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, lRu

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

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

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 or Padam a long letter has Swaritam but followed by a Conjunct consonant
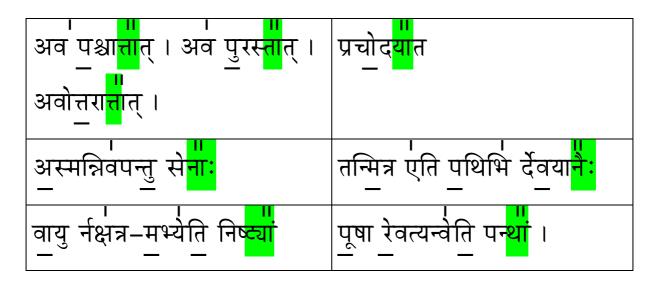
Examples

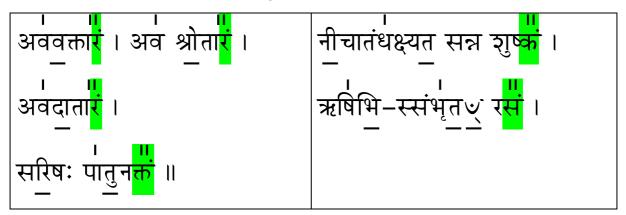|	
गणानान्त्वा गणपतिꣳ	स्थिरै–रङ्गैं–स्तुष्टुवाꣳ
नमो निषङ्गिणे स्तेनानां पतये	नम आव्याधिनीभ्यो
नमो व्रातेभ्यो	नमो रथेभ्यो
नमः सेनाभ्य	कर्मारिभ्यश्च वो

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 धृष्णवे ।

अव प॒श्चात्तात् । अव पु॒रस्तात् । अवो॒त्तरात्तात् ।	प्रचो॒दयात
अस्मिन्निवपन्तु॒ सेनाः	तन्मित्र एति पथिभि र्देवयानैः
वायु र्नक्षत्र-मभ्येति निष्ट्यां	पूषा रेवत्यन्वेति पन्थां ।

short anuswaram letter Examples

अववक्तारं । अव श्रोतारं । अवदातारं ।	नीचातंधक्ष्यत सन्न शुष्कं । ऋषिभि-स्संभृतꣳ रसं ।
सरिषः पातुनक्तं ॥	

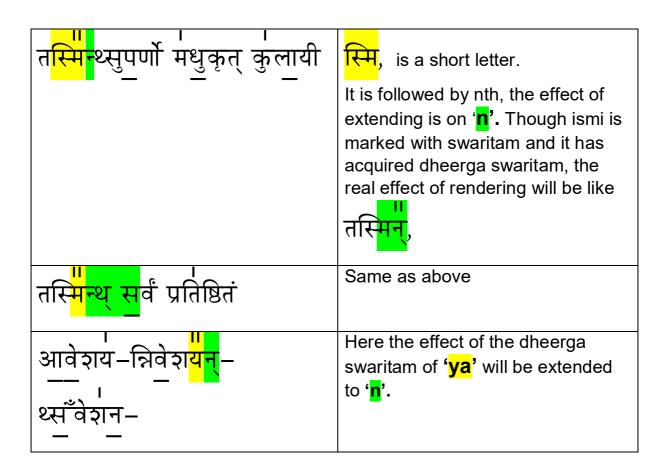## 1.3.3 Dheerga Swaritam after short letters: (08/02/2020)

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 (conjuct 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'.**
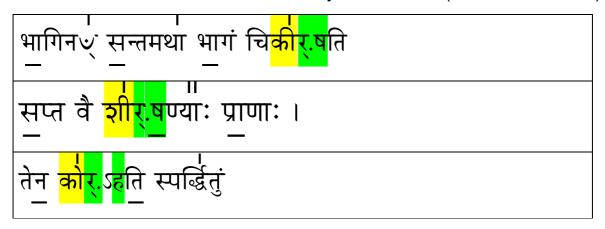
तस्मिन्थ्सुपर्णो मधुकृत् कुलायी	स्मि, is a short letter.
	It is followed by nth, the effect of extending is on '**n**'. Though ismi is marked with swaritam and it has acquired dheerga swaritam, the real effect of rendering will be like तस्मिन्,
तस्मिन्थ् सर्वं प्रतिष्ठितं	Same as above
आवेशय–न्निवेशयन्– थ्सँवेशन–	Here the effect of the dheerga swaritam of '**ya**' will be extended to '**n**'.

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.

1.3.4 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)

भागिनᳶ सन्तमथा भागं चिकीर.षति
सप्त वै शीर.षण्याः प्राणाः ।
तेन कोर.ञ्हति 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., ॠ, ಠ **is followed by letters of class** (स ,ಸ , ಲ),

(ष, ಷ, ಞ), (श, ಶ, ಳ), ह, ಹ ಲ) or (ऋ , ಋ, ಞ), 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 माष्षि॑ , ஸம் மா॑ர்ஷ்டி , സം മാ॑ർഷ്ടി

2 Validation Checks if the Padam

is typed or input 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 as in Tamil) appears at the end of a padam then the swaram is before dotted letter (halant letter) aqvOqcaqt

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
mEq, tEq, tvAq, naqH, vaqH, mAq, caq**

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 - ruqdraq, aqstuq, kuqruq, aqsyaq eqnaqm

Examples of first anudAtam next udAttam - SiqvA, uqta, aqsau

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 - mRuqDaqyaq, aqvOqcaqt, vaqdAqmaqsiq

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.

gaqNAnA$m , maqnyavE$. taqnuvA$, suqmanA$H, aqBita#H mIqDhuShE$, dhRuqShNavE$,

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: suqmaq~ggala#H , saqhaqsrAqkShAya#

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

Examples: SaqraqvyA$, yAqtuqdhAqnya#H

2.4.3 Last letter is udAttam:

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

Example: praqthaqmaH, aqruqNaH, kaqvIqnam

Condition 2 – **Last letter is UdAttam and a previsous 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: Siqvata#mA, hira#NyabAhave, hari#keSAya, giri#Santa saqspi~jja#rAya, Aqkraqndaya#te, AqvyAqdhinI#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 previsous 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#pRuthiqvI.

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

Condtion 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.

aqgnIShomau$, aqgnIShomA$ByAm , miqtrAvaru#Nau, miqtrAvaru#NayoH

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 highlighted**

   a. **Give padam count number – Padam as input in file plus give validation failed message – for swarita/dheerga swarita rule or other conditions not fulfilled**

   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). All this list in (b) shall have reference like in failed validation – panchati number n.n.n.n – Padam count number- the Padam.**