DAB303 – Marketing Analytics– Project 5: Natural Language Processing (NLP) – Sentiment Analysis

Introduction

The purpose of the lab is to understand the concepts of Natural Language Processing (NLP) and its principles and gain sentiment analysis insights from a social media dataset, by performing various exploratory data analysis, data visualization, and data modelling tasks.

Data:

The provided dataset, made available during the lab, contains all the information needed for the project.

Tasks:

1. **Download and load data file** – as described below:
   - Download the dataset (in .csv file format) from Blackboard.
   - Download the Jupyter Notebook template.
2. **Use Python Tools do reverse-engineer and adapt the Python template, adapting it according to the desired model**:
   - Import the dataset as a Pandas Dataframe, followed by data pre-processing and data cleaning.
   - Perform exploratory data analysis (EDA):
     - Data aggregation
     - Data Visualization
     - Advanced social media analysis, etc.
   - Advanced Machine Learning – NLP:
     - Data pre-processing,
     - … etc., as described in the Jupyter Notebook.
   - Text Analysis:
     - Data pre-processing,
     - … etc., as described in the Jupyter Notebook.
   - Conclusion – Suggestions
     You may use additional techniques which may not be listed above, if you can submit a rationale for why the technique is useful and an indication of what you hope to achieve.
3. **Report –** In a separate word document:
   - Record your observations with respect to the most important outputs of the Python code.

Submission – Deliverables

Submission will be done via Blackboard, and it will be group submission, including:

- One file per group (in .zip format):
  - Jupyter Notebook (extended code commenting and analytical block code description):
    - Lab file (.ipynb)
  - Report (.pdf): Include the major steps and finding of your analysis, and
  - Presentation (.pptx): 4 – 5 slides (excluding covers and introduction), for presenting your findings to the management.