

# POSTURE ASSESMET AND CORRECTION SYSTTEM

## ErgoAI





# The Team



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# PRESENTATION OVERVIEW

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NEED FINDING

EXISTING SOLUTIONS

OUR SOLUTION

EMAPTHY MAP

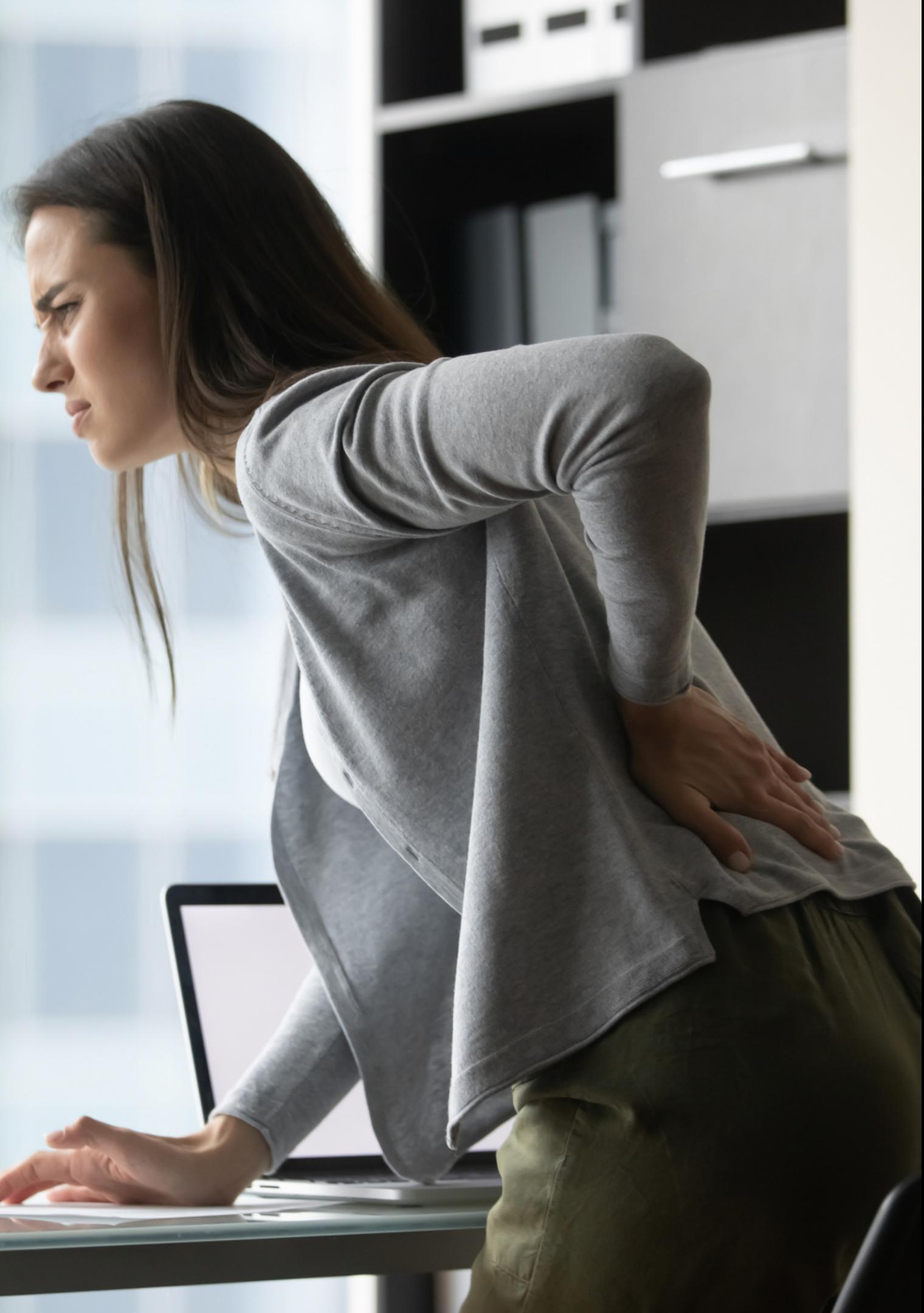
HEURESTIC EVALUATION



# PROBLEM STATEMENT



- PC and Laptops are used extensively for working, entertainment and education by everyone starting from people who are working in offices to adolescents who tend to spend more hours sitting in front of PC and laptop
- Thousands of IT sector employees “glued to their desks” working for long hours leads to the risk of developing Musculoskeletal disorder such as back pain ,neck pain ,frozen shoulder and carpal tunnel syndrome.



- Musculoskeletal disorders are typically characterised by discomfort (often persistent) and restrictions in mobility, dexterity and functional ability, reducing people's capability to work and participate in social roles with associated influences on psychological welfare.
- Employees in MNC's, Streamers, Content creators are more laid back and see this as a real problem, the intensity changing with certain factors. The current solutions not being effective enough, as they were not habit based and they were never motivated enough to actually work on their posture or the physical stress they face.

# 1.71 billion

People globally suffering from  
musculoskeletal Disorder

# 2 million

Number of cases reporting every year  
globally

# 59%

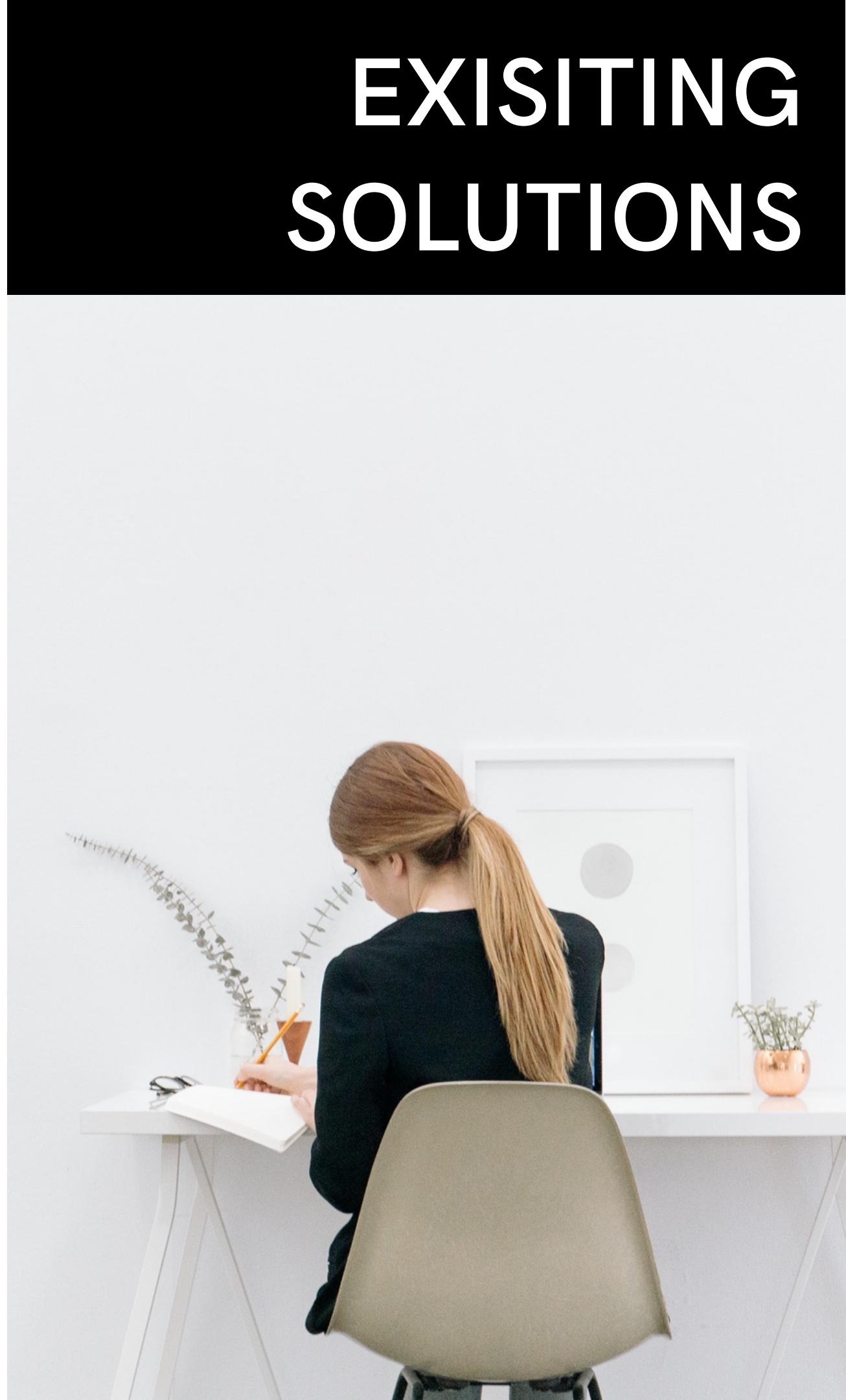
Office workers suffering from Neck pain  
,back pain and frozen shoulders

## NEED FINDING

- According to the previously conducted studies around the world, musculoskeletal disorders (MSDs) are the most prevalent disorders among computer operators.
- The prevalence of the neck and shoulders pain is reported to be high, in comparison with the pains in the other limbsthat leading to sickness absence and disability, decreasing work efficiency, and extensive costs upon the organizations and societies.

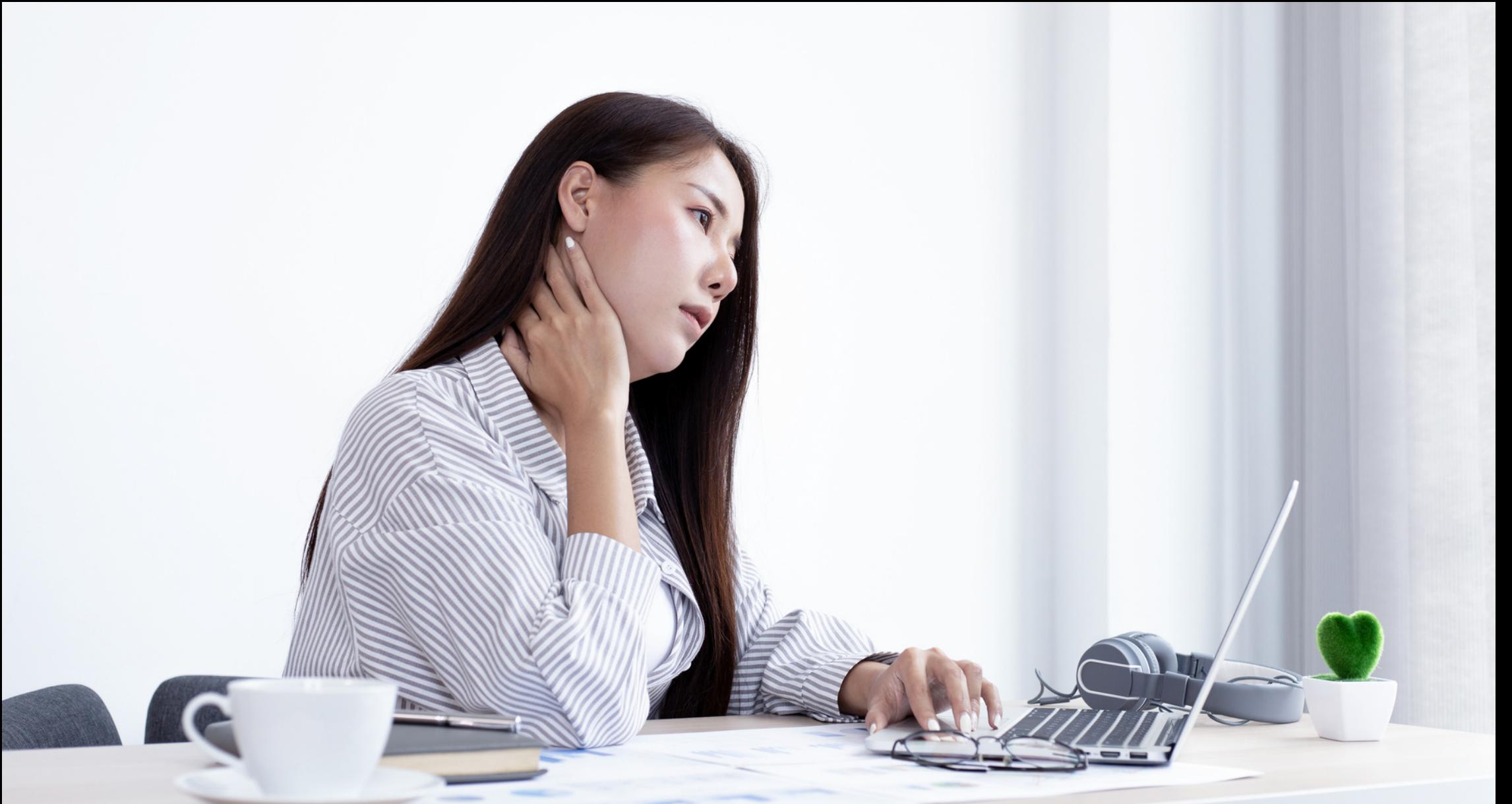
# EXISTING SOLUTIONS

- *THE CURRENT SOLUTIONS THAT ARE BEING OFFERED BY WELL-KNOWN SOFTWARE APPLICATIONS SUCH AS WELLNOMICS AND BREAKMINDER GIVES TIMELY BASED REMINDER ALERTS IN THE FORM OF A NOTIFICATION ON THE PC'S SCREEN.*
- *MOST OF THE TIME PEOPLE TEND TO NEGLECT THE NOTIFICATION DUE TO WORKLOAD SO THE CURRENT SOLUTIONS THAT ARE BEING OFFERED HAVE NO IMPACT ON PHYSICAL HEALTH OF AN EMPLOYEE, AND BASICALLY WORK-RELATED MUSCULOSKELETAL DISORDER IS MAINLY CAUSED DUE TO HABIT OF SITTING IN IMPROPER POSTURE FOR LONG TIME.*



# **OUR SOLUTION**

- The existing software don't know whether the person is sitting in proper or improper posture, so that's where ErgoAI comes into the picture where we give them an alert when they switch to improper posture
- ErgoAI Detects the silhouette of an employee's posture from their webcam over a period of time throughout the day and pings an alert when it detects the posture that could be harmful for the employee



# Empathy Map

Here is a example that allowed us to quickly understand our users' experience and mindset.

SAYS :

Yes, I work in IT sector and I have severe back pain though I take many precautions to avoid it. But cause of the nature of the job I had to sit around 8-9 hours (7 hours minimum) a day on the chair which is making problems worst.

THINKS:

He wanted something that'll remind him to take regular breaks, walking around, having food on time, exercising etc may help avoid these problems to worsen.

DOES:

- Replace my seated desk with a standing desk Submit
- Whenever I sit: for every 30 minutes of sitting I should move around for 2 minutes to the kitchen, to the bathroom, pace around, etc.
- Learn how to properly stand and organize my spine from the bottom up

FEEL:

What makes it worse is that sometimes I am involved so deeply working on projects, that I forget to take regular breaks or food on time. This further aggravates my health problems. Not being physically active enough may be another major contributive factor.

# HEURISTIC EVALUATION

Shneiderman's Eight Golden Rules Will Help You  
Design Better Interfaces

- ***CONSISTENT SEQUENCES OF ACTIONS SHOULD BE REQUIRED IN SIMILAR SITUATIONS; IDENTICAL TERMINOLOGY SHOULD BE USED IN PROMPTS, MENUS, AND HELP SCREENS; AND CONSISTENT COMMANDS SHOULD BE EMPLOYED THROUGHOUT.***
- ***WE HAVE CONSISTENT USER-INTERFACE FOR ALL THE PAGES OF THE APPLICATION. IDENTICAL TERMS IN MENU HELPS IN NAVIGATING BETWEEN ALL THE PAGES.***
- ***EX: USER CAN SWICHT OFF THE NOTIFICATION***

## 1. Strive for Consistency

- As the frequency of use increases, so do the user's desires to reduce the number of interactions and to increase the pace of interaction. Abbreviations, function keys, hidden commands, and macro facilities are very helpful to an expert user.
- A user once logged in , will be logged in throughout his session until closes the application. Alongside clicking on login Keyboard key (ENTER) can be used to confirm the login credentials and email confirmation for using the application.

**2. Enable frequent users to use shortcuts**

- *FOR EVERY OPERATOR ACTION, THERE SHOULD BE SOME SYSTEM FEEDBACK. FOR FREQUENT AND MINOR ACTIONS, THE RESPONSE CAN BE MODEST, WHILE FOR INFREQUENT AND MAJOR ACTIONS, THE RESPONSE SHOULD BE MORE SUBSTANTIAL..*
- *NOTIFICATIONS ARE EXPRESSED IN PLAIN LANGUAGE (NO ERROR CODES), PRECISELY INDICATE THE PROBLEM, AND CONSTRUCTIVELY SUGGEST A SOLUTION*
- *EX: A BAD EXAMPLE WE OFTEN SEE IS WHEN AN ERROR MESSAGE SHOWS AN ERROR-CODE INSTEAD OF A HUMAN-READABLE AND MEANINGFUL MESSAGE.*

3. Offer informative feedback

- Sequences of actions should be organized into groups with a beginning, middle, and end. The informative feedback at the completion of a group of actions gives the operators the satisfaction of accomplishment, a sense of relief, the signal to drop contingency plans and options from their minds, and an indication that the way is clear to prepare for the next group of actions.
- Respective dialogue boxes are there indicating Predictions made success or failure

## **4. Design *dialog to yield closure***

- *DESIGN THE SYSTEM IN SUCH A WAY THAT THE USER CANNOT MAKE A SERIOUS ERROR.*
- *IF AN ERROR IS MADE, THE SYSTEM SHOULD BE ABLE TO DETECT IT AND OFFER SIMPLE, COMPREHENSIBLE MECHANISMS FOR HANDLING THE ERROR.*
- *IF THE USER POSTURE IS NOT CLEARLY CAPTURED IN THE CAMERA, WE INDICATE WITH AN ALARM TO PROPERLY ORIENT HIS/HER FACE.*

## 5. Offer simple error handling

- This feature relieves anxiety, since the user knows that errors can be undone; it thus encourages exploration of unfamiliar options.
- The units of reversibility may be a single action, a data entry, or a complete group of actions.

## ***6. Permit easy reversal of actions***

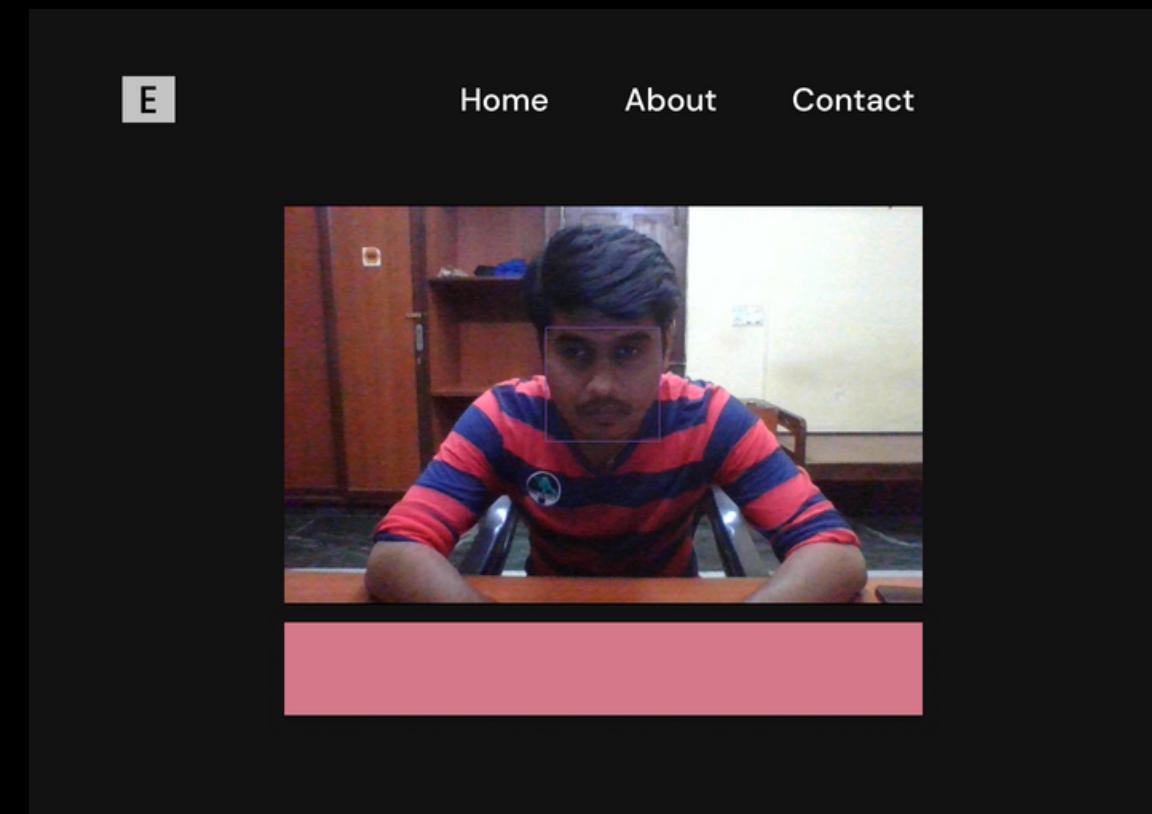
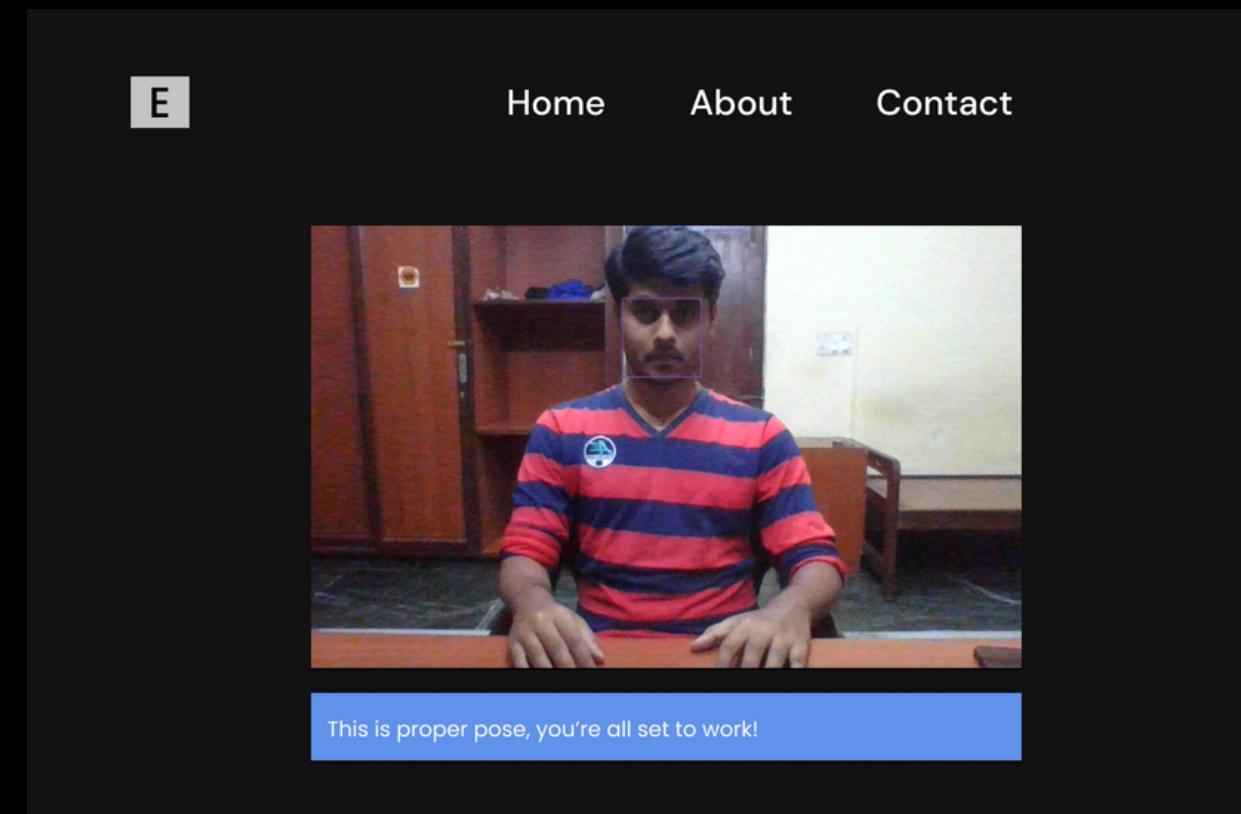
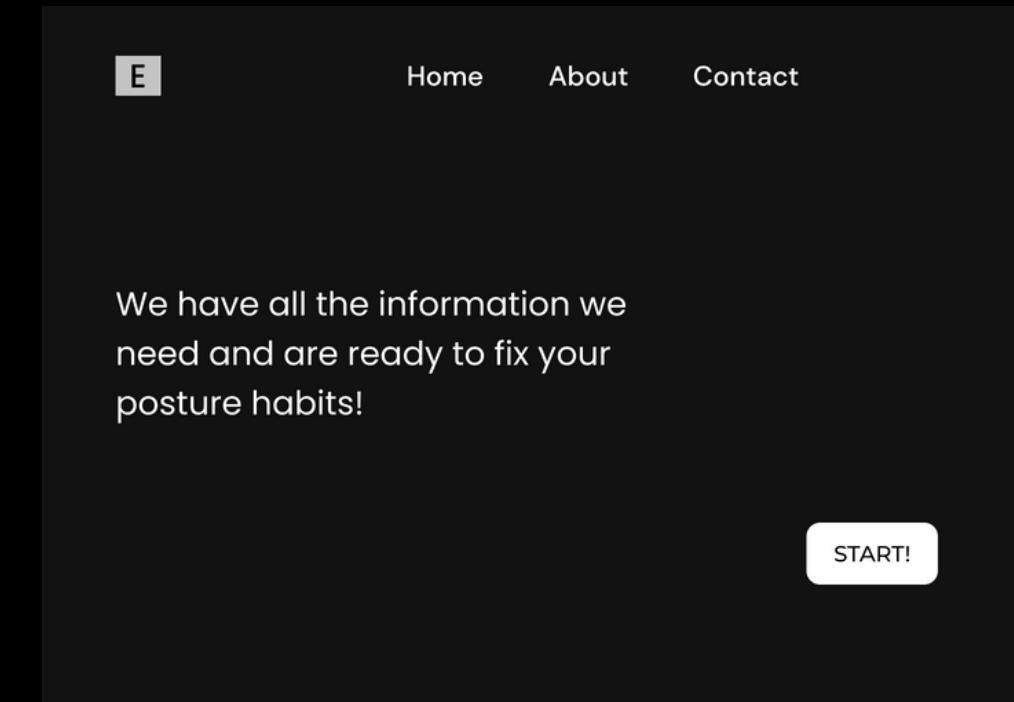
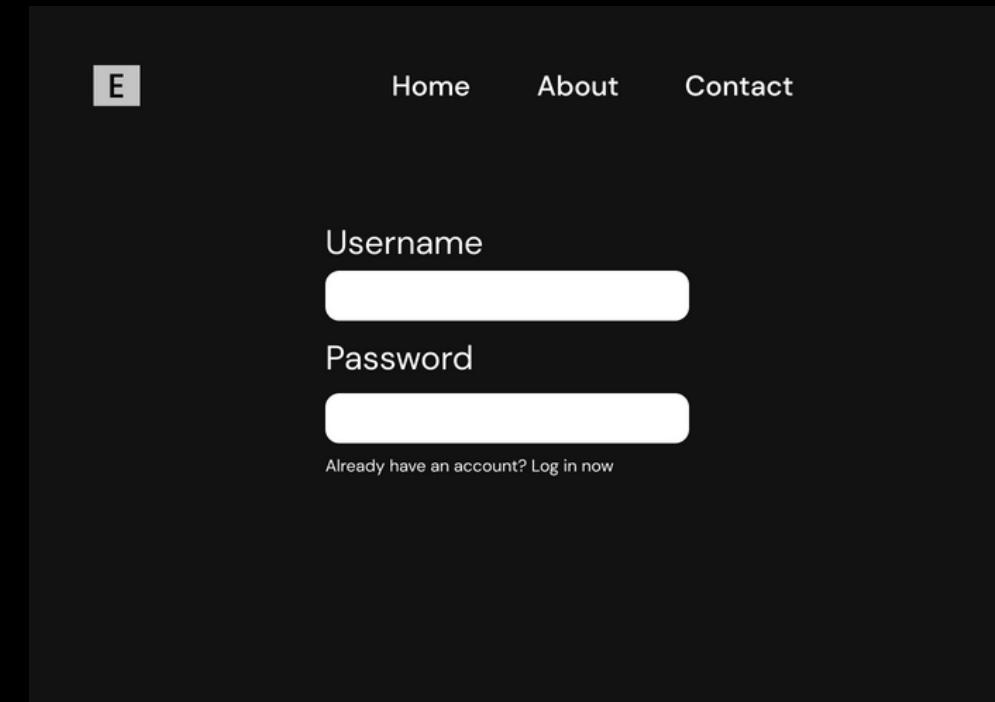
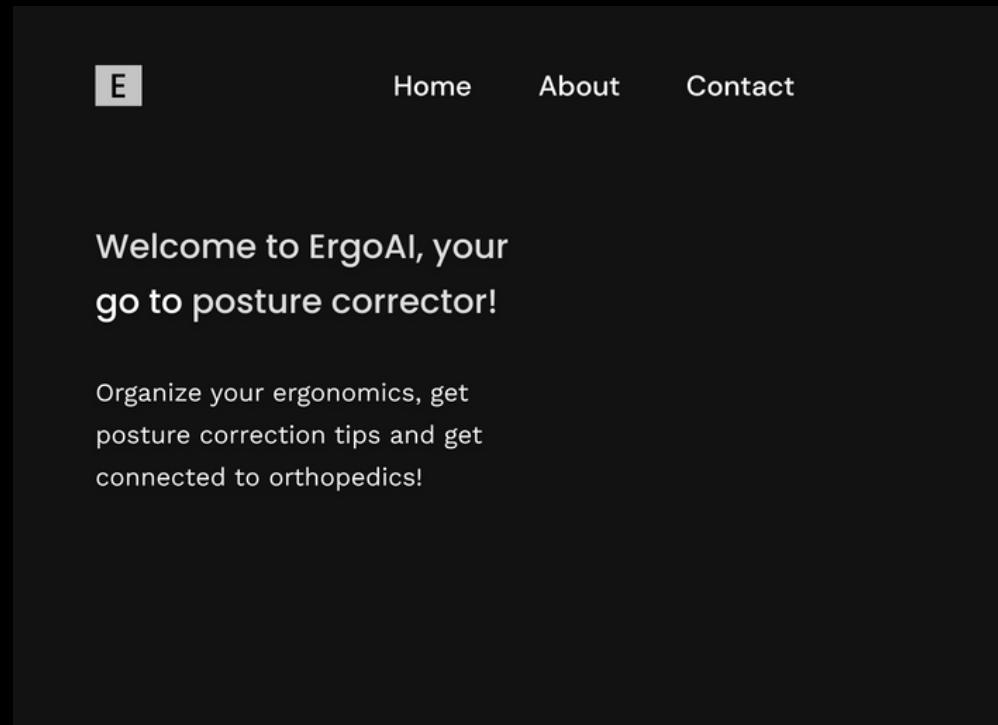
- *DESIGN THE SYSTEM TO MAKE USERS THE INITIATORS OF ACTIONS RATHER THAN THE RESPONDERS.*
- *USERS WILL BE IN FULL CONTROL OF THE APPLICATION, BECAUSE ONLY WHEN THEY PROVIDE THEIR ACCESS TO WEBCAME THEY WILL BE ABLE TO ACCESS THE APPLICATION.*

## 7. Support internal locus of control

## **8. Reduce short-term memory load**

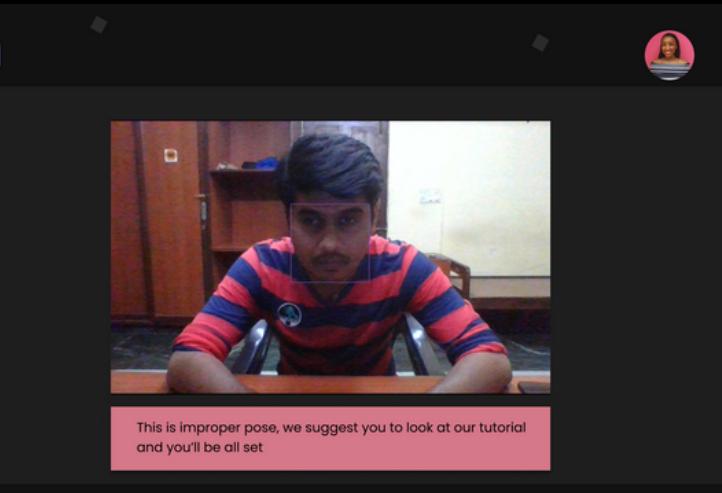
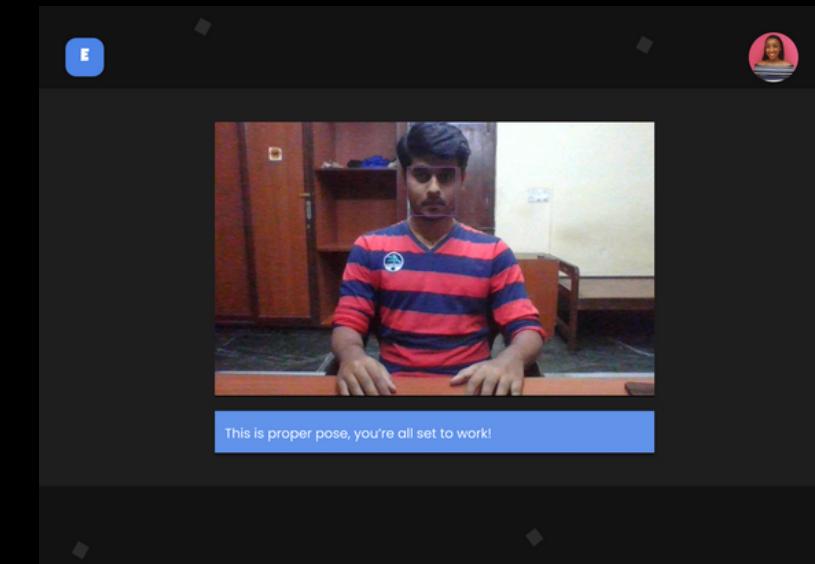
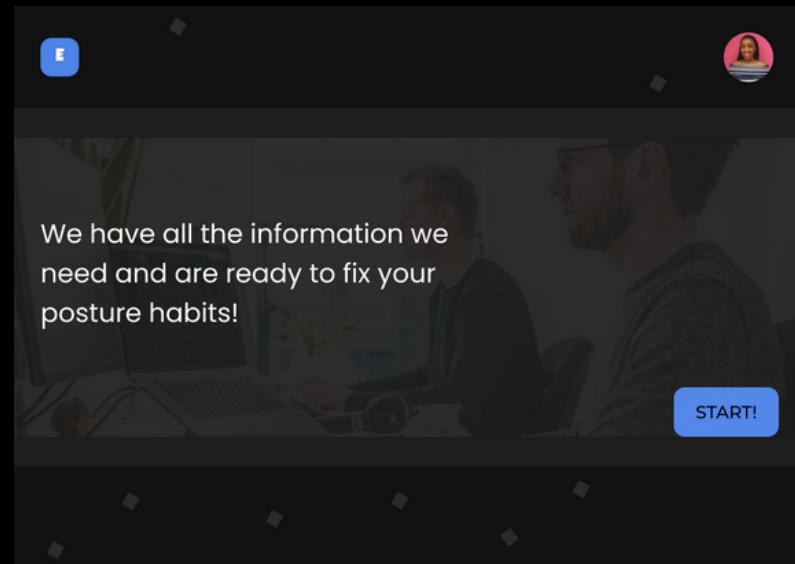
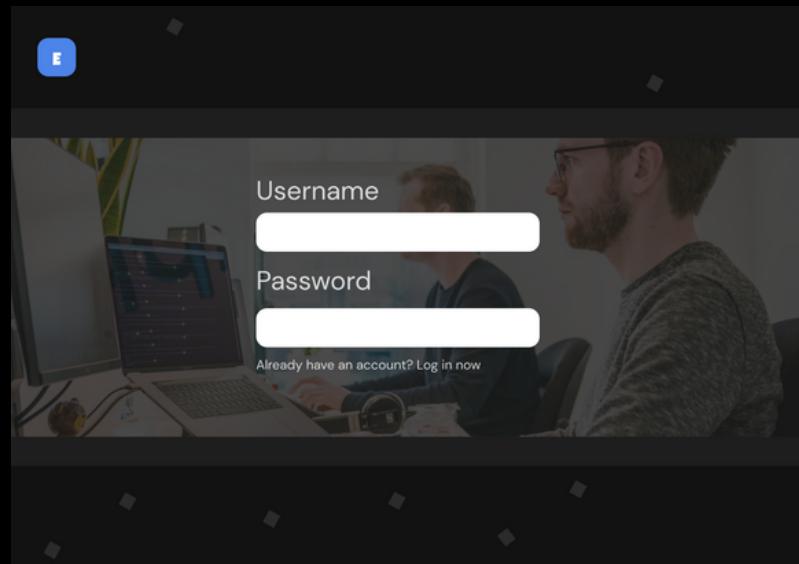
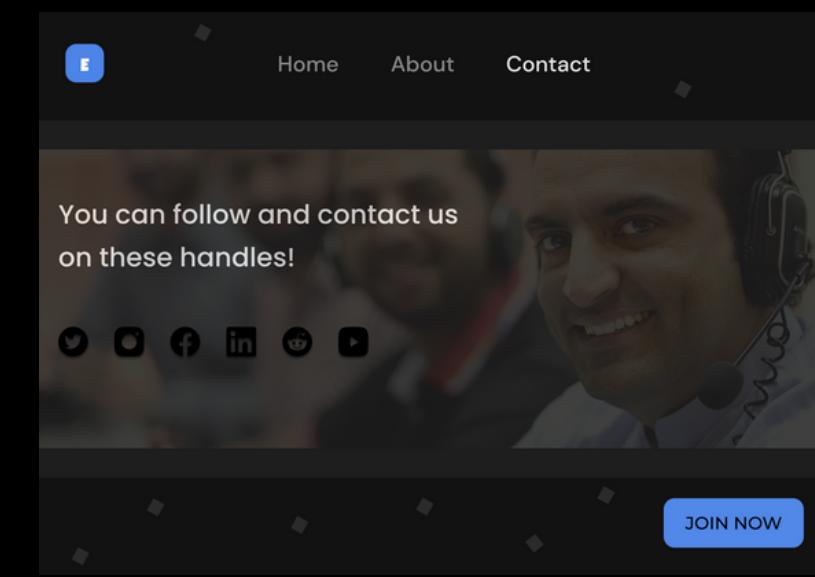
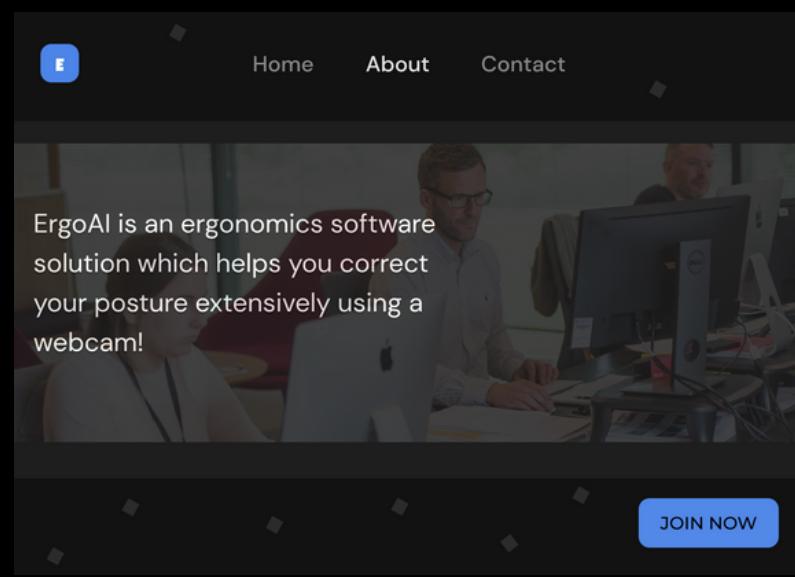
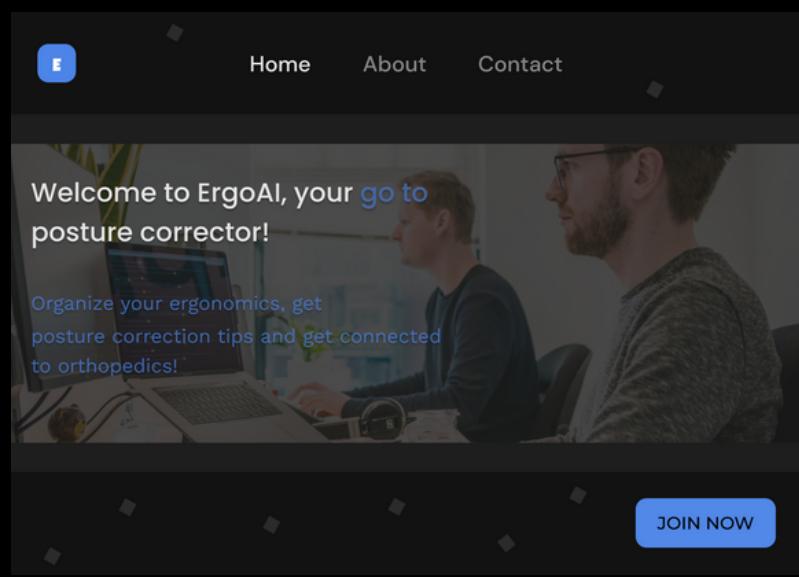
- The limitation of human information processing in short-term memory requires that displays be kept simple, multiple page displays be consolidated, window-motion frequency be reduced, and sufficient training time be allotted for codes, mnemonics, and sequences of actions.
- The above web application being a minimalistic design takes only username and mail-id as user credentials in order to keep track of the number of users using the application.
- Hence the user need not remember information from one page to another

# Low fidelity prototype



# High fidelity prototype

This prototype is made in Figma, and then exported as png images which we show here in the presentation, the prototyping is done according to the sequence of pages that it traverses  
The high fidelity prototype is shown in the next page.



Thank  
You