



Department of
Computer Science & Engineering
University of Liberal Arts Bangladesh

Complex Engineering Project

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| Course Title: Statistics and Probability | Section: 01 |
| Course Code: STA 2101 | Semester: 06 |
| Course Teacher: Khan Raqib Mahmud | |
| Project No.: 1 | |

Problem:

**Sentiment Analysis on Rafsan The Choto Bhai's
YouTube Channel's comments**

Addressing Complex Engineering Problems

| Attributes | | Addressing the complex engineering problems in the project |
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| WP1 | Depth of knowledge required (WK3-WA5, WK8) | Good understanding of NLP techniques like tokenization, stemming, lemmatization, part-of-speech tagging, and sentiment analysis algorithms. We also needed to understand machine learning concepts like training and testing datasets, feature extraction, model selection, hyperparameter tuning, and model evaluation metrics. We needed to extract and clean data from the comments, visualize results, and have a business and marketing knowledge to translate analysis into actionable insights for clients. |
| WP2 | Range of conflicting requirements | Balancing accuracy with performance and dealing with unstructured data. I also need to ensure that my analysis provides actionable insights for marketers to inform their marketing strategy. |
| WP3 | Depth of analysis required | Strong understanding of NLP techniques and tools, such as tokenization, stemming, lemmatization, part-of-speech tagging, and sentiment analysis algorithms. I will also need to have a good grasp of machine learning concepts like Naive |



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| | | Bayes and Neural Networks, as well as data wrangling and visualization techniques. |
| WP4 | Familiarity of issues | Various sensors, microcontrollers, contagious diseases, standard values of Covid-19 patient's health data that's needs to be monitored etc. |
| WP5 | Extent of applicable codes | There is no existing code of standard, New code is applicable. |
| WP6 | Extent of stakeholder involvement | There are several stakeholders needs to be involved including owner of the medical centers, hospitals, department of health, Investors and manufacturers. |
| WP7 | Interdependences | We needed to consider a range of conflicting requirements and dependencies. These include a solid understanding of NLP techniques, machine learning concepts, data wrangling, and visualization, as well as business and marketing knowledge. To execute this project, We needed to manage interdependencies between the different aspects of the project and ensure they are working cohesively towards my end goal. |