

# KaTaPaYadi System

# कटपयादि

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# What is kaṭapayādi (कटपयादि)?

- Alpha-Numeral System
- Letters/Syllables to Numbers (many-to-one)

#### Memorize

18111117015664002438166017811625

#### सद्रलमाला

नञावचश्च शून्यानि सङ्खाः कटपयादयः।

मिश्रे तूपान्त्यहल् सङ्ख्या न च चिन्त्यो हलस्वरः॥

## How does it work?

1	2	3	4	5	6	7	8	9	0	
<del></del> क	ख	ग	घ	ङ	च	छ	ज	झ	স	
ट	ठ	ड	ढ	ण	त	थ	द	घ	न	
प	फ	ब	भ	म	-	-	-	-	-	
य	₹	ਲ	व	श	ष	स	ह	ळ	-	

Rule	Example	Number
नजौ अचः च शून्यानि	न, ञ, अ, इ, उ,	0
सङ्खाः कटपय-आद्यः	क, ट, प, य	1
मिश्रे तु उपान्त्यहल् सङ्खा	श्र = श् + र् + अ	2
न च चिन्त्यः हल् अस्वरः	ਲ੍	-
	अङ्कानाम् वामतो गतिः	

### It it useful?

- It can be!
- Value of Pi
  - भद्राम्बुद्धिसिद्धजन्मगणितश्रद्धा स्म यद् भूपगी: 314159265358979324
- Carnatic Music (karnāṭaka saṅgītam)
  - rāga have numbers (IDs) (01-72)
  - ullet First two syllables of each  $r\bar{a}ga$  name o ID
    - कन काङ्गी ightarrow 01■ रता ङ्गी ightarrow 02■ रिस कप्रिया ightarrow 72
- Timelines of Books
  - नारायणीयम् (Summary of भागवतपुराण)
  - आयुरारोग्यसौख्यम् → 1712210 → Date of completion (number of days since the start of kaliyuga)
- Fun of samskrta

#### **Procedure**

- Data-drive approach
- Inverted index
- Input → Partiions (top-down)
  - $12345 \rightarrow [[12345], [1, 2345], [12, 345], \dots, [1, 2, 345], \dots]$
- Parametrized

#### **Improvements**

- Inclusion/Exclusion of specific words
- Syntactic and semantical analysis (Heavy)
- Generative approach
  - Amarakoşa, Dhātupāṭha
  - Morphology Generation

## KaTaPaYadi System

- Corpora: रामायणम्, महाभारतम्, श्रीमद्भागवतम्, वेदाः, ...
- Decode verses
- Encode numbers
- Upload corpora



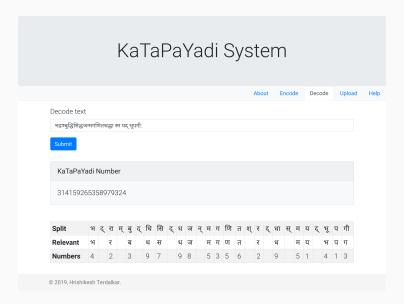




https://sanskrit.iitk.ac.in/jnanasangraha/sankhya/katapayaadi/

# Thank you! Questions?

## **Decoding**



## **Encoding**

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