**Seminar Topic Summary Report**

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**Institution Name: Basaveshwar Engineering College, Bagalkot**

**Department of Computer Applications (MCA )**

**Course: MCA**

**Semester: II**

**Seminar Topic : Natural language processing (NLP)**

**Submitted by: Karanasing Nayak**

**USN: 2BA24MC012**

**Date of Submission: 26-06-2025**

**Guide/Faculty Name: Prof. M. H. Shirur**

**Guide Signature:**

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**1. Introduction:**

Natural Language Processing (NLP) is a subfield of Artificial Intelligence (AI) that enables machines to interpret, understand, and generate human language. By combining linguistics, computer science, and machine learning, NLP aims to create systems that can interact naturally with users through spoken or written language.

**2. Seminar Topic Details:**

Topic Title: Natural Language Processing  
Presented By: [Karanasing nayak]  
Seminar Type: Abili enhancement Seminar / MCA  
Presentation Format: PowerPoint

**3. Topic Summary:**

This seminar provides an overview of NLP, discussing its significance, components, and real-world applications. Topics include tokenization, part-of-speech tagging, named entity recognition, machine translation, sentiment analysis, and deep learning methods. It also covers the challenges in NLP, such as linguistic ambiguity and data scarcity, and highlights ethical considerations and emerging research trends.

**4. Relevance to MCA Curriculum:**

NLP is highly relevant to the MCA program as it bridges core subjects like Artificial Intelligence, Machine Learning, Data Science, and Human-Computer Interaction. It aligns with current technological trends and provides practical applications in fields such as automation, finance, healthcare, and customer service.

**5. Learning Objectives:**

By attending this seminar, students will:  
- Understand the fundamentals and applications of NLP.  
- Learn various NLP techniques such as preprocessing, text analysis, and model training.  
- Explore the roles of deep learning and transformers in modern NLP.  
- Identify challenges and ethical issues in NLP development and deployment.

**6. Expected Outcome:**

After the seminar, students should be able to:  
- Analyze and preprocess text data for NLP tasks.  
- Recognize the impact of NLP in different industries.  
- Utilize NLP libraries and tools effectively.  
- Reflect critically on the ethical use and limitations of NLP technologies.

**7. References:**

- Natural Language Processing  
- Jurafsky, D., & Martin, J. H. (Speech and Language Processing textbook)  
- Research articles from ACL, IEEE, and arXiv  
- Libraries: NLTK, spaCy, Hugging Face Transformers  
- Blogs and documentation from OpenAI, Google AI, and NLP community forums

**Coordinator Signature                                                                                                     HOD Signature**