA
TULU LETTER DDHA
TULU LETTER NNA
TULU LETTER TA
TULU LETTER THA
TULU LETTER DA
TULU LETTER DHA
TULU LETTER NA
TULU LETTER PA
TULU LETTER PHA
TULU LETTER BA
TULU LETTER BHA
TULU LETTER MA
TULU LETTER YA
TULU LETTER RA
TULU LETTER RRA
TULU LETTER LA
TULU LETTER VA
TULU LETTER SHA
TULU LETTER SSA
TULU LETTER SA
TULU LETTER HA
TULU LETTER LLA
TULU LETTER LLLA

Sorting sequence of Tulu characters, top to bottom.

#### **APPENDIX C**

Some examples of usage of the revived Tulu script.

ടിസ്പാല പബ്, തുഡര പാബ്ാഡു ബലിന ຊາຕອີທາຕ ທູ່ສຳປາດທ໌ ຕນາດົງ ຊຍູ ຊາຕອົາທ, നതുന്നു പബ്, തുഡര് ചതാസ്താപന പബ് ബലിപ്പാപ്പ തുധര പബ്ദ മുഞി പ്രധാന ഷ്കുചരാണല്. ത്താന ഏശ്യാമധാം മല് ന ณอายาสสูงต่า กราก มาก ลายูงพ ແລະ ຄຸຍາວ ກາດ ພາການ ແລະ ແລະ ເປັນ ഷുട്ടാഡു തട്ട് 3് പ്രാഡുപ. താഡത് നാരാജ്ഞ രുപുഡു ബൗതുട് മുണ്ടി പാണ്ണ ടാന ാരന്വാപര് ധമാന്മ ബലി മാപന്വാ പ്രാശ മല്പറോട്ട മാത്രാനുവ, മറബാന പാണ്ട്യ ധുമി, രഡ്ഡാണ പ്രാണ്ണ ചങ്ങുമ്പാശ, മുണ്ടാന പ്രാണ്ണന รยาต้ ตาลสั 3 เว ณาตาราบางรางเล้. จะณู้ อบผู้ ตัวรณ รมุต รสาย าณารุ มาณู ดาทั ബรู้ ๓ ดุรุตาพั ตั ณุพุ านานเติ പണഡ്വന്ഗ ബലി പിര പിര തിര്പ്പ് 3്

തൂറ്പ പൗച്ചാഡു മുണ്ടി ചതി ബലിന് തുജനാഡ് ഗ് ബാരൂര് നാരാക്താദാപര് ഹാപ്പാശ മല്ല് ന്നാത്ര് തുനോഡ രാടങ്ങുന്ന നിനന് നാബാംമി പ്രാണുമുലന്, ഷ്ലാതു 1നുന്ന പാസാമിദ ബുജഹാപ്യാനു താഞ്ഞി നത്തത്താലന് തുട്ട ബാര്റ്റ് ചങ്കുപ്പാശ മല്ല് നമ്പാപിര് າຍາພົງມານາຊາ ພວຍທີ່ມາພວບພາຍ ഷരിബാര് ബുമത തുഡര പബ് nപാലാപാല് മാപ്പാംബ് ഏറ്റം - พริวิ - พลาพที่ (พิสีพงกม 30 อยุก പ്പാലപ്പത്തു മച്ചാം പ്രപ്പന ദിന) സ്താണദ പറമ്പിഡ്സ് (ഡട്ട്, യരമ്പാം ณารดั, ณพ่ ธลูโอาาณา03 ณ0ๆ รุดาณุต าณาต่, ้าารง รรงาาด വാതിരി ചൂര് ഷസ്വിന **സ**ാത് പ്പാറാതല്പാപ്പായി പ്രബ് പഠപ്പാപ്പാസ് തുറ്റുനായ് ഗ് ബാര്വര്



ຈສາດ, ຂຍ ທາທູວສຳຫາດາສຳດຸດຕັ້ອາດອຍ ചാമല്ലാത്ന് തന്ന്ന്ന്ന് പ്രസ്സ് പരി ഷാപ്പ താറിന് തയിപ്പുപ്പും ജാറ ຕານປົດ <u>ພວຕາ</u>ໜີ, ຊຸໜາຕ ພດ ທູພດ പ്രാംബാര് ഏലന തുനോഡ് ഗ് അതു 3 ബ്ബിപ് തായ തായദ ത്യാര്, എമിദ തുഡര് (ബാല്പന്റ) തുപാര, മൂഌി ടിനത ന്നലാ ബലാം 23, 27 26 ബലി າຜາາຕາຍ ຄາຍາວບວ່າ, ສາດຜູ້ ອາຊ າສາພາພ (ຄາຍ) ລໜ້ວງ ສາຂໍາສາ), aພma ງຊາວຣຸ ທທາຍາາພູ (ພູດຣັ, າທາວຊຸຊ ഛാഡ, າവാഡി ബഌില າສາາനാലാര, າສາະທຸາທາວາພ ຕຼຸສະ ດັ ຄາຍ ຄາຄາຄາຍ (ເສນອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີງອາດອີ പബ്ദപഗ എര് അപായ തീമന്ദ) മ്... മ്... മ്.... മറ്വ പ്ര ഷപരദിന് പ്രാഡ ഏഷം ഹാവ വബ്നി? າາປອງ ແມ່ນ ເມື່ອງ ເພື່ອ ເພື മുമ്പാരാല് പുത്രട്ട് നിംസുപാട് പബ്ദാനി าബายุญุ ณณ์ ลิณุ าาณะทั ณยิงรู้ ഗ് ബല മപ്പിപൂനി രാന്ത്ര താണ്ടി าาธธิดายายท์ กายาราพ 33 ตุมค่ ചതാണ്ടിപ്പനി 203 ചഗാവുണ്ടം ഛാവാന ഷരിപ്പര് ശാശിഗ് തഡര് ചന്വാഞിപനാപ ധനലത്തി പൂണ്ട ാടവിപത്വ വീബിസ് 

ചായി പ്രാരാനസായ ചത്വാങ്കിട് ബപ്രായ മല് ട്രുപാല പബന് ത്നര പാബാദ് ൗലപ്പപ്പര് ദുറപ്പ പ്പാസ്പാ ഗട്ടെ മുട് പ്പാലത്ത് 3് ചുമാരു 2000 പ്രചിച്ചത് പിരപ്പു തുനോഡ് തഡല് ഡു മദിത്. ബത്ലാഷ് പിണ്ട്രിനില ഛഹിപ്പാം ഷീപന് ഏപ്പാടന്റ പരശരാമ ശ്രീഹ്മിറ്റ് പ്രാഡര്. ഈ ചത്ദ പ്രാംം ຄົມພໍລາລາພັ ງທສົງ 25-40-2040 ഷനത്മാദാനി, ാതന്മാലാഗ് ച്ചാമരദാനി าาการังพั รุงกนุ ณาการ่าง **പ**്പാപ ത്രായ്യായാ ന്വാംനാറന്

#### ടീപ പിലിത തുന്നഡ് ത്രധര പിബ



<mark>ിപാണ്ടാലഗ് ക്കാരു</mark> ന്നത മാല്ലാറദു ອາພຸດ າຊຫຼຸດູ ວຸຊ ທົບຸ່ຕາກຕ ຕູ້ພົອາອັ <mark>ാവിതുഡ് തുടുനാഡ് ഡ് ബിച്ചത ഗൗണ്</mark>തി. ഷ്യനഗ ഘട്ട നമതാല തിമുന ലത്നന മാവിന്നത തരപ്പാരിദാന <mark>ത്നില് മല്പാപര്</mark>. തുയര പ്രബ് ബന്ഗ ഏനി -ങഡ്വദ ഗൗൺി. തുന്നോഡ് ചറച്ചതി മാത്ര ചങ്ങ് അനാന്മന ചാപതിന് ബാന്മ പുഗരുനാമിന മ്രാബ , ข้อബല് പഠദ് എല്ബ ാന്താതുലന് <u>ല</u>വ്വാം സ്റ്റ്റ് പ്രാദ്യം പ പ്രാദ്യം പ്രാദ പ്രാദ്യം പ്രാ າຍຕຼຳເປດັ ນປ3ຕາຍ, ສາທູ3 ຕາາຍາພຸ ະເພີຊຕົງ ພວາກ ເດ ເຊິ່າການ, തുജനാഡ്സ് ഛപ്പു മണ്ണ് ഡ്റ്റബാദ്രഡ് ມອາຫາສາດັ່ນເລັ້າ, ມອາຊສາດັ່າຊອ ຊານດັ່ ຊຸດຄາໄຊ ໝາມຄາກທີ່ ພາມອຄິ ສາຍາພົນ ຈະການກົດຊື່ ແພ້ງດອງ ພາຍຄຸດ ທີ່ມີເອດ ທີ່ ສຸດມາວ ແລ້ວ ແພ້ວ ແລະ <sup>ച</sup>ര്ച്ചതിഗ് പ്രചാദ് ച്രൂരാധാന മൂല്യപ്പാടിത്ലാഡ് മാതാ മാടിന്ദാഡ് ഗനദ ബാല, ാടപാപ്പാനാദ യഠാട 3 ശണ ശണ ขยาว, ฌล เดียาลานุด กนุร പരപ്രന. നീര് 3 ന്വല് തൃഗാര തിന്മൂനാദിത്ല് സ്. ഏ ബാങ്തുദ ത്നലാഡു താള്ളന മാഡലാ നമുട്ടി മന്റ്റാഡ്. ാട്ടാപരന

ഞനുഗ്രന ൗത്ലാഡ്, മല്ലി ബാലഗ് ഫുല തന്ത്പാര് ടിത്ര്ഡ്, നന്ദ് എസ്സ ഒപ്പുറപാര് າຫລົ້າພາວ ສີຫຼັດພັ. າາ 3 ປ ສ ສິ ລີ 🖓 ขมายเราตั้ กี่ ๆ ๆ ตั้ง น้ำ ๆ ๆ ๆ พ่าน ผ ๑๑๓๓ า๚ลุรุ ๕๓ๅ๛ ณี่ ฃ๛๛๛ ๚ ണുന മട സ്ഥി പഠപാര ാപരധെ മഠന് പ തുജനാഡ ഞിഘഡ് മഠാദന് സ്പാലുഡ്

ഷ്ടുവരാണ മന്വാപര്. ഈ ചതി മിവുന പബ് 27 ാന് ചാനതാര ചരാഡ 2ന്താന 31നി നുതനുത പബ്. 2ഹാന ദാനി **പ**്പാത്രാലം പൂണ്ടെ മന്പാപര് ന്നുപ്പാരഗ് മടുപ ചെയ്യാനെ ത-ര ടിനല പ്രബ്ദ ഷൗഡ്ല തിഠദു ചക്തിലാറു. ത്പാര പബ് മാത് തുനോഡ് പ്രത്നാം രി പറച്ചയും പാര പ്പപ്പാരടിത്ല് രാബ്ദപ്പെട്ട "പലത് നിഗിപ്പപ്പ പ്പാപത് താനന്ന പ്രധിപ പ്പാതരലാ നിണ്ട ചതാണുരാധു ഗാജ് മയ്ലിന്നത് പ്രഋഗ്, തിനൗഋഗ് ബഠഞ്ഞ ബൗരായാപ.

ബരപു : മാസഠദ്ദന്വല ച്വാലത്തര

#### Article in Tulu script



Board of a hotel



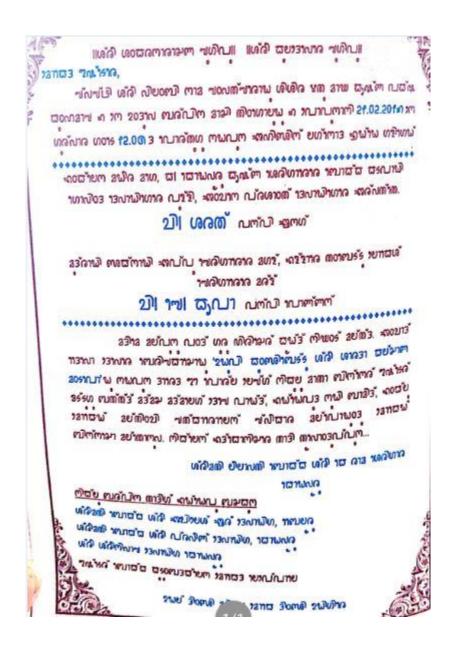
Tulu letters on a bus



Some billboards, signboards and direction boards



T-shirts with Tulu script



A marriage invitation in Tulu script



# Phone : 08570 - 278 220, Fax : 08570 - 278 230 DRAVIDIAN UNIVERSITY

SRINIVASAVANAM, KUPPAM - 517 426, (A.P.)

(దావిడ విశ్వవిద్యాలయం, కుప్పం.

Dr. B.S. Shivakumar

11<sup>th</sup> September 2020

Professor & Head Department of Tulu & Translation Studies

То

**Unicode Technical Committee** Unicode Consortium California

Dear Sir/Madam,

Sub: Request to encode Tulu script-Regarding

We have been waiting eagerly for the encoding of `Tulu Character Set' proposed by Karnataka Tulu Sahitya Academy.

The students of Tulu are learning those characters since years and we are happy to use the font design approved by the Tulu Sahitya Academy, Karnataka State, India.

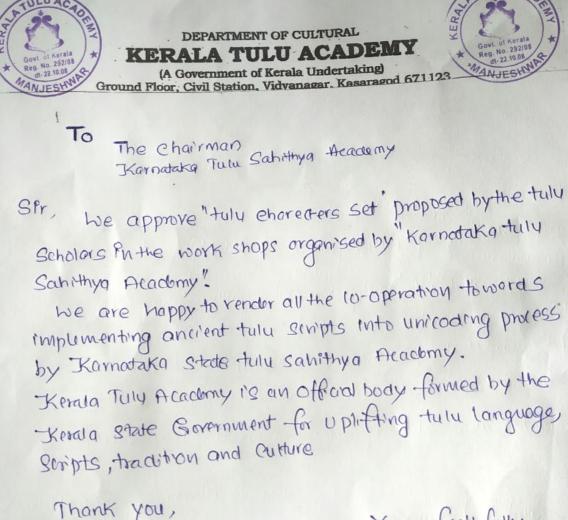
We are happy to know that Dr. Akash Raj Jain has taken up the charge of it on behalf of the Academy and request you to kindly encode the script characters as proposed by Academy with the technical support of Dr.U.B. Pavanaja, renowned scholar, as early as possible.

Thanking You,



Regards, B. S. SHAVAKUMAR Head Dept. of Tulu Language and Translation Studies

Dept. of Tulu Language and Iransiation Studie DRAVIDIAN UNIVERSITY KUPPAM - 517 425





Yours farthfully

HERALA TULU ACADEMY

Monjeshward 20-6-2020



#### ಪ್ರೊ. ಪಿ. ಸುಬ್ರಹ್ಮಣ್ಯ ಯಡಪಡಿತ್ತಾಯ ಎಂ.ಕಾಂ, ಪಿಎಚ್ಡ ಕುಲಪತಿ Prof. P. Subrahmanya Yadapadithaya M.com,Ph.D. Vice Chancellor

No. MU/VC/2020-21

ಮಂಗಳೂರು ವಿಶ್ವ ವಿದ್ಯಾನಿಲಯ MANGALORE UNIVERSITY (Accredited by NAAC with 'A' Grade)

ಮಂಗಳಗಂಗೋತ್ರಿ – 574 199, ಕರ್ನಾಟಕ Mangalagangotri- 574199, D.K. Karnataka, India

08.09.2020

To

Unicode Consortium California.

Dear Sir,

We have been waiting eagerly for the encoding of 'Tulu Characters set' proposed by 'Karnataka Tulu Sahithya Academy'

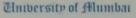
We have been teaching those characters in our institution to public, through private organisations since years. And also we are happy to use the font design approved by the academy.

We request you to kindly encode the Tulu Characters script proposed by Tulu academy representative Dr. U. B. Pavanaja . Et Al; at the earliest.

Thanking you,

Yours faithfully,

(P. Subrahr anya Yadapadithaya)





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Date

Department of Kannada, University of Mumbai, Ranade Bhavan, 'A' wing, 1ª Floor, Vidyanagari, Santacruz (East), Mumbai - 400 098

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Tel No. (Off) : 2654 3530 2654 3345 2654 3469

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Email : kannadadepartment@gmail.com Website : www.mu.ac.in

Ref. No. : UDK/12 / 5 C / of 2020-21

**Respected Sir** 

We approve 'Tulu Characters set proposed by the Tulu Scholars in the workshops organised by 'Karnataka Tulu Sahitya Academy'.

We are happy to render all the cooperation towards implementing ancient Tulu scripts into unicoding process by 'Karnataka Tulu Sahitya Academy.

We have been teaching the same scripts to private interested organisations in the state of Maharashtra India. the script and font has been very much appreciated by the learners.

We find it comfortable and user friendly, herewith we request you to kindly include the script in the unicode process at the earliest.

Yours Sincerely,

Dr.G.N.Upadhya Head Univ.Dept.of Kannada