

# **1 Swaram Specifications for Padam Validation**

## **1.1 Basic Swarams:**

The basic swarms are udAttam (not marked), anudAttam (**q**) and Swaritam(**#**).

Dheerga Swaritam (**\$**) with double line is an extension of Swaritam only.

When Swaritam becomes Dheerga Swaritam.

**Note: Baraha Codes given in Bracket**

**Take care whether o and e are represented in small or capital letters**

## **1.2 Basic Letters**

**Vowels Short: a, i small, u small, Ru, IRu**

**Vowels Long: A,I,U,E, ai,O,au,RU,IRU**

**Anuswaram : am**

**Visargam = H**

**Any word/padam ending with m or M is anuswaram letter.**

**Any word/padam ending with H is a visarga letter.**

**Consonants:**

**ka varga - k,K,g,G,~g, (caret symbol on key board)**

**ca varga - c,C,j, J, ~j**

**Ta varga - T, Th, D, Dh, N**

**.ta varga – t,th,d,dh, n**

**Pa varga – p,P,b,B,M or m**

**Others – y,r,l,v,h**

**L is for hard La as in VeLLam for water in Malayalam**

**Ushman – s, S, Sh (s for sarawati, S – for Siva Sh for PuShpam)**

**Other Vedic Symbols used – (gm) ,(gg), & for avagraha , ~M for Nasal**

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**Normal Consonants** – any of the code for Consonant +plus vowel sound

**Conjunct consonant** – has two consonant letters without a vowel sound in between like gna, gya, tra, Bya etc.

### 1.3 Rules for checking Dheerga swaritam:

#### 1.3.1 At any place in a vedic statement a long letter has

Swaritam but followed by a Conjunct consonant

Examples

गणानान्त्वा गणपतिः	स्थिरै-रङ्गै-स्तुष्टुवाः
नमो निषङ्गिणे स्तेनानां पतये	नम आव्याधिनीभ्यो
नमो व्रातेभ्यो	नमो रथेभ्यो
नमः सेनाभ्य	कमरिभ्यश्च वो

#### 1.3.2 At the end of a vedic statement or padam which has

A long letter ending with Swaritam (long letter, visaraga letter or long anuswaram or a halant) Examples

सहस्राक्षाय मीढुषे ।	नातताय धृष्णावे ।
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अव पश्चात्तात् । अव पुरस्तात् । अवोत्तरात्तात् ।	प्रचोदयात्
अस्मन्निवपन्तु सेनाः	तन्मित्र एति पथिभिर्देवयानैः
वायुर्नक्षत्रमभ्येति निष्ठ्या	पूषा रेवत्यन्वेति पन्थां ।

#### short anuswaram letter Examples

अववक्तारं । अव श्रोतारं । अवदातारं । सरिषः पातुनक्तं ॥	नीचातंधक्ष्यत सन्न शुष्कं । ऋषिभिस्संभृतं रसं ।
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#### 1.3.3 A long letter with visargam or anuswaram which forms a conjunct consonant with followin letter

##### Examples

उभाभ्यां देव सवितः प्रजायां ब्राह्मणं हन्ति	सा मां मेधा, आमां मेधा तेषां वः पुरो,
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यो दे॒वानां॑ पु॒रोहि॑तः ।	स॒मान॑ लो॒कतां॑ ँ॒यन्ति॑
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### 1.3.4 Dheerga Swaritam after short letters: (08/02/2020)

#### Case 1 When th is added after n.

A hrasva (short) letter is followed a joint letter (conjunct consonant) through a rule and that short letter acquires dheerga swaritam but reflected in the next letter during rendering.

Let us explain this with a direct example:

When “n” is followed by **sa, Sa, Sha**, an ‘th’ is added to smoothen the flow of letters as per Consonant Sandhi rule. When the word before ‘n’ is a short letter(hrasva) and it get a swaritam, it is difficult to render it with the following joint letter (conjunct consonants). The letter is extended to dheerga swaritam, since it is difficult to elongate a short letter, the effect of dheerga swaritam is extended the following letter which is ‘n’.

तस्मि॑न्त्सु॒पर्णो॑ म॒धुकृ॑त् कु॒लायी॑	स्मि, is a short letter. It is followed by nth, the effect of extending is on ‘n’. Though ismi is marked with swaritam and it has acquired dheerga swaritam, the real effect of rendering will be like तस्मि॑न्त्
तस्मि॑न्त् सर्वं॑ प्र॒तिष्ठि॑तं	Same as above

आवेशय-न्निवेशयन्- थ्सँवेशन-	Here the effect of the dheerga swaritam of 'ya' will be extended to 'n'.
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### Case 2 Letters gya after short anuswaram

संज्ञप्यमानात् , संज्ञपन्त्यैन्द्रः , संज्ञपयन्ति

These words appear in the middle of a mantra. The prefix 'saM' is a short anuswaram. But it is followed by a conjunct consonant 'j' and 'gya'. It would be difficult to recite only swaritam of 'saM' and move to jgya; so 'saM' acquires dheerga swaritam. Specific rule covering such instance is being referred to in grammar/vedic books.

### 1.3.5 Swaritam before Swarabhakti :

When Swarabhakti of r. appears before s,S,Sh; the **letter previous to r. cannot be a swaritam** if the letter starting with s,S and Sh are simple consonants. The r. is taken as a Swarayukta akshara (normal consonant)

भागिनः सन्तमथा भागं चिकीर्षति
सप्त वै शीर्षण्याः प्राणाः ।
तेन कोर्ऽहति स्पर्द्धितुं

The letters marked in yellow are dheerga letters with swaram followed by a conjunct consonant (joint letter). The letters do not acquire dheerga swaritam.

When the letter **र, र्, री** is followed by letters of class (स, ण, ल), (ष, ष, ञ), (श, ष, ष), ह, ए, ए, or (ऋ, ॠ, ॡ), as a rule the 'r' is extended to double its maatra value..instead of half. This representation of 'r' is called Swarabhakti in technical terms. Swara bhakti treated as Swarayukta akSharam only and as a rule does not get Dheerga Swaritam.

### Exception to 1.1.5 above

TS 6.3.7.2 the following statement appears twice in this Panchati. The 'mA' is a dheerga letter with swaritam followed by 'r' but is **not followed** by a **consonant of 'Sha'** but a **conjunct of 'ti' with 'Sh'**. The Dheergam swaritam is retained.

If the 'r' is followed by a Conjunct Consonant of sa,Sa or Sha, 'r' is not treated as swarabhakti.

सं मा॒रि, णम् मा॒रि, लम् मा॒रि

## 2 Validation Checks if the Padam is typed correctly.

### 2.1 General check:

If the Padam ends in a H or M(m) the last letter has swaram it should be marked **before H or M** **not after H or M**. That is for Visargam and Anuswaram. If halant dotted letter appears at the end of a padam then the swaram is before dotted letter a@vO@ca@t

### 2.2 The Padam has a single letter

**Check :** The letter can have **either an anudAttam (q) or no marking ( ) UdAttam**. Both are valid. **Wrong typing is the responsibility of the Coder.**

Examples: mA,tat, tvam, Sam, yat , A, yAH or mE@, tE@, tvA@, na@H, va@H, mA@, ca@

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## 2.3 The Padam has two letters:

**Check:** if first letter is **anudAttam** and then second letter should be **either anudAttam or udAttam**.

**Check :** if first letter is **udAttam**, the second letter shall be **Swaritam or Dheerga Swaritam** apply above rules.

**Examples – both anudAtaam -** ru@dra@, a@stu@, ku@ru@, a@sya@e@na@m

**Examples of first anudAtam next udAttam -** Si@vA, u@ta, a@sau

**Example of first udAttam and next Swaritam -**

nama#H, viSvA\$, hastE\$,maya#H,

## 2.4 The Padam has three or more letters

**Reading in reverse order will help.**

### 2.4.1 Last letter is anudAttam:-

1. **Check if the last letter is an anudAttam**, then all the letters in that Padam must be marked in anudAttam only.

**Examples -** mRu@Da@ya@, a@vO@ca@t, va@dA@ma@si@

### 2.4.2 Last letter is Swaritam or Dheerga Swaritam

1. **Check if the last letter is a Swaritam or Dheerga Swaritam:**

**Then previous letter shall be udAttam and the letter previous to it shall be anudAttam.**

ga@NAnA\$m , ma@nyavE\$. ta@nuvA\$, su@manA\$H, a@Bita#H  
ml@DhuShE\$, dhRu@ShNavE\$,

2. **If there are more than three letters**, than the **letters previous** to that anudAttam which is **third from reverse** shall also be anudAttam.

**Examples:** su@ma@~gga#a#H , sa@ha@srA@kShAya#

3. **If all the preceding letters are anudAttam with no udAttam**, give that letter as exception to check coding.

**Examples:** SaqraqvyA\$, yAqtuqdhAqnya#H

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### 2.4.3 Last letter is udAttam:

**Condition 1:** - Last letter is UdAttam and the previous all letters are anudAttam it is OK.

Example: pra@tha@maH, a@ru@NaH, ka@vl@nam

**Condition 2 – Last letter is UdAttam and a previous set of letters are UdAttam** (one or more) but one of the following letter in reverse order should be a swaritam or Dheerga swaritam. Then previous letters to this swaritam combination shall be UdAttam followed by one or more anudAttams or end with first letter in UdAttam

Example: Si@vata#mA, hira#NyabAhave, hari#keSAya, giri#Santa saqspi~jja#rAya, Aqkraqndaya#te, AqvyAqdhin#nAm, aqvaqsarpa#ti

**Technically in a single word padams after a swaritam or dheerga swaritam no swaram will occur.** The Part after swaritam is called Ekasruti.

**Condition 2 – Last letter is UdAttam and a previous letter is anudAttam**

Then the letter third from last shall be either an udAttam then it should be preceded by a Swaritam;

If the third letter from last shall be a swaritam, then previous shall be udAttam or UdAttam which in itself be preceded by anudAttams.

Example: dyAvA#pRuthiqvl.

Here the Ekasruti concept does not apply because it is a joint word with dyAvA#+pRuthiqvi. These will be checked by us again.

**Condition 4 –** There is an occurrence of two UdAttams together in any Padam that needs to be given as an exception list:

**These are all words joined with two padams.**

aqgnlShomau\$, aqgnlShomA\$ByAm, miqtrAvaru#Nau, miqtrAvaru#NayoH

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**Condition 5: Letters with two swaritams get formed when two padams are joined. Give a list of exceptions.**

Here if you work back there is a dheerga swaritam preceded by udAttam and anudAttm..then another udAttam occurs check if it preceded by Swaritam, UdAttam and anudAttam combine.

These are again words with two padams joined together.

dyAvA#pRuthiqvIByA\$m

**Input file: word file – padams are separated by vertical line**

**Each input panchati has title in form n.n.n.n - padam**

**Output Expected:**

1. Any validation fails for a Padam – output the Panchati Number as n.n.n.n – Padam in word file
  - a. Give padam count number – Padam as input in file plus give validation failed message
  - b. If Exception list appears – words with two Swaritams (2.4.3 Condition 5), with two udAttams together (2.4.3 Condition 4) or Padams with no udAttam (2.4.2 – condition 3)