# Word Classification Project

## Introduction

The Word Classification Project is a machine learning-based application that classifies a given word into categories such as animal, object, person, plant, or celestial body. It utilizes a Naïve Bayes classifier trained on a dataset of common words and their classifications. Additionally, the project fetches an image related to the word from an online source to enhance the user experience.

## Technologies Used

1. Python  
2. Flask (for the web interface)  
3. Scikit-learn (for machine learning model)  
4. HTML, CSS, JavaScript (for frontend UI)  
5. Unsplash API (for fetching images)

## How It Works

1. The model is trained using a dataset of predefined words and their corresponding categories.  
2. The user inputs a word in the web interface.  
3. The trained model predicts the category of the word.  
4. The application fetches an image related to the word using Unsplash.  
5. The result (category + image) is displayed to the user.

## Deployment Guide

1. Install dependencies using: `pip install flask scikit-learn`  
2. Run the Flask application using: `python app.py`  
3. Open the web browser and go to `http://127.0.0.1:5000/`  
4. Enter a word to classify and view its category with an image.

## Future Enhancements

1. Expand the dataset to include more words and categories.  
2. Improve UI with more animations and interactive elements.  
3. Integrate a database to store user inputs and responses.  
4. Deploy the application online using Docker and cloud services.