

**Course Title:** Cognitive Computing & Natural Language Processing **Course Code:** CSP41C

**Academic Year:** 2020-2021 **Class:** B. Tech-CSE

**Lab Assignment List**

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| **Ass. No** | **Title of Assignment** | **No of Hours** |
| -- | Study and exploration of Natural Language Tool Kit (NLTK) in Python | 2 |
| 1 | Program to read a paragraph from a text file. Print the paragraph after removing the stop words. Identify part of speech of each word in the paragraph. [Stemming, POS tagging, bag of words and their frequency, finding all meaningful words from given word, listing n-grams] Use NLTK. | 2 |
| -- | Study and exploration of IBM Watson | 2 |
| 2 | **Watson / NLTK Speech to Text and Text to Speech APIs** - Using IBM Watson Speech to Text service, convert an audio recording to text format. Recording can be done on a mobile phone or using computer’s microphone. Try with different audio formats like .mp3, .wav. Use smart formatting to covert numbers and currencies in proper text format. Use cases:  -User dictates a paragraph (speech), and it is converted to text  -User utters a word, and the program spells it out (Speech->Text->Speech)  -Simple Calculator with voice commands (addition, subtraction, square) | 2 |
| 3 | **Watson Natural Language Understanding API -** Write a program that reads several news articles or blogs online or from a text file and tells the user what category the article is about. Alternatively, the program classifies and sorts the article and moves it to the proper category folder. | 2 |
| 4 | **Watson Personality Insights -** Suggest the user suitable books or movies, based on his personality traits. Download a speech or blog of the user and use IBM Watson personality insights service to predict which books or movies he would like. (Pre-requisite: Group assignment to study and discuss the personality models – Big Five, Needs and Values, explained on IBM Watson website) | 2 |
| 5 | Sentiment Analysis using NLTK / Watson **–**Tone analyzer | 2 |
| 6 | Mini project – Design and development. | 6 |

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