AI PROJECT LOGBOOK

# Project Name: SQUAT COUNTER

School Name: Tagore Public School

Year/Class: 2024-25

Teacher Name: Ms. Ritu

# 1. Introduction

The SQUAT COUNTER project is an AI-based solution aimed at assisting users in tracking their squats using real-time pose estimation. The project utilizes a pre-trained AI model and camera footage to monitor and count squats, providing feedback to the user.

# 2. Team Roles

| Role | Role Description | Team Member Name |
| --- | --- | --- |
| Project Manager | Oversaw the entire project and coordinated team efforts | Shreya Chaurasia |
| Logbook Maintainer | Recorded and organized project progress | Akshay |
| Director of Video Presentation | Managed the video creation process | Satvik & Tejas |
| Website Designer | Designed and updated the project website | Sparsh |
| Code Writer | Explains the model behind the project.Developed project codebase. | Prince Pandey |

# 3. Project Plan

The following is the project plan including planned and actual start/end dates and responsibilities.

| Phase | Task | Planned Start Date | Planned End Date | Who is Responsible |
| --- | --- | --- | --- | --- |
| Preparing | Team meetings, coursework | 12 August | 14 August | All Members |
| Defining the Problem | Research & brainstorming | 15 August | 17 August | Prince Pandey |
| Collecting Data | Gathering resources | 18 August | 20 August | Google |
| Building Prototype | Model development | 21 August | 23 August | Prince Pandey |
| Testing | User testing | 24 August | 25 August | All Members |
| Video Presentation | Script and video creation | 27 August | 29 August | Satvik & Tejas |

# 4. Problem Definition

Local Problem: Lack of effective ways for users to track their squats without expensive fitness equipment.

Chosen Problem: How can we help fitness enthusiasts track their squats accurately without requiring additional hardware or expensive memberships?

# 5. The Users

Who are the users? Fitness enthusiasts who want a simple and affordable way to track their workout progress.

What have we observed? Users often rely on manual counting or expensive devices, which can be inaccurate or inaccessible.

# 6. Brainstorming

Solution Ideas:  
1. Use AI for pose estimation via camera input.  
2. Develop a web-based interface to visualize squat tracking.  
3. Integrate real-time feedback for squat form improvement.

# 7. Design

Steps for Users:  
1. Open the web application on a laptop.  
2. Enable camera access for live footage.  
3. Begin squatting while the system tracks and counts the repetitions.

# 8. Data

Data Needed:  
- Body pose data for squat movements.  
Source:  
- Pre-trained MoveNet model using the COCO dataset.

# 9. Prototype

We used the MoveNet model, which was trained on a large dataset of human figures, to develop our squat counting system. The prototype was tested using live camera footage, and adjustments were made to enhance the accuracy of the squat detection.

# 10. Testing

User Feedback:  
- The system successfully counts squats but could improve in identifying incorrect squat forms.  
Improvements Needed:  
- Enhance the form-checking feature to provide more detailed feedback on user posture.

# 11. Team Collaboration

The team worked both online and offline, meeting regularly via WhatsApp and in-person at school. Google Docs and shared drives were used for communication and document management.

# 12. Individual Learning Reflection

Team Reflections:  
- Shreya: "I learned the importance of coordinating a diverse team."  
- Akshay: "Recording progress consistently was key to staying organized."  
- Satvik: "Editing videos and ensuring clear communication was a valuable experience."

# Video Link:

[Enter the video URL here]