Assignment: Deploying a Machine Learning Model with Gradio

Objective:
The objective of this assignment is to develop, save, and deploy a machine learning model using the Gradio library to create a user interface, and then upload the entire project to GitHub. This exercise will help students understand the practical aspects of model deployment, UI creation.

Task:

1. Select a Model:
   - Choose a machine learning model for either a Computer Vision task (e.g., image classification, object detection) or an NLP task (e.g., text classification, sentiment analysis).

2. Load and Save the Model:
   - Write a Python script to load your selected pre-trained model.
   - Save the model locally using the appropriate method (e.g., `torch.save` for PyTorch models or `model.save` for TensorFlow models).

3. Create a Gradio Interface:
   - Write a Python script to load the saved model.
   - Define an inference function that takes an input (image or text) and returns the model's prediction.
   - Create a Gradio interface for your model.

4. Test the Interface:
   - Run your Gradio script locally to ensure the interface works correctly and the model predictions are accurate.

5. Upload to GitHub:
   - Create a new repository on GitHub.
   - Commit and push your project files to the GitHub repository.

6. Document Your Project:
   - Create a `README.md` file that includes an overview of your project, setup instructions, and dependencies.

7. Submit Your Work:
   - Provide the GitHub repository link.
   - Include a short video or screenshots demonstrating the Gradio interface in action.