## WE OFFER

- Innovative: To emphasize cutting-edge technology.
- Personalized: To highlight tailored recommendations.
- Seamless: For an effortless user experience.
- Efficient: Reflecting improved processes.

# HOTEL RECOMMENDATION SYSTEM USING NLP AND DEEP LEARNING

An AI-Powered Solution for Enhanced Travel Planning

# Hotel Recommendation System using NLP and Deep Learning


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# Discuss Data Preprocessing and Cleaning Techniques

1

## Data Cleaning

**Removing irrelevant information, such as duplicate entries or incomplete reviews.**

2

## Data Transformation

**Converting data into a format suitable for NLP and machine learning models.**

3

## Feature Engineering

**Creating new features from existing data, such as sentiment scores or keywords.**

# A Comprehensive AI-Powered Solution for Enhanced Travel Planning

## Personalized Recommendations

**Our system analyzes user preferences and review data to offer tailored hotel suggestions.**

## Enhanced User Experience

**Streamline the hotel search process with intuitive and efficient recommendations.**

# Why a ChatBot for Hotel Recommendations?

### Increased Efficiency

Chatbots handle a high volume of requests, freeing staff for more complex tasks.

### Personalized Recommendations

Chatbots offer personalized suggestions based on guest preferences.

# Objective

**To recommend hotels based on user queries using advanced NLP and machine learning techniques.**

# Key Features

## Review Analysis

We analyze hotel reviews to understand user sentiments and identify key features.

## Sentiment Classification

Our system classifies reviews as positive, negative, or neutral using sentiment analysis.

## Personalized Recommendations

We recommend hotels based on user preferences and the insights gleaned from review data.

# Analyze Hotel Reviews

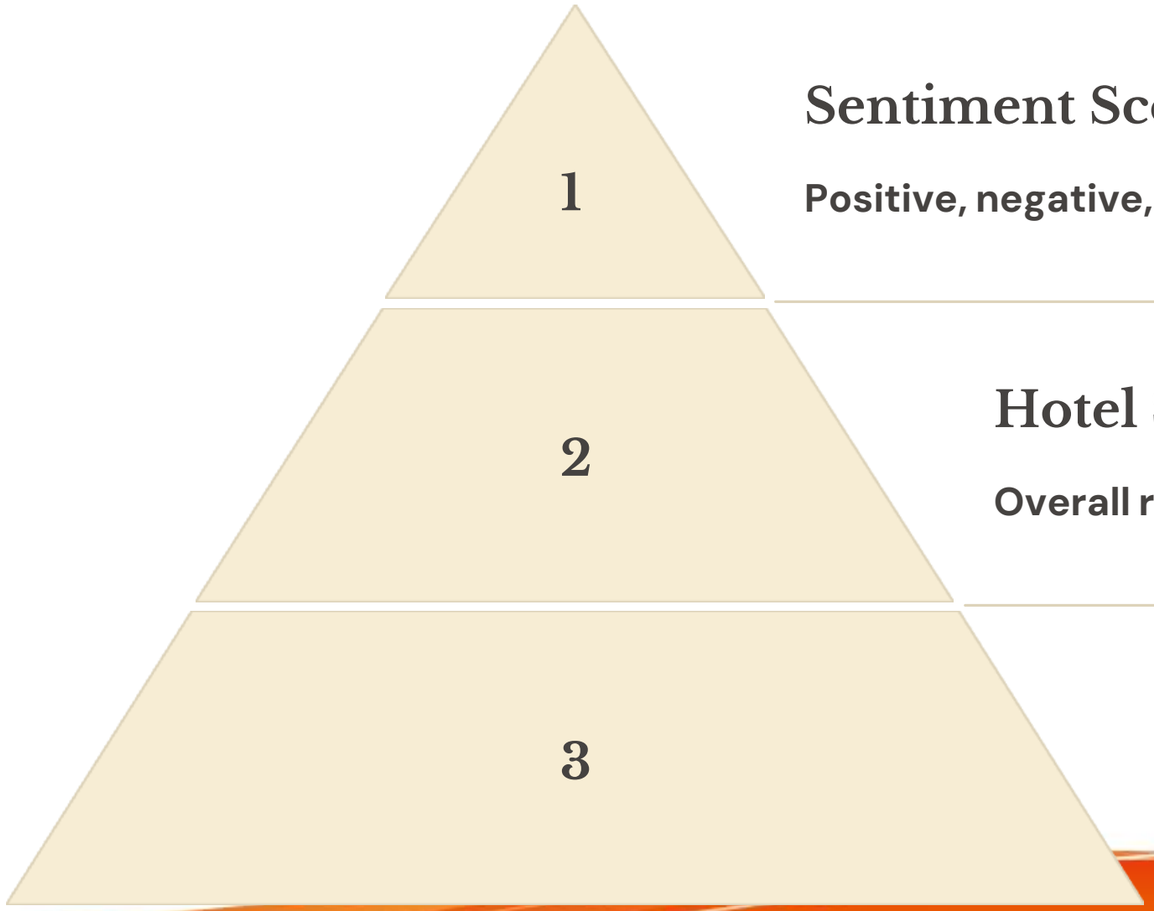
## Natural Language Processing

**We leverage NLP techniques to extract meaningful information from reviews.**

## Sentiment Analysis

**We use machine learning algorithms to determine the overall sentiment expressed in reviews.**

# Classify Hotel Scores Based on Sentiment Analysis




## Sentiment Scores

**Positive, negative, or neutral.**

## Hotel Scores

**Overall rating based on sentiment analysis.**

## Recommendations

**Personalized hotel suggestions based on user preferences and scores.**

# Improving Guest Satisfaction Through Personalized Suggestions

## Enhanced Guest Experience

Provides customized recommendations and solves queries quickly.

## Increased Loyalty

Positive interactions foster guest loyalty and repeat bookings.

## Valuable Feedback

Chatbots gather feedback, providing valuable insights for improvement.

# Recommend Hotels Based on User Preferences and Review Data

## User Profile

**Travel preferences, budget, and desired amenities.**

## Review Data

**Sentiment scores, keywords, and user ratings.**

## Location Data

**Proximity to attractions, transportation, and other points of interest.**

# Dataset Overview

## Hotel Review Dataset

**Our system uses a comprehensive dataset of hotel reviews from various sources.**

## Data Sources

**We collect review data from popular online travel agencies, social media platforms, and hotel websites.**

# Describe the Hotel Review Dataset Used for the System

1

## Review Text

**User-generated text describing their experience at the hotel.**

2

## Ratings

**Numerical ratings given by users on a scale of 1 to 5 stars.**

3

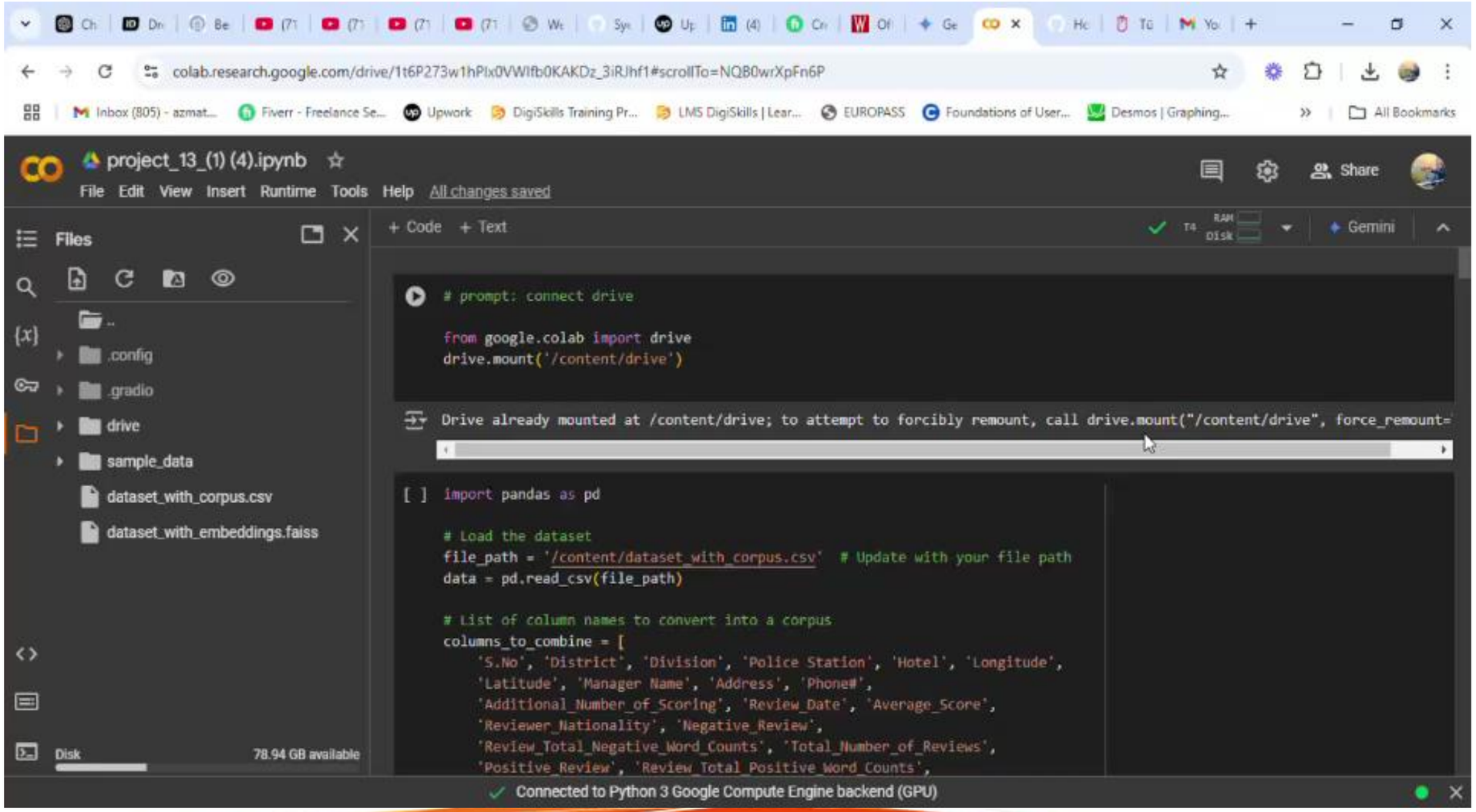
## Hotel Information

**Hotel name, location, amenities, and other relevant details.**

# The Future of Hospitality: Embracing Conversational AI

The future of hospitality lies in leveraging AI to create seamless and personalized guest experiences. Chatbots are just the beginning.

# Demo


colab.research.google.com/drive/1t6P273w1hPlx0VWlfb0KAKDz_3iRJhf1#scrollTo=NQB0wrXpFn6P
project_13_(1) (4).ipynb
File Edit View Insert Runtime Tools Help All changes saved
Share
Files
+ Code + Text
Gemini
.config
.gradio
drive
sample_data
dataset_with_corpus.csv
dataset_with_embeddings.faiss
Disk 78.94 GB available
# prompt: connect drive
from google.colab import drive
drive.mount('/content/drive')
Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remount=
[ ] import pandas as pd
# Load the dataset
file_path = '/content/dataset_with_corpus.csv' # Update with your file path
data = pd.read_csv(file_path)
# List of column names to convert into a corpus
columns_to_combine = [
'S.No', 'District', 'Division', 'Police Station', 'Hotel', 'Longitude',
'Latitude', 'Manager Name', 'Address', 'Phone#',
'Additional_Number_of_Scoring', 'Review_Date', 'Average_Score',
'Reviewer_Nationality', 'Negative_Review',
'Review_Total_Negative_Word_Counts', 'Total_Number_of_Reviews',
'Positive_Review', 'Review_Total_Positive_Word_Counts',
Connected to Python 3 Google Compute Engine backend (GPU)

# Q&A

# THANKS FOR LISTENING