# Yoga Exercise Improvement Web App

## Introduction

Welcome to the Yoga Exercise Improvement Web App, an innovative application designed to help yoga practitioners improve their poses through real-time feedback using computer vision technology. This app is aimed at enhancing user experience by providing accurate pose corrections, personalized recommendations, and tracking progress over time.

## Features

* **Real-Time Pose Detection:** Uses TensorFlow's MoveNet model to detect and analyze yoga poses.
* **Accuracy Feedback:** Provides real-time feedback on pose accuracy and suggests adjustments.
* **User Progress Tracking:** Stores user sessions and tracks progress over time.
* **Engaging UI:** Intuitive and user-friendly interface designed to keep users engaged.
* **Voice Feedback:** Uses pre-recorded audio clips to provide auditory feedback.
* **Data Security:** Ensures user data privacy and security with robust data management practices.

## Installation

To run the Yoga Exercise Improvement Web App locally, follow these steps:

1. **Clone the repository:**

git clone https://github.com/yourusername/yoga-exercise-improvement-app.git

cd yoga-exercise-improvement-app

1. **Create a virtual environment and activate it:**

python -m venv venv

source venv/bin/activate # On Windows, use `venv\Scripts\activate`

1. **Install the required dependencies:**

pip install -r requirements.txt

1. **Download and place the MoveNet model:**
   * Download the MoveNet model from TensorFlow's repository.
   * Place the model in the models directory.
2. **Set up the database:**

flask db init

flask db migrate -m "Initial migration."

flask db upgrade

## Running the Application in VS Code

To run the application using python app.py in VS Code:

1. **Open the project folder in VS Code:**
2. **Ensure your virtual environment is activated:**
   * Open the terminal in VS Code (Ctrl + ) and activate the virtual environment:

source venv/bin/activate

# On Windows, use `venv\Scripts\activate`

1. **Run the application:**
   * In the terminal, simply run:

python app.py

1. **Access the application:**
   * Open your web browser and go to http://127.0.0.1:5001.

## Usage

1. **Sign In or Register:**
   * New users can register by providing a username, email, and password.
   * Existing users can sign in using their email and password.
2. **Select a Yoga Pose:**
   * Choose a yoga pose from the list available on the poses.html page.
3. **Start the Pose Detection:**
   * Click the "Start" button to begin the real-time pose detection.
   * The app will open a new window with the webcam feed and start analyzing your pose.
4. **Receive Feedback:**
   * The app will provide real-time feedback on your pose accuracy.
   * Audio feedback will suggest adjustments if the pose is incorrect.
5. **Track Your Progress:**
   * View your session history and track your progress over time on the history.html page.

## Project Structure

* **app.py:** The main application file containing routes and backend logic.
* **angleCal.py** Contains file for calculating angles of any yoga pose
* **static/**: Contains static files like CSS, images, and JavaScript.
* **templates/**: Contains HTML templates for different pages.
* **requirements.txt:** Lists all the dependencies required for the project.

## Contributing

We welcome contributions to improve the Yoga Exercise Improvement Web App. To contribute, please follow these steps:

1. Fork the repository.
2. Create a new branch (git checkout -b feature-branch).
3. Make your changes and commit them (git commit -m 'Add new feature').
4. Push to the branch (git push origin feature-branch).
5. Create a new Pull Request.

## License

This project is licensed under the MIT License. See the LICENSE file for details.

## Acknowledgements

We would like to thank the developers and researchers behind TensorFlow, MoveNet, Mediapipe, and other libraries used in this project. Their work made this project possible.

## Contact

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