**Instruction Guide for AI Environmental Audio Classification Webpage**

**1. Project Setup**

**Prerequisites**

* Python 3.8+
* Flask
* Jupyter Notebook (for converting notebooks to HTML)

**Step 1: Create a Virtual Environment**

Run the following commands in your project directory:

*python -m venv env*

**Step 2: Activate the Environment**

* **Windows:**

*.\env\Scripts\activate*

**Step 3: Clone the Repository**

*git clone <your-repository-url>*

*cd <repository-folder>*

**Step 4: Install Required Libraries**

*pip install flask nbconvert*

**Step 5: Convert Jupyter Notebooks to HTML**

Run these commands in your project directory:

*jupyter nbconvert --to html Project\_1.ipynb # EDA*

*jupyter nbconvert --to html Project-2.ipynb # Feature Extraction*

*jupyter nbconvert --to html Project\_3.ipynb # Models*

*jupyter nbconvert --to html Project\_5.ipynb # Comparison (CNN+RNN)*

*jupyter nbconvert --to html Project\_AST\_Model.ipynb # AST Model*

Move the generated .html files to the templates/ folder.

**2. File Structure**

*Project name/*

*├── app.py # Flask backend*

*├── static/*

*│ ├── background.png # Background image*

*│ └── visualization/ # All visualization images*

*│ ├── EDA/*

*│ ├── Feature Extraction/*

*│ ├── Models/*

*│ └── Comparisons/*

*├── templates/*

*│ ├── home.html # Main page*

*│ ├── Project\_1.html # EDA notebook*

*│ ├── Project-2.html # Feature Extraction notebook*

*│ ├── Project\_3.html # Models notebook*

*│ ├── Project\_5.html # Comparison notebook*

*│ ├── Project\_AST\_Model.html # AST Model notebook*

*│ └── visuals.html # Visualizations page*

**3. Running the Webpage**

Start the Flask server:

*python app.py*

Access the webpage at:  
👉 [http://127.0.0.1:5000](http://127.0.0.1:5000/)

**4. User Guide**

**Navigation**

1. **Home Button**: Top-left corner (resets the page).
2. **About Button**: Project overview.
3. **EDA/Feature Extraction/Models/Comparison**:
   * Each section has:
     + **Notebook**: View Jupyter Notebook as HTML.
     + **Visualizations**: Interactive graphs/images.

**Visualizations**

* Click any image to enlarge (lightbox mode).
* **Comparison Section**:
  + Toggle between **CNN+RNN Model** and **AST Model** results.

**5. Troubleshooting**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **Issue** | **Solution** | | --- | --- | | Flask server not starting | Ensure no other app is using port 5000 (lsof -i:5000) | | Missing images | Verify paths in home.html match static/visualization/ structure | | Notebooks not rendering | Re-run nbconvert and check filenames in templates/ | |

**6. Customization**

**Replace Background Image**

1. Add your image to static/background.png.
2. Update the path in home.html

**Add New Visualizations**

1. Save images to the appropriate folder under static/visualization/.
2. Update home.html (under showVisuals() function) with new paths.