

# Sophisticated Lexical Databases – Simplified Usage: Mobile applications and Browser Plugins for Wordnets



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# Roadmap



- ❖ Introduction
- ❖ Motivation
- ❖ Applications for Wordnet
- ❖ Mobile Wordnet Applications
- ❖ Browser Plugins
- ❖ Conclusions and Future Work



# Introduction



- ❖ Massive Language Diversity in India
  - ❖ Over 22 official languages
  - ❖ Hundreds of other languages / dialects which have not been given the official status.
- ❖ Need to bridge the language barrier
  - ❖ IndoWordnet project, consisting of a consortium of IIT Bombay, and 12 other institutes.
  - ❖ Wordnets for 18 languages under one roof, and a common interface to browse them.
  - ❖ Educational applications using Wordnets are in great demand – Digital India.



# Motivation



- ❖ Sizeable portion of the Indian population connected to the internet through mobile phones (117 million people)\* – but the larger portion is still left behind.
- ❖ Most of the internet users are either already using Mobile Smartphones, or are shifting to them very fast.
  - ❖ More, and more users everyday!
  - ❖ A strong case for the need for mobile applications and,
  - ❖ Easy accessibility of Wordnets, in general.

\*“Internet trends 2014 report” by Mary Meeker, Kleiner Perkins Caufield & Byers (KPCB)



# Use Cases



- ❖ Educational Classroom Scenario
  - ❖ Aakash Tablets
  - ❖ Multiple Language Awareness
- ❖ Tourism
  - ❖ Basic communication can be made possible.
- ❖ Second Language Learners
  - ❖ Browser plugins to obtain meanings of unknown words.
- ❖ Lexicographers / Linguists
  - ❖ Quick dissemination of lexical knowledge for analysis and annotation.



# Mobile Wordnet Apps



- ❖ Plenty of convenient features using an online interface for searching words.
  - ❖ Supports Morphological analysis during word search.
  - ❖ Concept Translations to multiple languages available.
  - ❖ On-Screen Devanagari Keyboard
  - ❖ Interface design in consultation with Industrial Design Center (IDC), IIT Bombay.
  - ❖ Simple, Layered, and Card-Based results as output.
  - ❖ Available currently on Google Play Store, and Windows Phone Store.
  - ❖ iOS – the apps have been developed, just the need to deploy.



# Browser Extensions



- ❖ Convenience for user of Mozilla Firefox / Google Chrome.
- ❖ Simple right-click -> Search <word> mechanism for Hindi, Marathi, Sanskrit, and English.
- ❖ The results obtained through a simple get query, in a new tab.
- ❖ Waiting for Microsoft to bring these extensions to Microsoft Edge, and the coverage of web browsers improve.



# Demonstration



- ❖ Online Demo of Browser Extensions.



# Conclusion



- ❖ Mobile applications created and deployed for two of the major mobile phone operating systems.
  - ❖ Three apps for each.
- ❖ Browser Plugins for two of the majorly used browsers
  - ❖ Mozilla Firefox / Google Chrome
  - ❖ 4 Addons for Firefox
    - ❖ Hindi, Marathi, Sanskrit, and English Wordnet Add ons.
  - ❖ 3 Extensions for Google Chrome
    - ❖ Hindi, Marathi, and Sanskrit Wordnet Extensions.



# On the way...



- ❖ Bundle all Mobile Wordnet apps into a suite later.
- ❖ Deploy apps which can be used offline (requires permissions)
- ❖ Upgrade to browser plugins (expect these very soon)
  - ❖ Intuitive display of results (Bubble popup)
  - ❖ Enable automatic translations
  - ❖ Follow standard apps like PeraPera!
  - ❖ OpenSource all of this! ☺



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# Thank you!



- ❖ Thank you for all your attention!
- ❖ Questions ?
- ❖ Suggestions ?