

Personal AI Gym Trainer

User Manual

Version 1.0

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1. INTRODUCTION

The contemporary landscape of fitness and wellness is undergoing a transformative shift, marked by an increasing reliance on personalized and AI-driven solutions to meet the unique needs of individuals pursuing home-based exercise routines. In response to this evolving paradigm, our project, the "Personal AI Gym Trainer," aims to provide a cutting-edge fitness experience that combines the power of computer vision, artificial intelligence, and interactive graphical user interfaces.

1.1 Purpose

The primary purpose of the "Personal AI Gym Trainer" is to provide users with an interactive and AI-driven solution for their home-based exercise routines. This application aims to revolutionize your fitness journey by offering real-time feedback, personalized guidance, and an engaging platform to achieve your fitness goals.

1.2 Key Features for Personal AI Gym Trainer

- **Real-Time Feedback:** Receive immediate guidance on your exercise form and posture during workouts.
- **Exercise History Tracking:** Keep a comprehensive record of your exercise history to monitor progress over time.
- **Total Counts:** Easily track the total counts of various exercises, allowing you to measure your overall performance.

2. SYSTEM REQUIREMENTS

To ensure optimal performance and a seamless experience with the "Personal AI Gym Trainer," please review the following hardware and software requirements.

2.1 Hardware Requirements:

1. **Processor:** Dual-core processor or higher.
2. **Memory (RAM):** 4 GB RAM or more.
3. **Webcam:** Integrated or external webcam for accurate pose estimation.
4. **Storage:** 10 GB of available storage space.
5. **Display:** Minimum resolution of 1280x720.

2.2 Software Requirements:

1. **Operating System:** Windows 10, macOS, or Linux.
2. **Python:** Version 3.7 or higher.
3. **Dependencies:** Ensure the following Python libraries are installed:
 - OpenCV
 - MediaPipe
 - Tkinter
 - NumPy
 - [Other dependencies as specified in the installation guide.]

3. INSTALLATION

Follow these steps to install the "Personal AI Gym Trainer" on your system and begin your personalized fitness journey.

3.1 Prerequisites:

Before proceeding with the installation, ensure that the following prerequisites are met:

1. **Python:** Install Python 3.7 or a higher version on your system. You can download Python from python.org.
2. **Git (Optional):** If you prefer using Git, ensure it is installed. You can download Git from git-scm.com.

3.2 Step-by-Step Installation:

1. Clone the Repository:

- Open a terminal or command prompt.
- Run the following command to clone the repository:

```
git clone https://github.com/AshishY3103/Personal-AI-Gym-Trainer
```

- Alternatively, you can download the repository ZIP file and extract it to your desired location.

2. Navigate to the Project Directory:

- Change your working directory to the project folder:

```
cd Personal-AI-Gym-Trainer
```

3. Install Dependencies:

- Run the following command to install the required Python libraries:

```
pip install -r requirements.txt
```

4. Run the Application:

- Execute the main Python script to launch the "Personal AI Gym Trainer" application:

```
python index.py
```

5. Explore the User Interface:

- Once the application is running, explore the user interface. Navigate through the dashboard, start an exercise, and experience real-time feedback.

4. GETTING STARTED

Embark on your fitness journey with the "Personal AI Gym Trainer." Follow these steps to make the most out of your personalized workout experience.

4.1 Launching the Application

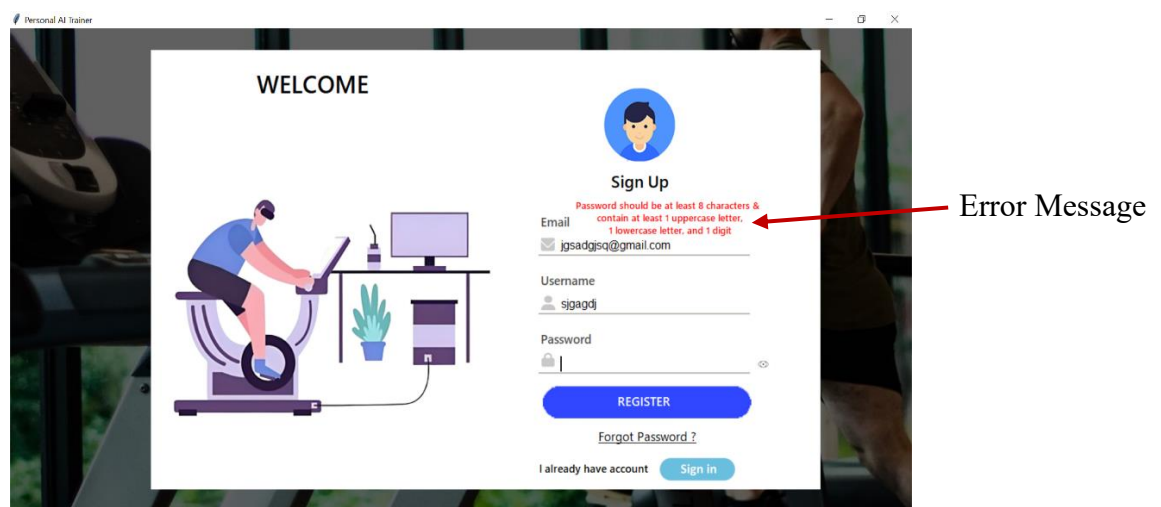
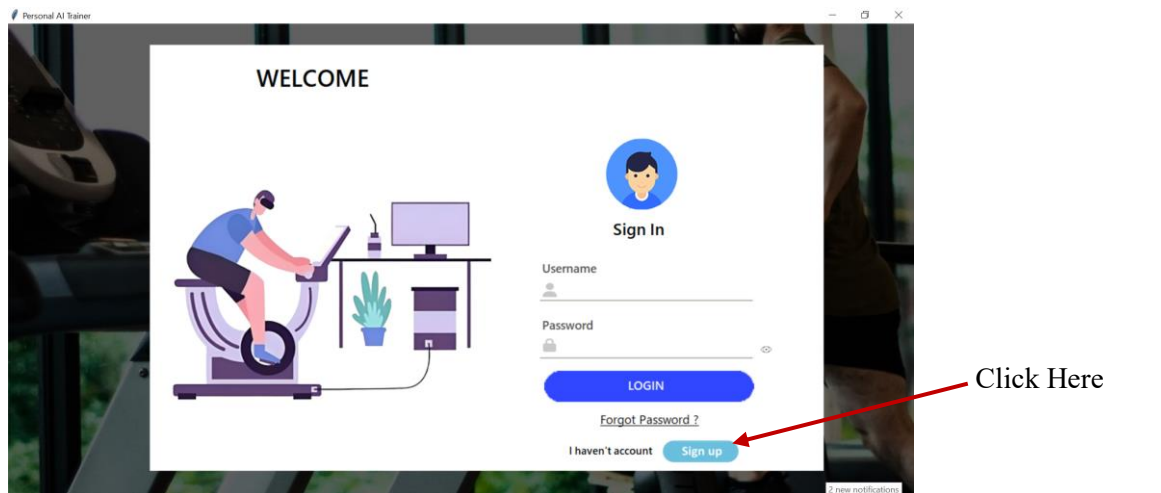
To start your fitness session:

- Open the application on your device.
- Upon launch, you will be directed to the main interface.

4.2 Login or Setup Instructions

If you are a new user:

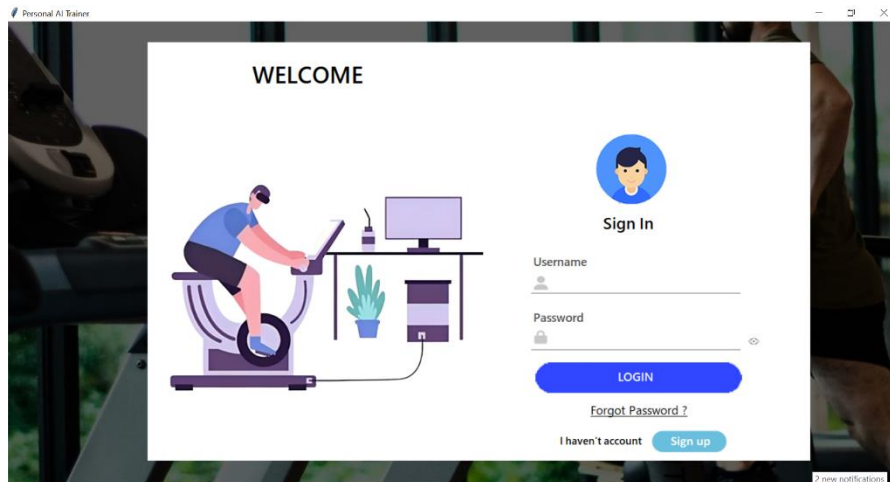
- Follow the on-screen setup instructions to create your profile.
- Set up a login if required, ensuring your data is secure.



Fill all the fields and then **click on REGISTER** Button

For returning users:

- Log in with your existing credentials.



Enter correct username and password and **click on LOGIN** Button

4.3 Dashboard

Explore the dashboard to:

- Review your exercise history.
- Monitor total counts of completed exercises.

Dynamic Label with username

Logout Button

Logo

Exercise History

Side Menu Bar

Total Count of Exercise

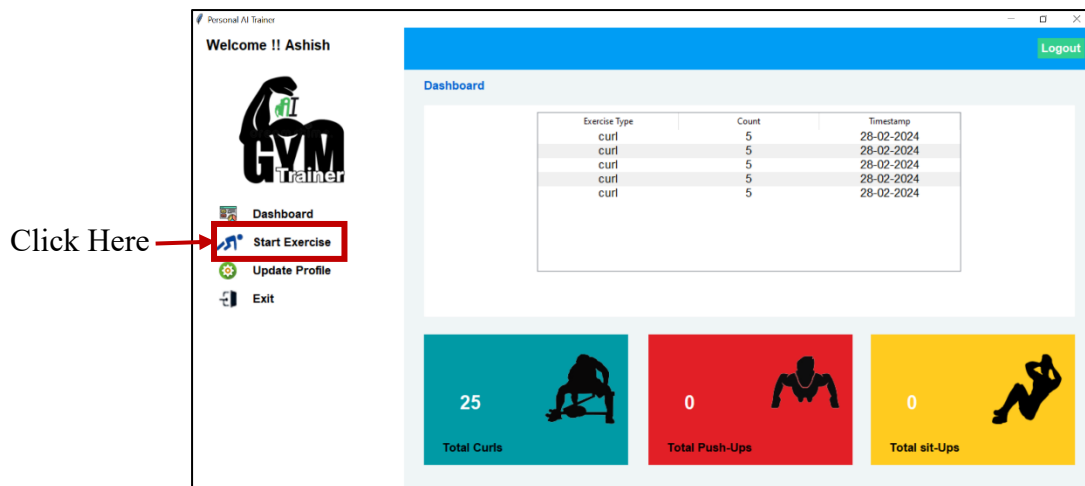
Exercise Type	Count	Timestamp
curl	5	28-02-2024
curl	5	28-02-2024
curl	5	28-02-2024
curl	5	28-02-2024
curl	5	28-02-2024

Exercise Type	Count
Total Curls	25
Total Push-Ups	0
Total sit-Ups	0

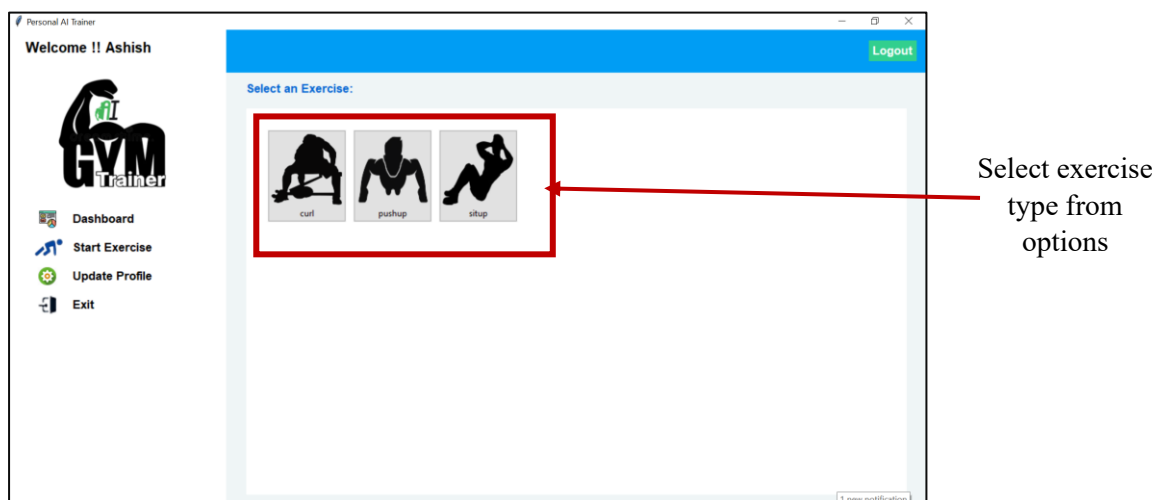
4.4 Starting an Exercise

To begin a new exercise:

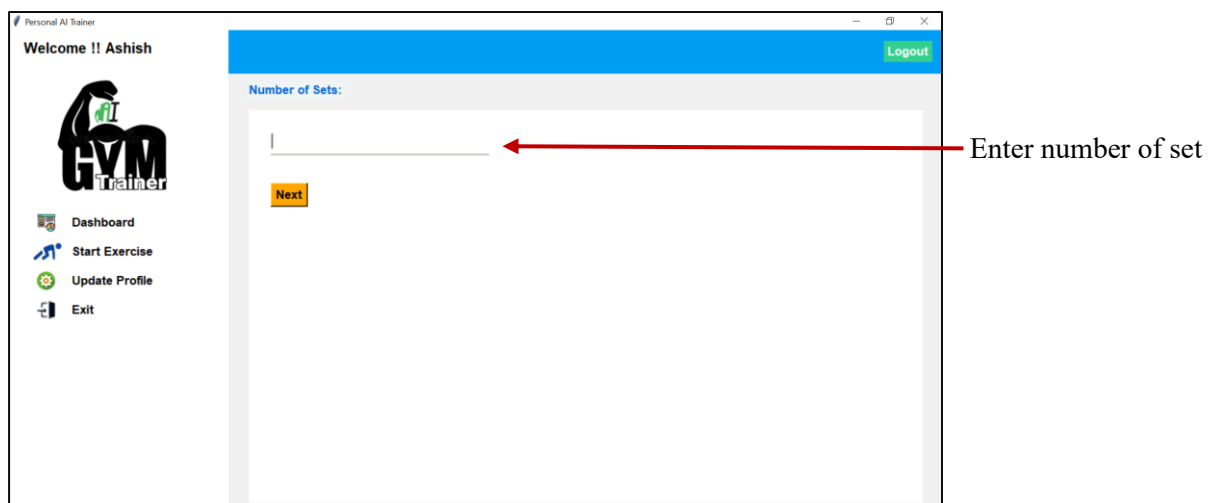
1. Navigate to the "Start Exercise" section.



2. Select your desired exercise type from the provided options.



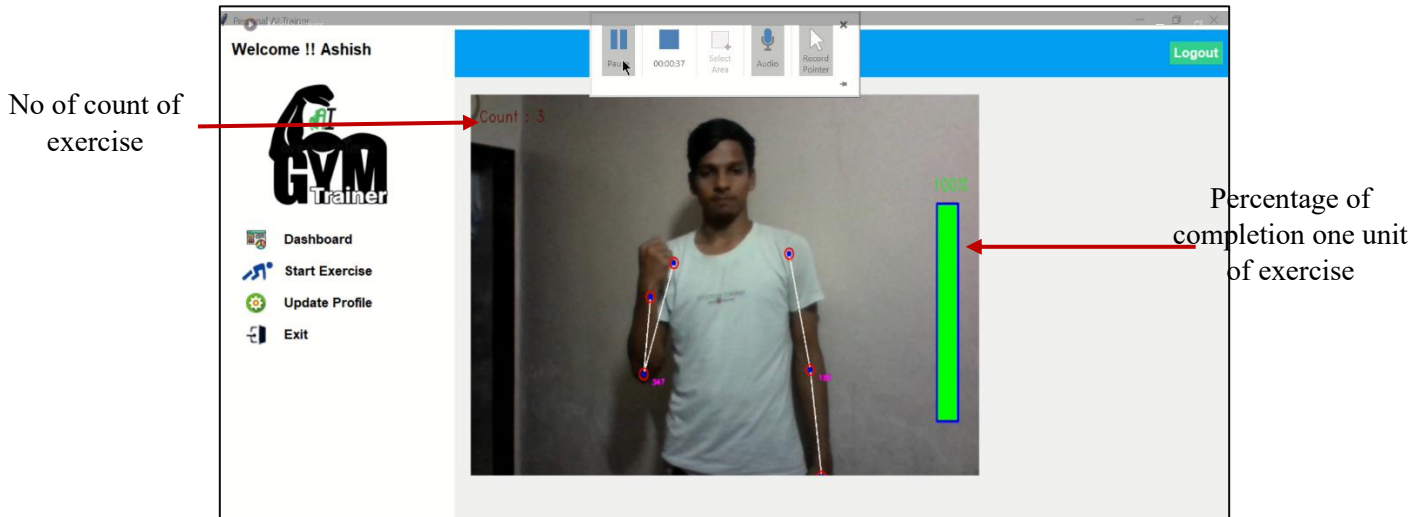
3. Set the number of exercise sets you wish to complete.



4.5 Real-time Feedback

Experience real-time guidance during your workout:

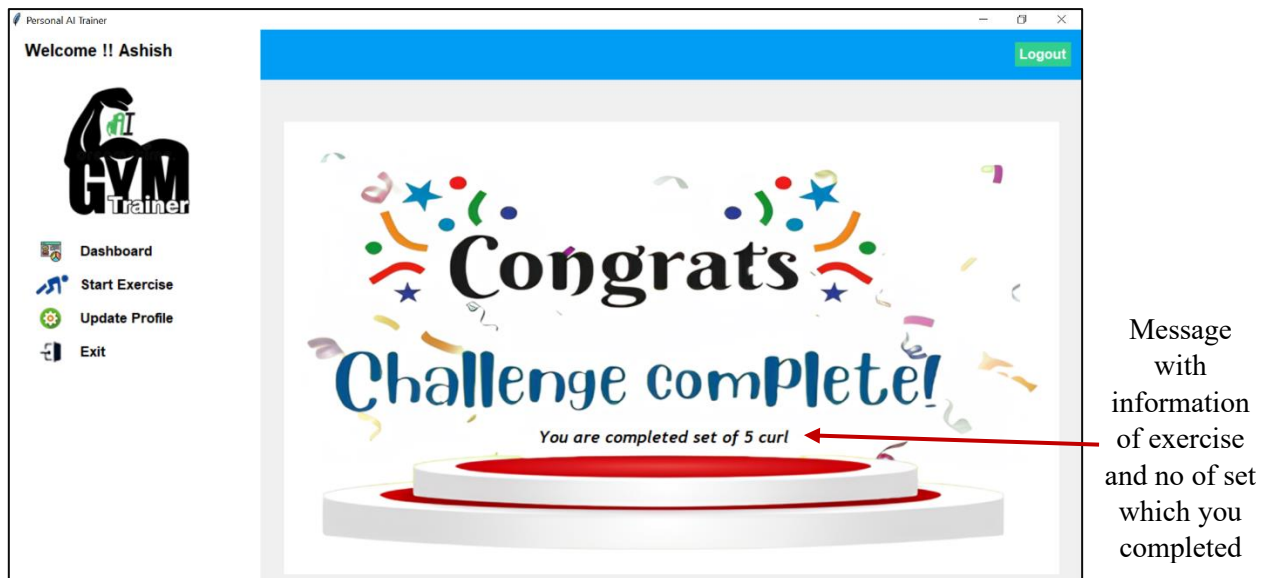
- Pay attention to visual cues on the screen.
- Receive immediate feedback on form and posture.



4.6 Completing an Exercise

Upon completing an exercise set:

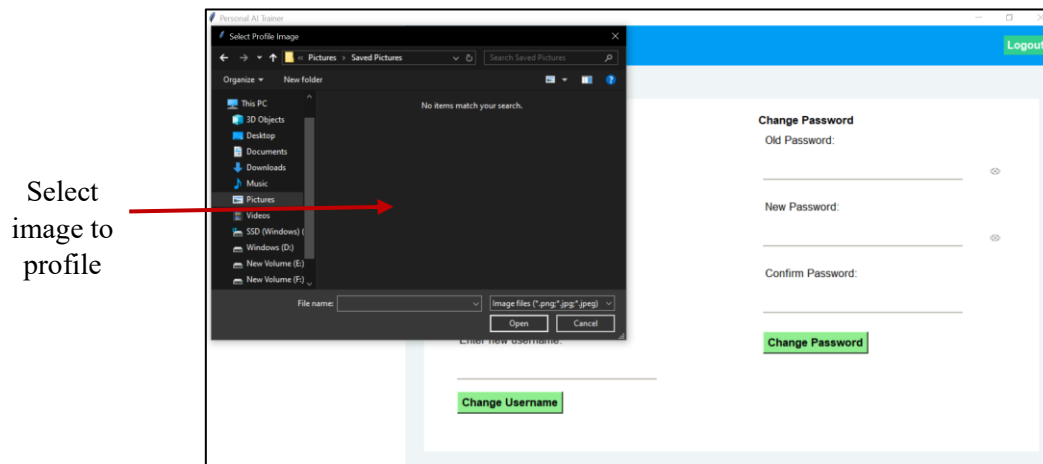
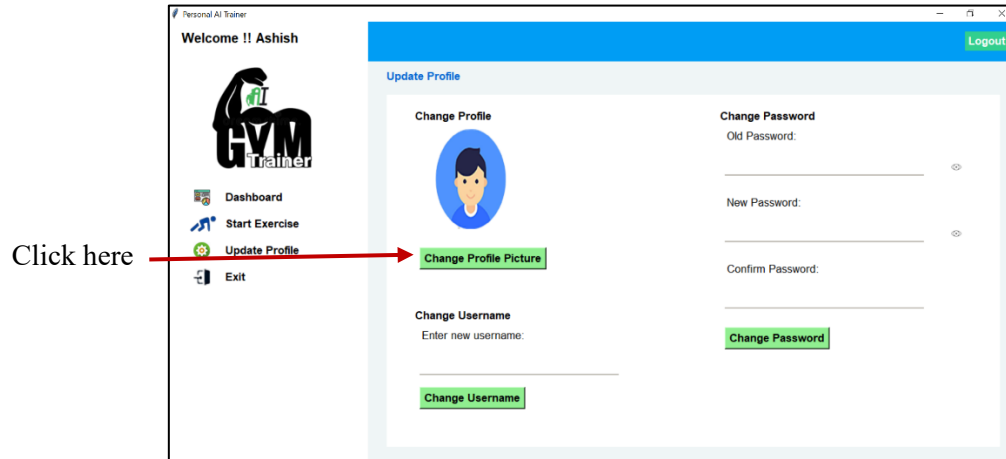
- Review the personalized congratulations message.
- Check the total counts to track your progress.



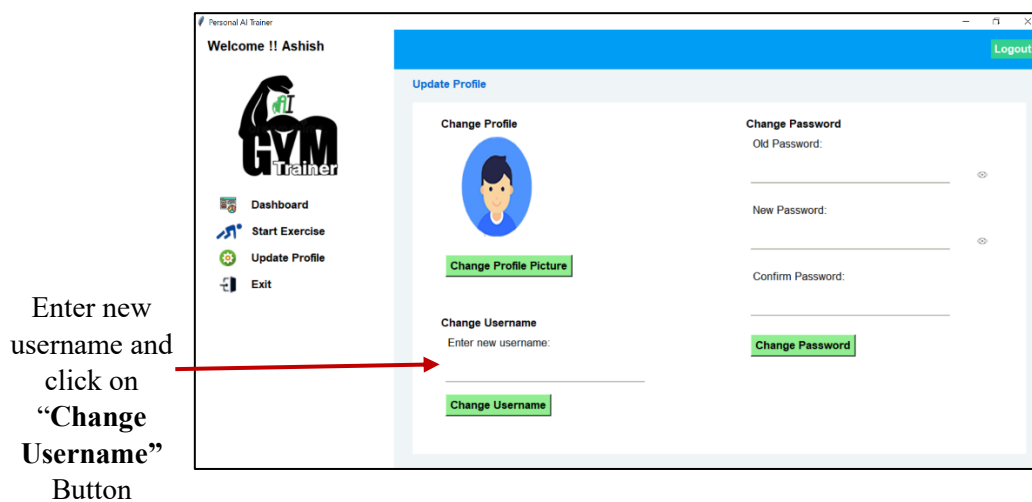
4.6 Update Profile

User can change its information :

- Change Profile Image :



- Change Username:



- Change Password:

Fill all the
fields and click
on “**Change
Password**”
Button

The screenshot displays the 'Personal AI Trainer' web application interface. The top navigation bar is blue with a 'Logout' button on the right. The main content area is titled 'Update Profile' and contains three sections: 'Change Profile' with a profile picture and a 'Change Profile Picture' button; 'Change Username' with a text input and a 'Change Username' button; and 'Change Password' which is highlighted with a red box. The 'Change Password' section includes three password input fields labeled 'Old Password:', 'New Password:', and 'Confirm Password:', each with a toggle icon to the right. A 'Change Password' button is located at the bottom of this section. A red arrow points from the text 'Fill all the fields and click on “Change Password” Button’ to the 'Change Password' section.

5. FUTURE ENHANCEMENTS

The "Personal AI Gym Trainer" has laid a strong foundation, and there are several potential future enhancements to further improve its functionality, user experience, and adaptability.

5.1 Upcoming Features :

1. Enhanced Gesture Recognition:

- Implement machine learning techniques to enable the system to adapt and learn from individual users' unique movement patterns.
- Explore the use of deep learning models for gesture recognition to improve accuracy and robustness.

2. Expanded Exercise Library:

- Continuously expand the library of supported exercises to offer users a diverse range of workouts.
- Integrate machine learning algorithms to automatically recognize and suggest new exercises based on user preferences and performance.

3. Customizable Workout Plans:

- Allow users to create personalized workout plans by selecting exercises, setting repetitions and sets, and defining rest intervals.
- Implement adaptive algorithms that adjust workout plans based on user progress and feedback.

4. Interactive Virtual Trainer:

- Develop an interactive virtual trainer that guides users through workouts with voice instructions, encouraging messages, and form corrections.
- Incorporate natural language processing (NLP) for more natural and engaging interactions.

6. CONCLUSION

Thank you for choosing the "Personal AI Gym Trainer" to be your fitness companion. We appreciate your commitment to a healthier lifestyle and hope our application enhances your workout experience.

6.1 Thank You Message

We express our gratitude for being a part of your fitness journey. Your dedication inspires us to continue improving and providing innovative solutions for your well-being.

6.2 Feedback

Your feedback is invaluable to us. Please take a moment to share your thoughts, suggestions, or concerns. Your input helps us tailor the "Personal AI Gym Trainer" to meet your evolving needs. Contact us at [support@personalaitrainer.com or through our online feedback form.