**AI Medical Trainer**

It is a part of computer vision project using python. It will help the user with their regular medical exercise. It will show the counts of reps of an exercise. You can see the working of the algorithm in the demo video where a nurse is showing a leg exercise. In the video you can see that it is displaying number of reps and a message to help the user. Here I have made sure it will count only if the knee is bent for more than 8 sec and angle is less 140 degrees.

**Imports**

import cv2  
import mediapipe as mp  
import time

import PoseModule as pm  
import math

**cv2**

cv2 is the module import name for OpenCV-python, "Unofficial pre-built CPU-only OpenCV packages for Python". OpenCV is an open-source library which is very useful for computer vision applications such as video analysis, CCTV footage analysis and image analysis. OpenCV is written by C++ and has more than 2,500 optimized algorithms. When we create applications for computer vision that we don’t want to build from scratch we can use this library to start focusing on real world problems.

**Mediapipe**

Mediapipe is the simplest way for researchers and developers to build world-class ML solutions and applications for mobile, desktop/cloud and IoT devices.

**Time**

The time module in python is a very convenient way to working and using functions and objects in python.

**Math**

Python has a built-in module that you use for mathematical tasks. The math module has a set of methods and constants.

**NumPy**

NumPy is a python library used to work with array.

**Module**

The Class **poseDetector** contains all the functions. The **findpose()** function take image as input and finds out all the landmarks and returns image with all land marks. The **findPosition()** function converts the landmark according to image height and width. The **findAngle()** function finds the angle between three point and print in on the image. The app.py file imports the PoseModule.py and calls all the function to find landmark and angles and calculate the number of reps.