

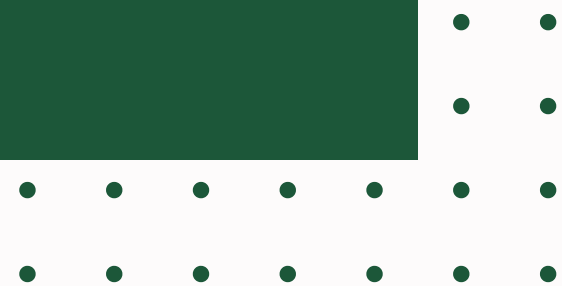


Website Evaluation Using Opinion Mining



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OUR TEAM

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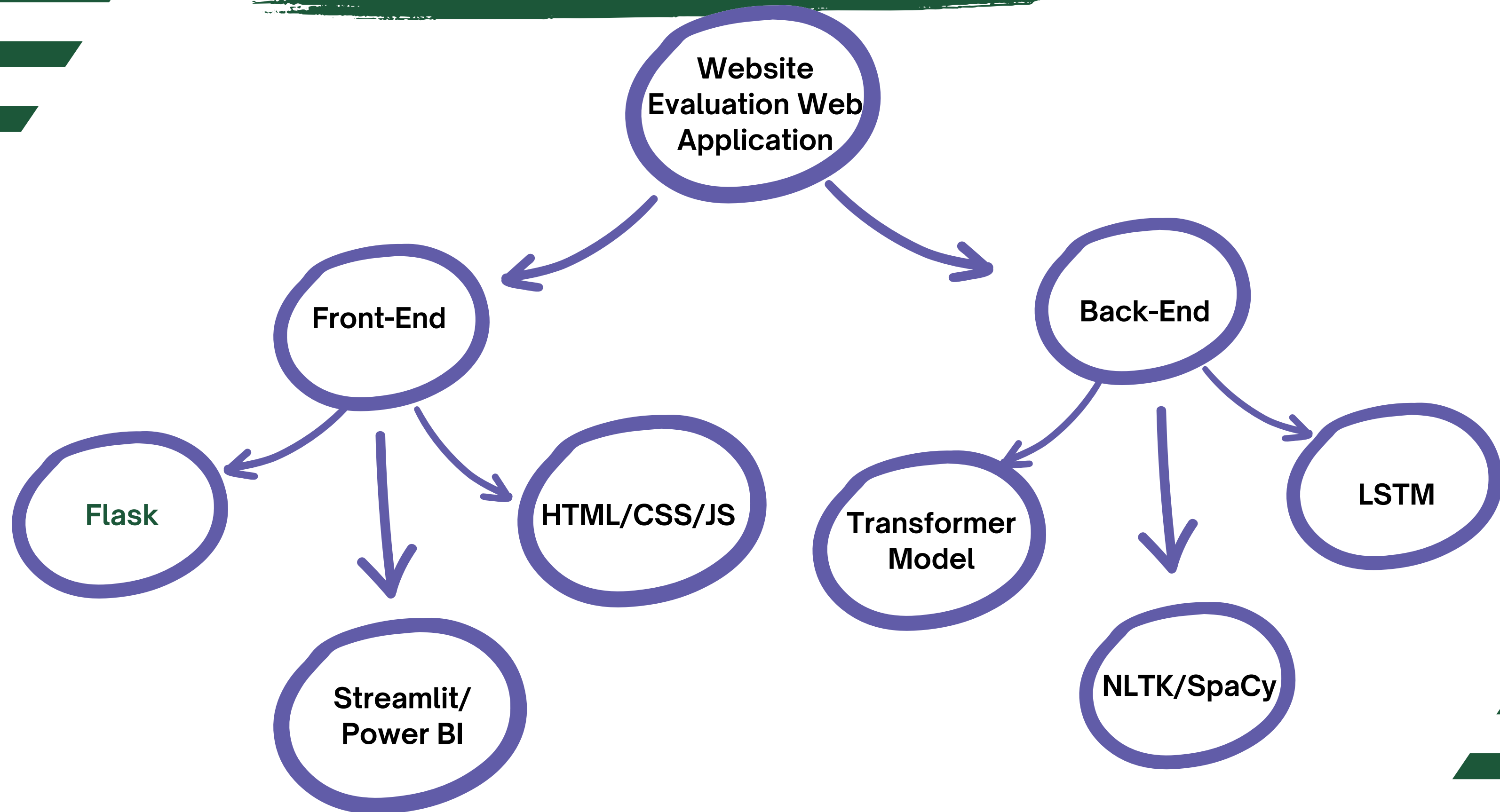
PROJECT SCOPE

We're developing an advanced opinion mining system for website evaluation. It includes data aggregation, preprocessing, and sentiment analysis algorithms. We're also incorporating aspect-based sentiment analysis for a dynamic rating system. The project will use visualization tools like Power BI or Streamlit and a user-friendly Flask web app for frontend interaction.

What's Included?

- **Key Metrics:** At a glance, you'll see the average rating, how many responses you've got, and the total snippets of feedback.
- **Topic Breakdown:** Ever wondered what customers are really talking about? Our bar graph will show you the main topics popping up in reviews.
- **Feeling the Mood:** We'll use a donut chart to give you a quick snapshot of the overall sentiment - positive, neutral, or negative.
- **Sentiment Details:** Want more details? Our stacked bar graph will break down sentiments by type.
- **Trends Over Time:** Track how sentiments are changing over time with our line graphs. You'll see both the good and the bad, and how they're trending.
- **Word Cloud:** And for a bit of fun, we'll include a word cloud. This will highlight the words that pop up most often in reviews.

TECHNOLOGIES USED





USE CASE DESCRIPTION

1.User Upload and Data Ingestion:

- Users can upload an Excel file with reviews, ratings, and timestamps, and the backend system reads and processes the data.

2.Sentiment Analysis:

- Conduct sentiment analysis on individual reviews, determining whether the sentiment is positive, negative, or neutral, and assigning sentiment scores to each review.

3.Overall website rating:

- Aggregate sentiment scores to derive an overall website score, reflecting the collective sentiment expressed in the reviews.

4.Feature/Keyword Extraction:

- Strategies are implemented for the extraction of pertinent features from review data, and a word cloud generation algorithm is utilized to visually depict the most frequently occurring keywords and phrases.



USE CASE DESCRIPTION

5.Trends Over Time:

- Visualize the evolution of sentiment scores over time, examining patterns or alterations in user sentiment on a monthly or weekly basis.

6.Interactive Dashboard:

- Showcases the results of the analysis through an interactive dashboard, presenting information using charts, graphs, and visualizations in a user-friendly manner.

7.Aspect-Based Sentiment Analysis (ABSA):

- Perform ABSA to identify sentiments linked to specific facets, such as website features or customer service. User can identify with positive and negative sentiments, facilitating informed decision-making for necessary adjustments

8.Emotion Recognition:

- Conduct Emotion Recognition to detect emotions expressed in text, such as joy, anger, and sadness. The users can enhance their customers experience by leveraging emotional feedback insights.

PROJECT STAGES



Final Product

We aim to seamlessly integrate the Power BI or Streamlit dashboard with our Flask web application, conduct thorough integration testing, and deploy the entire solution to our chosen cloud infrastructure.



MMP(75%)

We plan to integrate Aspect-Based Sentiment Analysis and Emotion Recognition into the backend, while simultaneously developing a Flask web application for the frontend interface.



MVP(20%)

We will leverage data preprocessing, employ sentiment scoring, showcase keyword extraction in a word cloud, seamlessly aggregate results, and present the overall website rating on a dynamic dashboard.



Project Warmup

We established the project's scope, description and gained an understanding of the project through a comprehensive literature review. We have finalized the implementation strategy for the project, specifying the chosen technologies and features for execution.

FRONT-END FUNCTIONALITY

1. User Authentication:

- Enable a secure and seamless experience with token-based authentication for user sign-up and login.

2. Data Ingestion:

- Empower users to contribute insights effortlessly by providing an intuitive file upload interface for data ingestion.

3. Interactive Dashboard:

- Present a dynamic dashboard offering:
 - Overall website rating derived from sentiment analysis.
 - Visual charts illustrating sentiment trends.
 - A table identifying aspects and features discussed in each comment.
 - Trend analysis for a deeper understanding.
 - Word cloud highlighting keyword extraction.
 - Visualization of emotions expressed in each comment.

BACK-END FUNCTIONALITY

1. Authentication and User Security:

- Implement token-based authentication (JWT) JWT authentication ensures a secure web app, generating tokens for user validation during login and sign-up.

2. Data Processing for Sentiment Analysis:

- Leveraging the capabilities of NLTK and spaCy, the backend efficiently processes user comments, extracting sentiments such as positivity, negativity, or neutrality. This detailed sentiment analysis lays the foundation for deriving an overall website rating.

3. Advanced NLP Techniques for Sentiment Analysis:

- The project incorporates advanced Natural Language Processing (NLP) techniques like nuanced Aspect-Based Sentiment Analysis for identifying the key features, emotion recognition, identifying specific emotions like joy, anger, or sadness, by employing NLTK, SpaCy, Long Short-Term Memory (LSTM) and transformer model like BERT. This function aims to provide detailed insights to users for targeted improvements through this advanced and comprehensive NLP approach.

4. Interactive Dashboard with Streamlit or Power BI:

- The user interface is a critical element, and the backend leverages Flask to create APIs that facilitate smooth communication with the frontend. The integration of a viz. tool like Streamlit/Power BI, along with advanced NLP techniques, enhances the user experience by presenting insights in an interactive dashboard. This dynamic tool empowers clients for informed decision-making.



THANK YOU!

