

Project Title	Sentiment Analysis on Healthcare Reviews
Skills take away From This Project	Python, Analytics, machine learning
Domain	Healthcare

Problem Statement:

- The goal of this project is to develop a model that can classify sentiments in healthcare reviews. This involves analyzing text data from healthcare reviews and determining whether the sentiment expressed in each review is positive, negative, or neutral.

Business Use Cases:

- Insights from sentiment analysis can include understanding customer satisfaction levels, identifying common issues or areas for improvement in healthcare services or products, and tracking changes in sentiment over time. Visualization techniques like bar charts, or sentiment over time plots can help convey these insights effectively.

Approach:

1. **Data Preprocessing:** This task involves cleaning and preparing the text data from healthcare reviews. It includes tasks like text tokenization, removing stopwords, and handling any missing data.
2. **Sentiment Analysis Model:** Develop a machine learning or natural language processing (NLP) model that can classify sentiments in healthcare reviews. This model should be able to categorize reviews as positive, negative, or neutral based on the text content.
3. **Model Evaluation:** Assess the performance of the sentiment analysis model using appropriate evaluation metrics. This step is crucial to ensure the model's accuracy and effectiveness.
4. **Insights & Visualization:** After building and evaluating the model, generate insights from the sentiment analysis results. Visualize the data and findings to communicate the results effectively.

Results:

- Interpretation of results should involve understanding the distribution of sentiments, identifying key themes or topics in reviews, and connecting sentiment trends to specific aspects of healthcare services or products. Actionable recommendations can be made based on the insights gained from the analysis to improve healthcare services or products.

Project Evaluation metrics:

Success Criteria

Accuracy, Precision, Recall, F1 Score, ROC-AUC

All should be in high range.

Technical Tags:

Machine Learning

Data Preprocessing

Feature Engineering

Model Training

Model Evaluation

Hyperparameter Tuning

NLP

Data Set:

Dataset is available in CSV format.

Dataset:

https://drive.google.com/file/d/1g2G_xqbSPiYsvXufDQ0tTjzwqyaoXcQT/view?usp=sharing

Data Set Explanation:

Content and Context

- The data for this project consists of healthcare reviews.
- Each review is a piece of text that expresses an opinion or sentiment about a healthcare product, service, or experience.
- The data include text, and if available, labels indicating the sentiment (positive, negative, neutral)..

Project Deliverables:

Submission Requirements

Source Code: The complete code used for data preprocessing, model training, and evaluation.

Documentation: A report detailing the methodology, analysis, results, and insights.

Presentation: A slide deck summarizing the project and key findings.

Model File: The trained model ready for deployment.

README: Instructions on how to run the code and reproduce the results.

Project Guidelines:

Best Practices

Coding Standards: Standard code standard for Python code.

Version Control: Use Git for version control and regularly commit changes.

Documentation: Comment your code and provide clear explanations for your logic.

Collaboration: Use collaborative tools like GitHub or GitLab for team projects.

Timeline:

Analyse data EDA Plotting Building Model ML Model Selection	2 weeks
NLP	3 Days
Total	2 weeks 3 Days

PROJECT DOUBT CLARIFICATION SESSION (PROJECT AND CLASS DOUBTS)

About Session: The Project Doubt Clarification Session is a helpful resource for resolving questions and concerns about projects and class topics. It provides support in understanding project requirements, addressing code issues, and clarifying class concepts. The session aims to enhance comprehension and provide guidance to overcome challenges effectively.

Note: Book the slot at least before 12:00 Pm on the same day

Timing: Tuesday, Thursday, Saturday (5:00PM to 7:00PM)

Booking link : <https://forms.gle/XC553oSbMJ2Gcfug9>

LIVE EVALUATION SESSION (CAPSTONE AND FINAL PROJECT)

About Session: The Live Evaluation Session for Capstone and Final Projects allows participants to showcase their projects and receive real-time feedback for improvement. It assesses project quality and provides an opportunity for discussion and evaluation.

Note: This form will Open on Saturday and Sunday Only on Every Week

Timing: Monday-Saturday (11:30PM to 12:30PM)

Booking link : <https://forms.gle/1m2Gsro41fLtZurRA>