**STEPS FOLLOWED TO CREATE THIS PROJECT:**

1. **Prepare the Dataset**: Collect or create a dataset of audio samples labeled with emotions (e.g., happy, sad, angry).
2. **Feature Extraction**: Extract the features (MFCCs, pitch, intensity, spectral centroid, HNR) from each audio sample in the dataset using the **extract\_audio\_features** function you've defined.
3. **Feature Scaling**: Normalize or scale the features to ensure that they have similar ranges. This step helps improve the performance of machine learning algorithms.
4. **Split the Dataset**: Split the dataset into training and testing sets. The training set is used to train the model, while the testing set is used to evaluate its performance.
5. **Choose a Classifier**: Select a machine learning algorithm suitable for the classification task. Some common classifiers for audio classification include Support Vector Machines (SVM), Random Forest, and Convolutional Neural Networks (CNNs).
6. **Train the Classifier**: Train the selected classifier using the training data. Provide the extracted features as input and the corresponding emotion labels as target outputs.
7. **Evaluate the Model**: Evaluate the trained model using the testing data. Calculate metrics such as accuracy, precision, recall, and F1-score to assess its performance.
8. **Fine-tuning and Optimization**: Fine-tune the model hyperparameters and experiment with different feature sets to optimize the model's performance.
9. **Predict Emotions**: Once the model is trained and evaluated, you can use it to predict the emotions of new audio samples by extracting their features and feeding them into the trained model.