NATURAL LANGUAGE PROCESSING LAB

Course Code: KG23ACM403	L	T	P	C
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B.Tech. IV Year I Sem.

Prerequisites:

1. Data structures, finite automata and probability theory.

Course Objectives: The objectives of this course for the student are to:

1. Explain the NLP fundamentals
2. Gain Knowledge on basic Language processing features.
3. Gain Knowledge on with NLP tools and libraries
4. Gain Knowledge on Preprocessing and cleaning text data:
5. Gain Knowledge on Introduction to information extraction

Course Outcomes: After completion of this course, the students will be able to:

CO1: Show sensitivity to linguistic phenomena and an ability to model them with formal grammars. **(K1)**

CO2: Design proper experimental methodology for training and evaluating empiricalNLP Systems **(K6)**

CO3: Design, and implement NLP Techniques. **(K6)**

CO4: Apply NLP algorithms and models. **(K3)**

CO5: Analyze and interpret NLP results **(K4)**

List of Experiments

1). Write a Python Program to perform following tasks on text
a) Tokenization b) Stop word Removal
2. Install NLTK tool kit and perform stemming
Write a Python program to implement Porter stemmer algorithm for stemming
3. Write Python Program for a) Word Analysis b) Word Generation
4 Write a Python program to
Perform morphological Analysis using NLTK library
5 .Create a Sample list for at least 5 words with ambiguous sense and Write a Python program to implement WSD
6). Create Sample list of at least 10 words POS tagging and find the POS for any given word

7) a) Generate n-grams using NLTK N-Grams library
b) Implement N-Grams Smoothing
8) Using NLTK package to convert audio file to text and text file to audio files.
9) Write the python code to develop Spam Filter using NLP

10) Write the python code to detect Fake News using NLP

TEXT BOOKS:

1. Multilingual natural Language Processing Applications: From Theory to Practice – Daniel M. Bikel and Imed Zitouni, Pearson Publication.

2. Oreilly Practical Natural Language Processing, A Comprehensive Guide to Building Real World NLP Systems.

3. Daniel Jurafsky, James H. martin—Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech, Pearson Publication, 2014.

REFERENCE BOOKS:

1. Steven Bird, Ewan Klein and Edward Loper, —Natural Language Processing with Python, First Edition, O'Reilly 2edia, 2009.

CO-PO Mapping

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	2	2	H	2	H							2	2	2	H
CO2	2	2	H	2	H							2	2	2	H
CO3	2	H	H	2	2							2	2	2	H
CO4	2	2	H	H	2							2	2	2	H
CO5	2	2	H	2	2							2	2	2	H

HIGH=3, **MEDIUM**=2, **LOW**=1