Tamil (solutions)

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Below are some words in the Tamil language, transcribed using a system of phonetic symbols developed by American linguists in the 20th century. The symbol ":" following a vowel indicates that it is long, ṭ , ḍ and ṇ are retroflex versions of t, d, n (pronounced with the tongue curled backwards), č sounds like English "ch", š like English "sh", ǰ like English "j", ñ like Spanish ñ in "Español", ð like English "th" in "that", β is like Spanish "v" in "lavar", ɻ is a retroflex sound like English or Mandarin "r", γ is like Spanish g in "pagar", ŋ is like English ng in "sing", ḷ is a retroflex version of l, and ɨ represents a high central unrounded vowel, like Russian ы or Guarani "y".

1.	vi:ḍɨ	"house"	26.	paṇam	"money"
2.	paɻam	"fruit"	27.	naṇḍɨ	"crab"
3.	kaβam	"phlegm"	28.	aŋge:	"there"
4.	iḍaðɨ	"left"	29.	čirippɨ	"laughter"
5.	vaŋgi	"bank"	30.	aččam	"fear"
6.	ka:ḍɨ	"forest"	31.	viral	"finger"
7.	ka:ṭṭɨ	"show!"	32.	namakkɨ	"to us"
8.	añǰɨ	"fear!"	33.	ru:βa:y	"rupee"
9.	pe:ččɨ	"speech"	34.	vanda:y	"you came"
10.	čonne:n	"I said"	35.	mo:šam	"bad"
11.	romba	"very (colloquial)"	36.	tamiɻ	"Tamil"
12.	maγan	"son"	37.	ya:ɻ	"harp"
13.	makkaḷ	"people"	38.	ella:m	"everything"
14.	ka:ppa:tta	"to protect"	39.	malar	"flower"
15.	muðɨγɨ	"back"			
16.	kuppai	"trash"			
17.	eɻɨttɨ	"letter"			
18.	eɻɨðɨ	"write!"			
19.	mu:ñǰi	"face (colloquial)"			
20.	arivɨ	"knowledge"			
21.	pe:šɨ	"speak!"			
22.	pe:ši	"having spoken"			
23.	činna	"small"			
24.	pašikkiraðɨ	"is feeling hungry"			
25.	toṇḍai	"throat"			

Assignment 1: If you study the data carefully, you will notice that not all of the sounds appear in all positions in a word. This is called "defective distribution" by linguists. Describe the environments in which each sound in Tamil occurs. You may ignore the consonant "y" for this exercise. If you feel that you don't have enough data to draw a solid conclusion, please mention this.

All geminates appear intervocalically.

We have no examples of geminate fricatives, and all voiced fricatives appear intervocalically, except for <v> which appears at the beginning of "viral", "vanda:y".

Voiced plosives only appear before nasals, which always match their place of articulation, except for <ḍ> which also appears intervocalically in 4.

Voiceless plosives to not appear intervocalically, except <ḍ> in 4.

<š> appears in the same conditions as voiced fricatives, and <č> appears in the same conditions as voiceless plosives.

<ɹ> only appears intervocalically or at the end of a word

Syllable structure is generally (N)C(:)V(:), meaning optionally a nasal onset if the following consonant is a plosive or affricate, a possibly geminate consonant, and a possibly long vowel. However, the final syllable in a word may have a coda of <m, n, l, y ḷ, ɹ, i>. Also, the first syllable in a word need not have a consonantal onset, and it may not contain the optional nasal or a geminate consonant.

<ñ, ŋ> only appear as a nasal onset to syllables containing voiced consonants of their place of articulation.

Assignment 2: In order to describe the sound systems of languages, linguists make use of the notion of the "phoneme." A phoneme is "a contrastive unit in the sound system of a particular language." In structural linguistics, each phoneme has a series of realizations (actual sounds that are produced by the speaker). Realizations of the same phoneme are called "allophones." Knowing this, how many phonemes are there in Tamil? For each, give their allophones and the environments in which they occur.

Vowels
/a/, /e/, /i/, /u/, /o/
/ɨ/ - only appears in the last syllable or in a syllable adjacent to one containing /ɨ/
/a:/, /e:/, /o:/, /i:/, /u:/

[NB: In the traditional analysis of Tamil, ɨ is considered an allophone of /u/ in non-initial syllables. However, this is not completely clear from the given data.]

Plosives/Affricates - listed allophones occur intervocalically and after a nasal, respectively
/p/ - [β], [b]
/t/ - [ð], [d]
/č/ - [š], [ǰ]
/ṭ / - [ḍ], [ḍ]
/k/ - [γ], [g]

Nasals
/m/, /n/, /ṇ/, /N/ - archiphoneme; only occurs before a plosive/affricate and assimilates to its POA
([ñ, ŋ] are not phonemic)

Approximants / Trills
/v/, /l/, /y/, /r/, /ɹ/

NB: The Tamil language is a Dravidian language spoken in the South Indian state of Tamil Nadu. It is spoken by approximately 77 million speakers.