

## Deccan College Post-Graduate and Research Institute (Deemed to be University) Pune 06



### An Encyclopaedic Dictionary of Sanskrit on Historical Principles

SDP is the biggest Project of its kind across all the languages of the world.

It stands out by the virtue of huge corpus and data collection in the History of any language.

Overview

Covers 62 disciplines of Indian knowledge system encoded in Sanskrit
Around 1500 primary texts for collection of head words
Encyclopaedic in nature

Historical arrangement tracing the development of meanings across time and disciplines

### Technological need of the time has initiated the undertaking of the Project:







Digital KoshaSHRI Sanskrit Encyclopaedic Dictionary







#### **Development of Online Portal**

- i. 36 volumes of printed material
- ii. More than 6000 printed pages with double column
- iii. More than 1,00,000 vocables with meanings and citations

### Article Authoring Tool for Dictionary Making

This tool is developed to facilitate the whole process of Dictionary making with maximum use of technology

This is the core tool and requires 100% customization as per the requirements of the Project 02

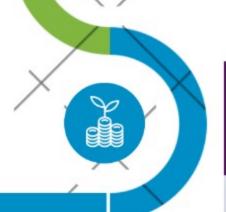


KoshaSHRI is being developed as a web-based tool.
KoshaSHRI provides unique tool to create accounts of scholars and assign them work, to collect the work, and to edit the same

01

Swift progress

03



Utility of use of technological tool in Sanskrit Dictionary Project

onary

03

Collaboration

Web based tool facilitates coll aboration which is the need of present time 04

Global reach

he Various search or as per detailed to incincreases it an inevitable to

05

02

#### Accuracy

- Pre-filled data through selection from drop-down how
- Final preview format is generated automatically

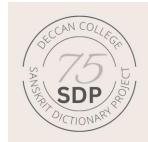
Research tool





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Pro-VC, Deccan College ( Deemed University)
General Editor(I/c), Sanskrit Dictionary Project



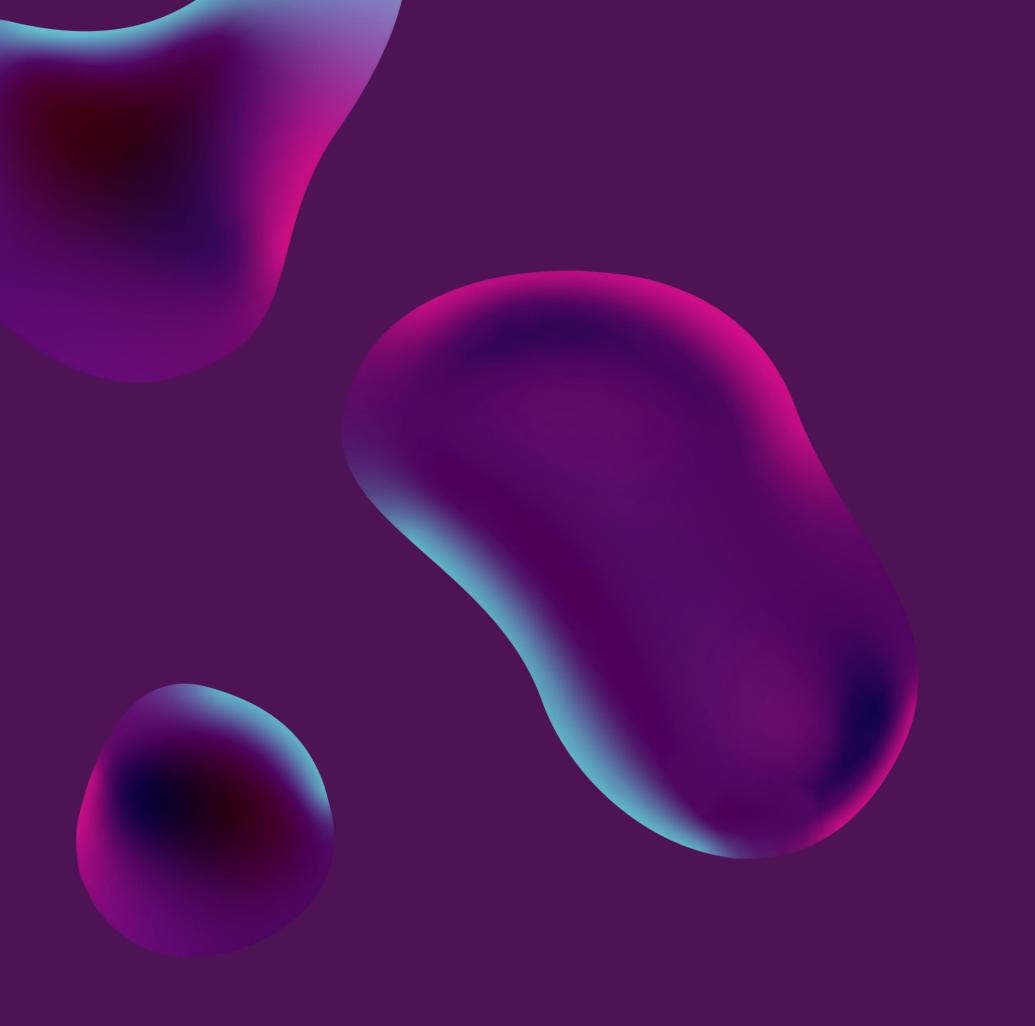
## Sanskrit Dictionary Project (SDP) Overview

SDP is the biggest Project of its kind across all the languages of the world.

It stands out by the virtue of huge corpus and data collection in the History of any language The Corpus:

- Covers 62 disciplines of Indian knowledge system encoded in Sanskrit
- > Around 1500 primary texts for collection of head words
- > Encyclopaedic in nature
- ➤ Historical arrangement tracing the development of meanings across time and disciplines

What is the process for SDP? Data assignment Reference completion Meaning decision Meticulous arrangement Final editing and publication



What will we need in the future?

## Technological Need of the Time

# Availability of the Dictionary Online

Current trends require the presence of any work of importance to be readily available for scholars Online. Moreover, it should be searchable in both general and advanced modes.

# Customization of the Process of Dictionary Making

The whole complex process of Dictionary making needs to be customized as per the needs of the Project, through the use of technology.

# Tool to include all the contributors

Such huge Project requires dedicated tool to include all the possible contributors across the world.

## What are we Developing?

The technology adaptation Project:

## KoshaSHRI

Jointly with our Technological partner C-DAC, Pune



### Aspects of KoshaSHRI

Online Portal

All the printed volumes are to be made available Online.

Article
Authoring Tool
for Dictionary
Making

Use of technological tools for making of Dictionary.

03
Crowd Sourcing

Crowd sourcing is an emerging need for such huge Project.

Technology can make it achievable in present time.

# Online Portal for Printed volumes

The Dictionary as a tool will be used more and more Online by the present and future users.

The task of making available the printed volumes of SDP is itself a big Project. This will deal with:

- ☐ 36 volumes of printed material
- ☐ More than 6000 printed pages with double column
- ☐ More than 1,00,000 vocables with meanings and citations

And the whole data must be available through both:

- ☐ General Search
- ☐ Advanced Search



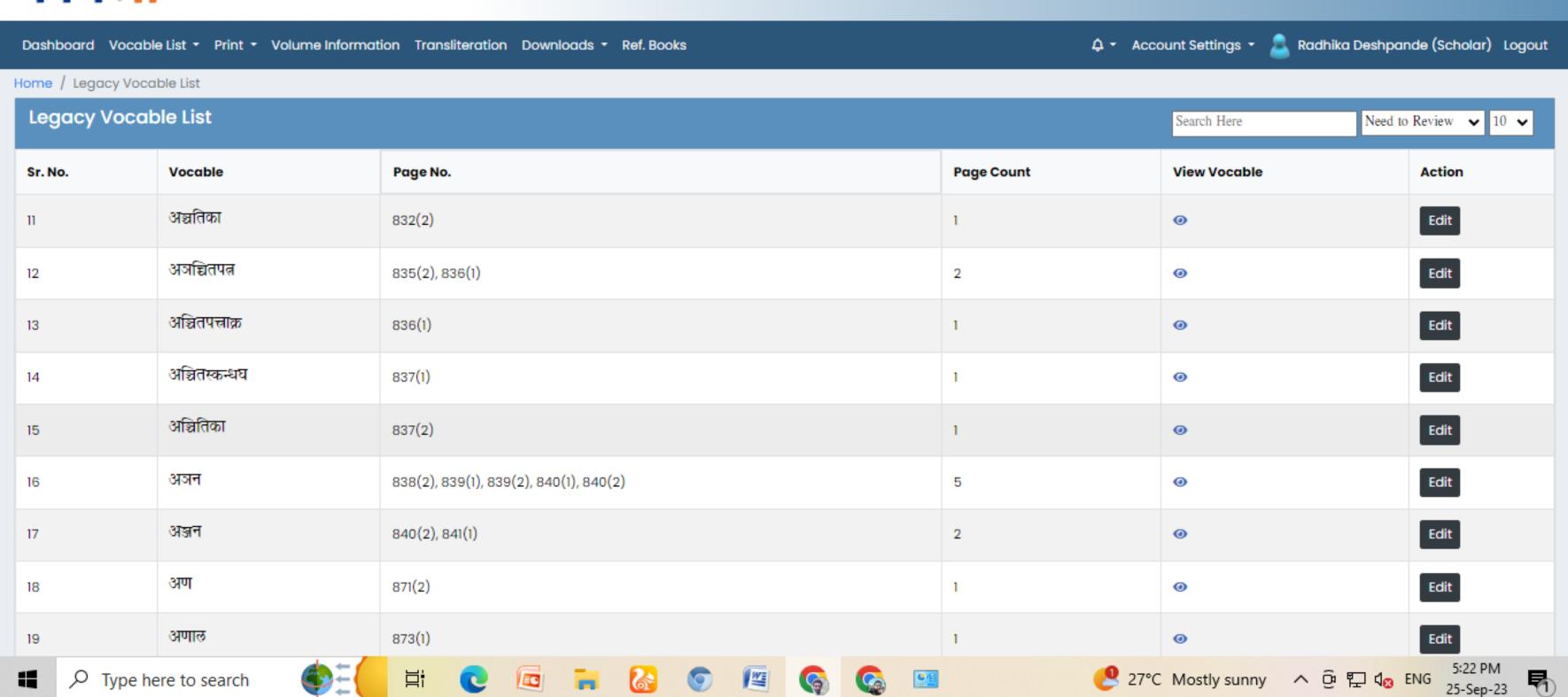
# Process of Digitization

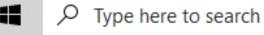
- 1. Scanning of the printed pages
- 2. OCR for producing the texts
- 3. Identification of the elements
- 4. Tagging of each element

Verification of all the above



Scanned and tagged distributed data















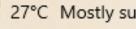










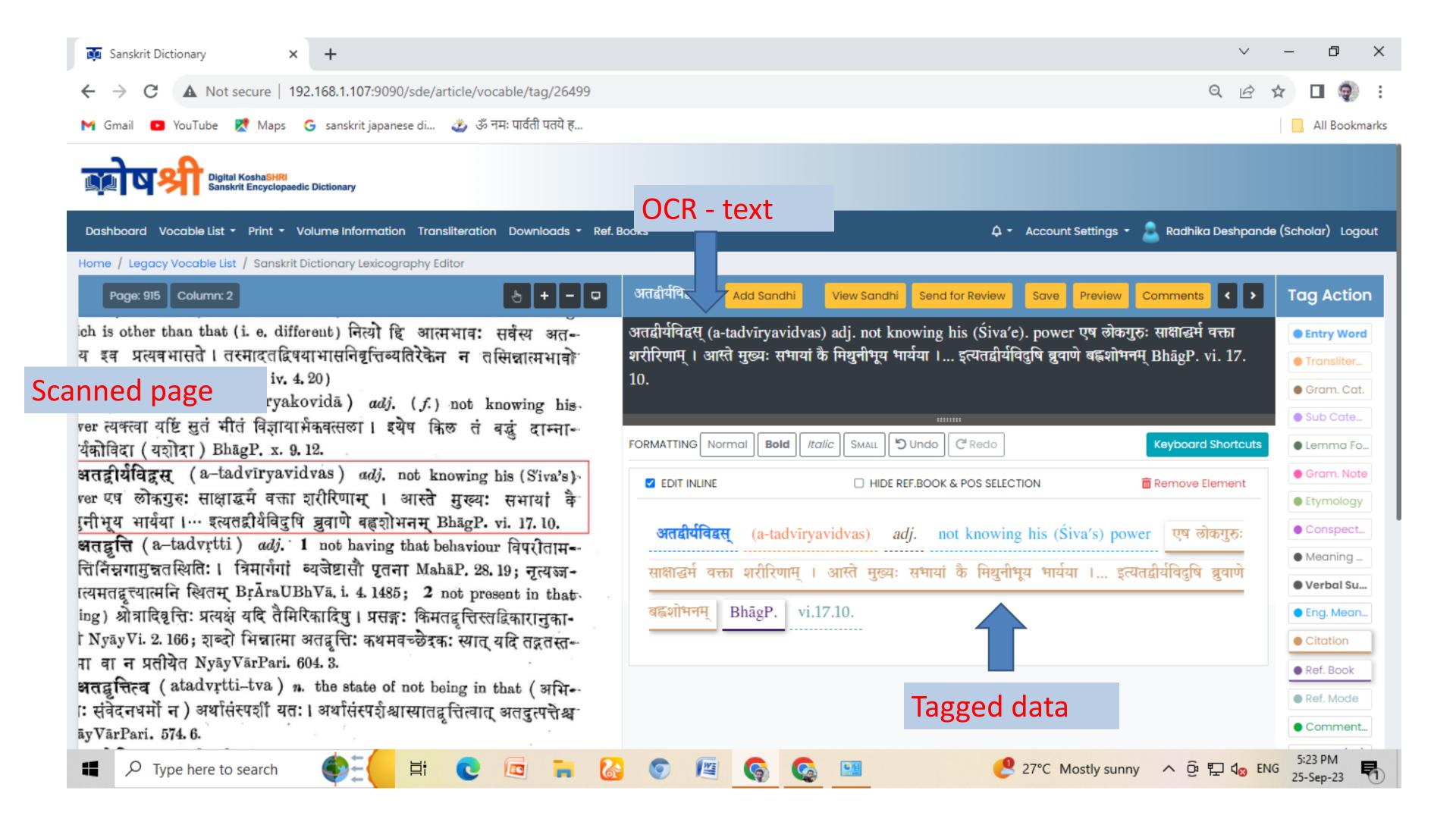












02

# Article Authoring Tool

This tool is developed to facilitate the whole process of Dictionary making with maximum use of technology

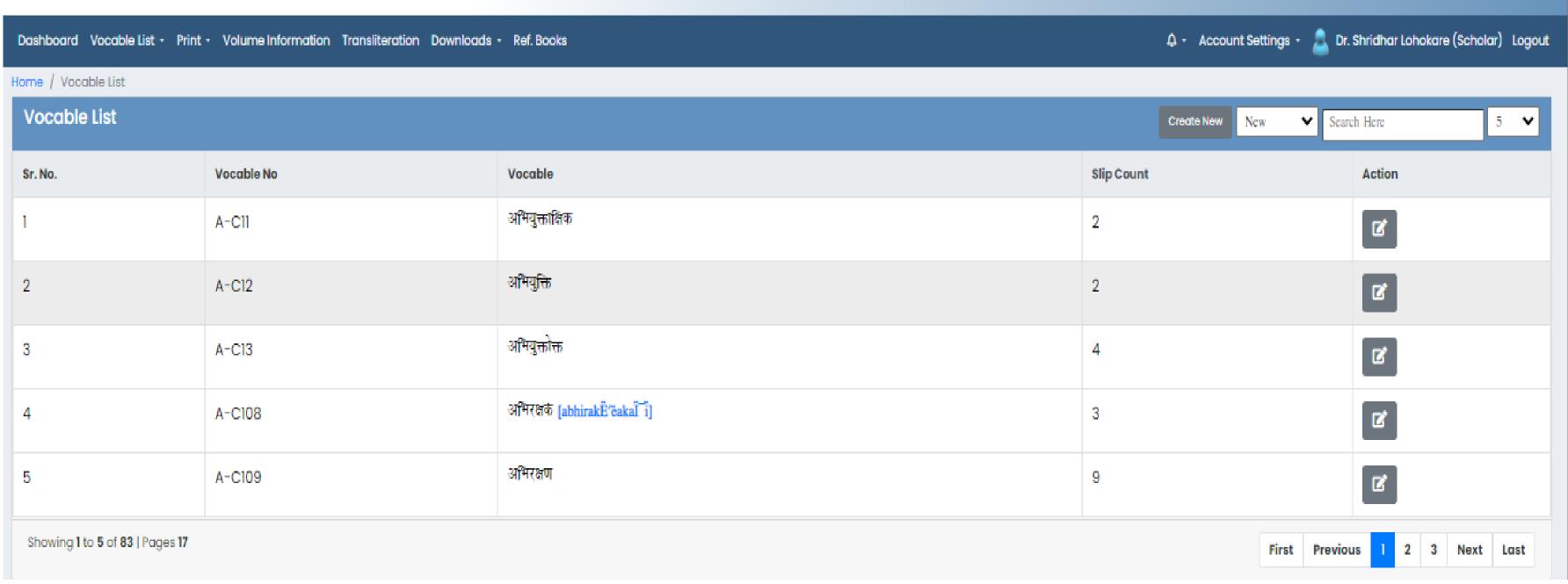
This is the core tool and requires 100% customization as per the requirements of the Project

# Process involved in Article Authoring Tool

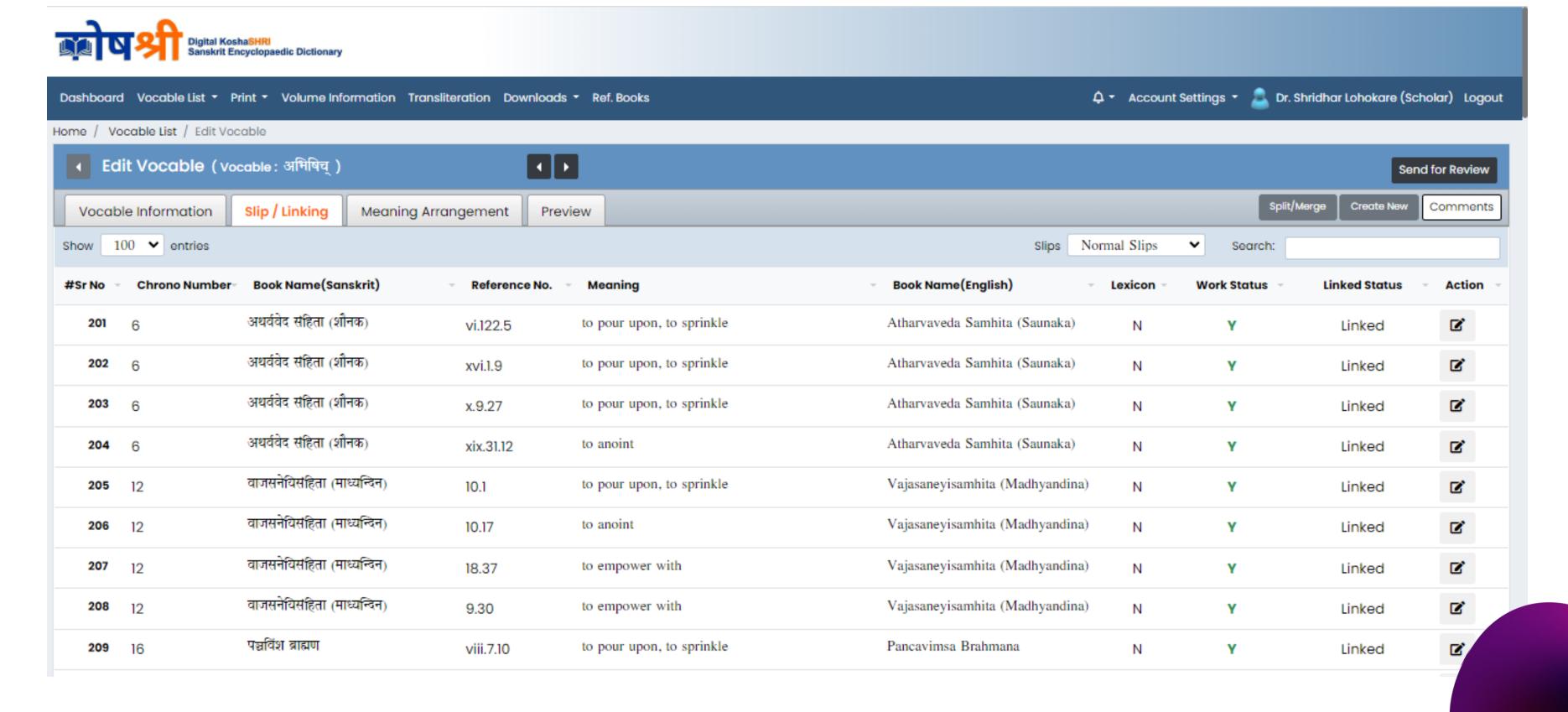
- 1. Assignment of the vocables along with the reference slips
- 2. Completion of the reference slips by the scholars which involves:
  - i. Assigning grammatical data
  - ii. Adding citation
  - iii. Assigning meaning
  - iv. Adding commentaries and other information
- 3. Arrangement of Meanings
  - i. Classification of meanings
  - ii. Chronological sequence of meanings
- 4. Generation of final preview

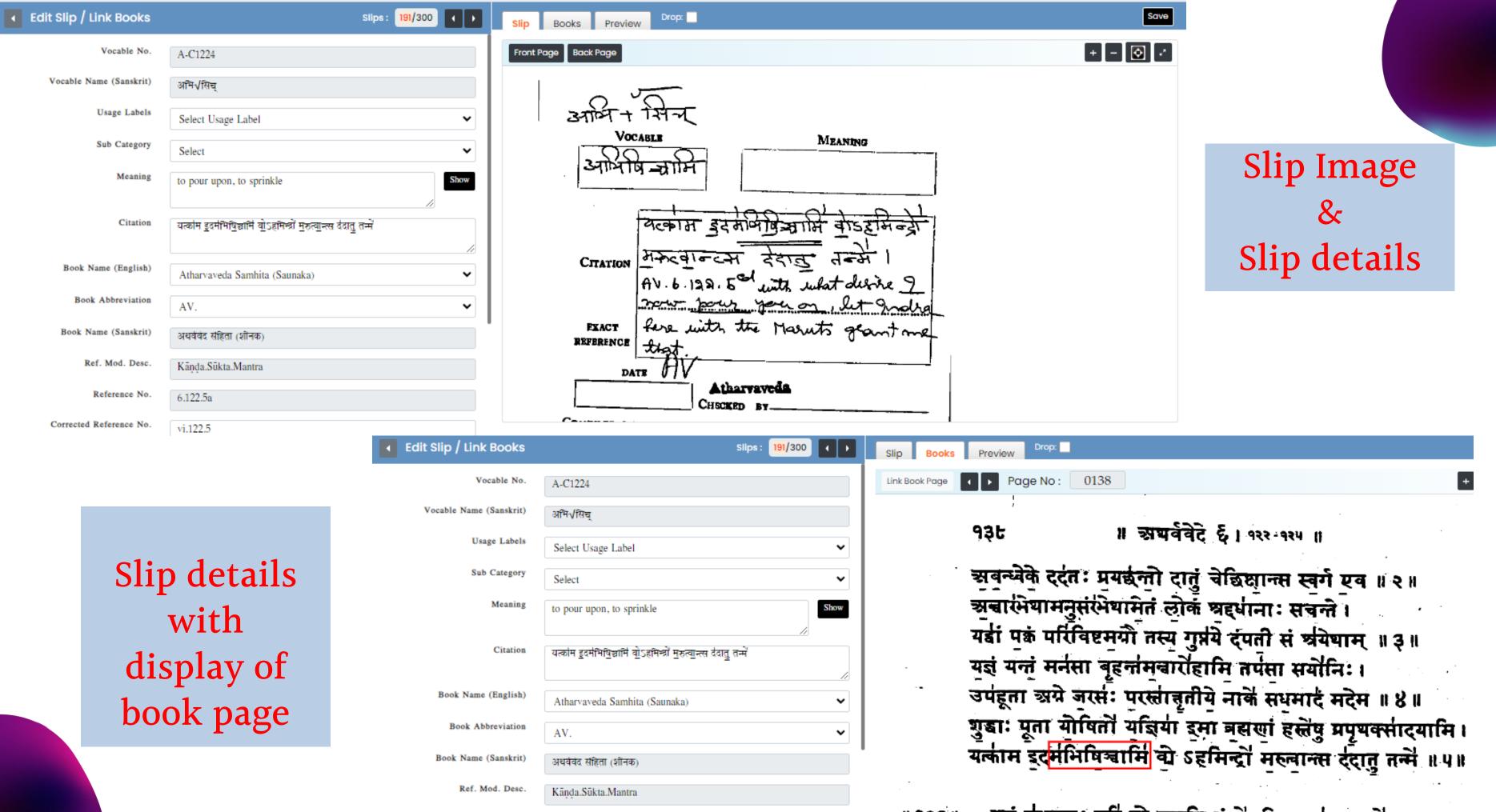
### Distributed Vocable list





### Distributed Reference slips under the Vocable





Reference No.

Corrected Reference No.

6.122.5a

vi.122.5

॥१२३॥ एतं संधस्याः परि वो ददामि यं शेवधिमावहाज्ञातवेदाः।

### Meaning Arrangement

Vocable Information

Slip / Linking

**Meaning Arrangement** 

Preview

Auto Mode Z Expand Z

Vocable Preview Slip Preview

-- III 1: to salute -- 💹 2 : to speak -- 💹 3 : to refer to -- 💹 4 : to repeat -- 💹 5 : to greet -- 💹 6 : to describe -- 💹 7 : to address -- 💹 8 : trumpet - 💹 9 : to allude to -- 💹 10 : abcd -- 🛺 11 : to make some one speak i.e. to bless -- 💹 12 : to refer to -- 💹 13 : to send ones greetings -- 💹 14 : prefer a claim against -- 💹 15 : to impose (as punishment or fine) -- 💹 16 : to decleare -- 💹 17 : to be used, communicated 

अभिवद (abhivad) I.U. [P.ix.5.9] 1 to salute 1A to salute with touching related substance आत्मपादौ तथा भूमिं सन्ध्याकालेऽभिवादयेत् ...अभिवादयेत् स्पृशेदित्यर्थः VīraMi.(Āhnika.) 311.19; अतोऽहम् ... हस्तिराजमभिवादयामि PañcT. 3.43(1) 296.4); तं त्वृष्टा शीर्षतो॒ऽग्रे७भ्युवाम SatBr. III.viii.3.11; अभिवाद्य पादावाचार्यस्य पाणी प्रक्षाल्य... इतरं वाचयति SāṅkāGS. ii.7.4; आचार्यायाभिवादयेत SāṅkāGS. iv.12.1; आचार्याय अभिवादयीत KausiGS. iii.11.1; गुरुमभिवादयते GobbiGS. iii.2.36; गुरुं गोत्रेण अभिवादयते GobbiGS. ii.3.13; समिखार्युदकुम्भपुष्पाब्रहस्तो नाभिवादयेद्यञ्चान्यदय्येवं युक्तम BaudhDS. i.2.32; ऋत्विकश्वशुरपितृव्यमातुलाननवरवयसः प्रत्युत्थायाभिवादयेत VäsiDS. 13.41; अभिवादय राजानं पितरं ते MahāBhā. i.634\*.1; नाभिवादयते ज्येष्टं देवरातं नराधिप MahāBhā. xiii.3.8; पाण्डवाः... मुरजांश व्यनादयन (v.l. अभ्यवादयन ) MahāBhā. vi.54.44; अभिवादयन्ति (v.l.अभिवादयन्ते) भवतीं पाण्डवाः सह कृष्णया आत्मानं च कुशलिनं निवेद्याहरनामयम MahāBhā, v.88.97; अभिवादयन्तिं भवतीं पाण्डवाः सह कृष्णया आत्मानं च कुशलिनं निवेद्याहरनामयम MahāBhā, v.88.97; दुर्योधनोऽनुगम्येनमभ्यवादयदच्युतम् । गृढो दुर्योधनस्तत्र दर्शयामास मातुलम् MahāBhā. v.8.11; भीष्मम् ...हाभ्यामभ्यवादयत् MahāBhā. iv.App.50.2(2); अर्घ्यं पाद्यमथानीय त्वभ्यवादयदच्युतम् MahāBhā. iii.376\*.1; अभिवादये त्वा भगवन्खागतं ते द्विजोत्तम MahāBhā. iii.198.12; युधिष्ठिरस्तमासाद्य... अभ्यवादयत प्रीतः शिरसा नाम कीर्तयन् MahāBhā. iii.156.1; ततोऽभिवादयामास प्रयतः श्वशुरं नलः MahāBhā. iii.76.2; पाण्डवश्रेष्ठः ... अभ्यवादयत प्रीत्या MahāBhā. ii.5.4; पाण्डवाः सर्वे ... कृष्णं दृष्ट्वाभ्यपूजयन् (v.l.अभ्यवादयन् ) MahāBhā. i.188.1; अभिवादयामहे ब्रह्मन् MahāBhā. i.122.19; गुरुं शिष्यो नित्यमभिमन्यमानः (v.l. अभिवादयेत) स्वाध्यायमिच्छेत् MahāBhā. v.44.8; तथा भीष्मम् ... शिरसाभिवदेथास्त्वम MahāBhā. v.31.8; सः ... पुरा यथा माभिवदेत्प्रसन्नः MahāBhā. v.30.19; कामेन ताताभिवदाम्यहं त्वाम कस्यासि राज्ञो विषयादिहागतः । गोत्रं च नामापि च शंस तत्त्वतः MahāBhā. iv.6.9; एतांम् ... देवीं भवन्तः सर्व एव हि... प्रतिगम्याभिवादत MahāBhā. iii.App.16.20; उत्तद्भः प्रविश्व उपाध्वायिनीम अभ्यवादयत MahāBhā. i.3.163; स ... उपाध्वायमभिवाद्य (v.l.अभ्यवादयत) आचक्षते च MahāBhā. i.3.76; तदिभवादये भगवन्तम MahāBhā. i.3.28; सर्वे वाल्मीकिमभिवादयन Rāmā. 2.1200\*.(2); राघवः शोकसंमुढो जननीमभ्यवादयत्त Rāmā. ii.35.2; अभिवाद्य ततो राज्ञो (v.l. ततोऽभिवादयांचक्रे) वसिष्ठप्रमुखानुषीन् । पितरं विद्वलं दृष्टा प्रोवाच रघुनन्दनः Rāmā. i.76.2; अभिवाद्य ततो राज्ञो (v.l. लब्धवाभिवादयमासुः) वसिष्ठप्रमुखानुषीन । पितरं विद्वलं दृष्टा प्रोवाच रघुनन्दनः Rāmā. i.76.2; अभ्यवादयतां देवौ देवकीं रामकेशवौ Hari Vam. 96.9; हक्कोर्बावचने अभिवादिदृशोरात्मनेपद उपसङ्खानं कर्तव्यम । अभिवदति गुरुं देवदत्तः । अभिवादयते गुरुं देवदत्तम । अभिवादयते गुरुं देवदत्तम MahāBh. 1.4.53(338.13); अभिवदित गुरुं देवदत्तः । अभिवादयते गुरुं देवतत्तम् । अभिवादयते गुरुं देवदत्तेन MahāBh. i.338.12(on i.4.53); आददीत यतो ज्ञानं तं पूर्वमभिवादयेत ManuSm. 2.117; उत्थाय अभिवादयेत ManuSm. 2.119; अनिर्दिष्टश्च गुरूणां स्वान्तुरुज्ञाभिवादयेत VisnuSm. 28.30; भगवन् अभिवादये Avimā. 6.11(7); अभिवादयस्वात्मकुलदैवतं देवर्षिम् Avimā. 6.16(1); अभिवादतां सुदर्शना Avimā. 6.19(3); आचार्य अभिवादये DūtVā. 4(9); आचार्य अभिवादये PancRā. 1.23(2); अभिवादयस्व माम PancRā. 1.25(2); अम्ब अनपराखोऽहमभिवादये Prati.

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### Final Preview



अभिवद् abhivad I.U. P.ix.5.9 1A to salute with touching related substance आत्मपादौ तथा भूमिं सन्ध्याकालेऽभिवादयेत् ...अभिवादयेत् स्पृशेदित्यर्थः VīraMi.(Āhnika.) 311.19 1 to salute अतोऽहम् ... हस्तिराजमभिवादयामि PañcT. 3.43(1) 296.4) तं त्वृष्टा शीर्षतो॒ऽग्रे७भ्युवाम ŚatBr. I II.viii.3.11 iv.12.1 आचार्याय अभिवादयीत KauṣīGS. iii.11.1 गुरुमभिवादयते GobhiGS. iii.2.36 ii.3.13 समिखार्युदकुम्भपुष्पाब्रहस्तो नाभिवादयेद्यद्यां युक्तम् BaudhDS. i.2.32 ऋत्विकश्वशुरिपतृव्यमातुलाननवरवयसः प्रत्युत्थायाभिवादयेत् VāsiDS. 13.41 अभिवादय राजानं पितरं ते MahāB hā. i.634\*.1 xiii.3.8 vi.54.44 v.88.97 v.88.97 v.8.11 iv.App.50.2(2) iii.376\*.1 iii.198.12 iii.156.1 iii.76.2 ii.5.4 i.188.1 i.122.19 v.44.8 v.31.8 v.30.19 iv.6.9 iii.App.16.20 i.3.163 i.3.76 i.3.28 सर्वे वाल्मीकिमिवादयन् Rāmā. 2.1200\*.(2) iii.35.2 i.76.2 i.76.2 i.76.2 अ भ्यवादयतां देवौ देवकीं रामकेशवौ HariVam. 96.9 हक्कोर्वावचने अभिवादिदृशोरात्मनेपद उपसङ्खानं कर्तव्यम् । अभिवादयते गुरुं देवदत्तम् अनिर्दिष्टश्च गुरूणां स्वान्गुरुवाभिवादयेत् VisnuSm. 28.30 भगवन् अभिवादये Avimā. 6.11(7) 6.16(1) 6.19(3) आचार्य अभिवादये DūtVā. 4(9) आचार्य अभिवादये PañcRā. 1.23(2) 1.25(2) अम्ब अनपराखोऽहमभिवादये Prati. 3.15(4) तात सङ्कर्षणोऽहमभिवादये BālC. 5.13(1) भोस्तात अ भिवादये MadhyaVyā. 1.20(2) सर्वानभिवादये Śāk. 5.14(9) भगवित अभिवादये Mālavikā. 1.14(2) 5.7(4) भगवित अभिवादये Vikramo. 5.9(3) सः ... तमुपेत्य महाभागं विनयेनाभ्यवादयत् ViṣṇuP. v.38.35 कृत्वा प्रदक्षिणं सर्वे चरणावभ्यवादयन् MārkP. 3.5 गुरुम् ... पूर्वं तमभिवादयेत् Brahm āṇḍP. iii.43.39 ii.25.77 2.21.26 अभिवादयते गुरुं देवदत्तं देवदत्तं वा JaineVyā. i.2.124 माथुर अभिवादये Mṛcch. 2.12 (1? 193) 9.16(15य़255) अभिवादये KundaMā. 3.15(2) अभिवादयते गुरुं देवदत्तं देवदत्ते वा CāndraVṛ. on ii.1.46 on ii.1.46 अर्थ अ भिवादये MudrāRā. 2.9(3) 5.13(2) गुरो अभिवादये VeṇīSam. 3.326 वासु कि नाभिवादयसि Ubhayābhi. 3.23 स्वागतं भावाय । अभिवादयामि PadmPrā. 24.17 अभिवादिदृशोरात्मनेपद उपसंख्यानम् ... अभिवदित गुरुं देवदत्तः । अभिवादयते गुरुं देवदत्तः देवत्तेनेति वा KāśiVṛ. on i.4.53 on i.4.53 नायकः । भगवन् जीमृतवाहनोऽभिवादयते Nāgā. 1.17(6) वसुभृते अभिवादये Ratnā. 4.13(10) शिष्यः... यतीनाभिवादयते AvantiKa. 156.10 जननीमभिवादय त्विमिति भूमिपतिः सुतमन्वशात् VarāṅgaC. 20.77 ब्रह्मचारी... नत्वा स्वयमथात्मानं(अ?)(मुक) गोत्रोऽहमभिवादयेत् LaghvāśvaSm. 1.50 ब्रह्म ण्यदेवाय... अभिवादयेत् VṛGautaSm. 528.12(5) 600.10(14) मनसा यदसम्पन्नं प्रतिपाद्याभिवादयेत् MṛgendraT. ii.8.207 भगवन्नभिवादये MahāviC. 1.18(2) 1.22(2) 4.35(4) 5.5(1) 5.60(11) 7.31(2) भगवन्नभिवादये UttaRāC. 1.8(14) 4.9(6) 4.21(2) 5.26(1) कुशिकनन्दन ऐ क्ष्वाकः पङ्किरथोऽभिवादयते AnarghaRā. 1.24 1.51(5) 7.136 7.139(6) स राजा... आगतमात्रमेव अभ्युक्तवान् BṛĀraUBh. 758.14(on vi.2.1) गुरुं शिष्यो नित्यमभिवादयीत देवमिवाचार्यमुपासीत SanatBh. 278.10(on 3.8) कृतपूर्वीह्नकार्योऽयं स्वगुरावभिवादयेत् VedavyāSm. 2.25 अ भिवादयेत् वृद्धान् BālaKrī. i.44.1(1.26) येन स्वनामोद्धार्याभिवादनं कृतं तस्य नामान्ते द्वृतिः कर्तव्या । यस्त्वहं भो इत्यभिवदेत् न तस्य नामोद्धारणं नापि द्वृतिरिति ManuBh. i.140.14(on 2.126) अभिवाद्यानभिवादयेयुः सर्वे PārāSū. 33.21 33.22 34.12 गुरुं स्वमभिवादयेत् LakṣmiT. 41.29 सरसस्तीर मासाद्य ते शक्रं चाभ्यवादयन् SkandP. i(1).16.11 चित्राङ्गदापि तान्द्रष्ट्वा... अभ्यवादयत् VāmaP. 65.125 तथा पातकिनं चैव कदाचिन्नाभिवादयेत् BṛNāraP. 23.37 आराध्यमुत्थायाभिवादयेत् NītiVā. 25.75 अभिवादपरो विप्रः ज्यायांसमभिवादयेत् BhaviP. 15A.11 (i.4.51) 19A.9 (i.4.181) स्त्रीधर्मिणीं नाभिवा(व)देतु PadmP. iv.9.58 तं पूर्वमभिवादयेतु SaurP. 17.13 केचित्तं प्रणिपातेन साष्टाङ्गेनाभ्यवादयतु GaneP. i.89.28 वृद्धान्गुरुप्रभृतीनभिवादयेतु Mitā. 9.12(on 1.26) आर्य दभ्मी लोभात्मजोऽहं भो अभिवादये PraboCan. 2.11(24.13) तमप्यृषिं मन्यमानोऽवदत्ताताभिवादये PariPar. 1.162 1.182 13.15 दृश्विभवदोरात्मने SiddhaHe. 2.2.9 मा मायिनं जात्विभवादयस्व न्याय्यैर्नयज्ञा ह्यभिवादयस्व न्याय्यैर्भवादयस्व न्याय्यैर्नयज्ञा ह्यभिवादयस्व न्याय्यैर्नयज्ञा ह्यभिवादयस्य न्याय्यैर्नयज्ञा ह्यभिवादयस्य न्याय्यैर्नयज्ञा ह्यभिवादयस्य वृद्धाञ्जानकीं लक्ष्मणेन MugdhaBo. 5.5(46.18) भो भो फुङ्कटमिश्राः । युष्मानिभवादये LataMe. 2.15(1) अभ्यवादयत प्रीतो भरतः AdhyāRā. vi.14.85 ii.9.80 शुक्रः... अभिवादयामास पितरम् YogVā. iv.16.15 भगवन् अभिवादये PārvPa. 1.15(6) अभिः पूजाभृशार्थेच्छाव्याधिसाम्याभिमुख्यके... अभिव दित गुरुम् Prasā. i.37.18 कन्दर्पबृन्दसौन्दर्यं गोविन्दमभिवादये StavMā. 43.9 (लक्ष्मणः) आर्य अभिवादये । (रामः) वत्स इत आस्यताम् AdbhuDa. 1.12(25) अभिवादयेत् अभिभाषेत VīraMi.(Saṃskāra.) 457.9 457.19 अभिवादयते दर्शयते देवं भक्तं भक्तेन SiddhāKau. 137A.5 (i.4.53) 23B1 (...) 2.92) भारति जागोशीम मागेशीनाजो 15...D. 2.95(2) भारताजिकाताचे तिभो भारत D5... (.40 माण⇒मा शाहित्यो जागिताजो A....U. ..) 17.5 भशिताजो के बोके मामका एवं च्या भशिताजाणी च्यापी जानाज D1... (.4.17) स्थापीनाजो M.J.V.

03

# Crowd Sourcing

For the completion of this huge Project, the future lies in inviting institutes and interested scholars to contribute as per their availability and capacity

KoshaSHRI is being developed as a web-based tool

KoshaSHRI provides unique tool to create accounts of scholars and assign them work, to collect the work, and to edit the same



Utility of use of technological tool in Sanskrit Dictionary
Project

01

### Swift progress

The process becomes faster with reduction of time required for physical search of material. This also results in increase of output

02

### Accuracy

- Pre-filled data through selection from drop-down box
- Final preview format is generated automatically



03

### Collaboration

Web based tool facilitates collaboration which is the need of present time

04

### Global reach

Availability of the Dictionary online increases its Global reach

05

### Research tool

Various search combinations as per detailed tagging makes it an inevitable tool for qualitative and quantitative research









### Significance

- This tool is the only of its kind undertaken for preparing "An Encyclopaedic Dictionary of Sanskrit on Historical Principles"
- Use of technology for optimization of the process
- Customization of technology for the use of the Project
- Model for development of such technology for any other Language related Project

### "Thank you"



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Post- Graduate and Research Institute, Pune

(Deemed University under section 3 of UGC Act 1956)