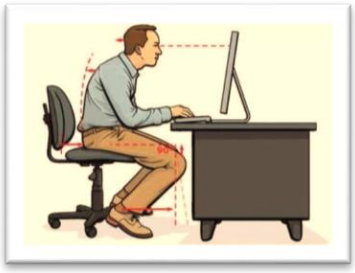
SMART SEAT

THEME: Campus & Workspace.

INTRODUCTION

Millions of people spend 7-8 hours a day sitting in front of their computers and half of them suffer from joint pain caused by sitting in incorrect postures. Maintaining proper posture is a simple and effective way to keep the back healthy. Extended periods of poor posture may lead to unnecessary muscle strain and unhealthy spine stress. Over time, the anatomical characteristics of the spine can change, which may cause blood vessel and nerve constriction as well as muscle, disc, and joint troubles. These issues are important contributors to back and neck pain, as well as numerous other ailments such as headaches, fatigue, and breathing problems. Sitting for long hours in a bad posture is harmful not just to your spine but can also cause more problems than just posture-related issues, it can also weaken your eyesight. The proposed solution is basically a posture detection system which will provide feedback and analytics to the user via graphical interface.



PROBLEM STATEMENT

- Long sitting hours in the workplace leads to high blood pressure and elevated cholesterol which can increase the risk of cardiovascular complications also many other health disorders.
- Bad posture when repetitive, results in increased stress level and also imbalances the Spinal Structure.
- Weak eyes due to wrong posture as well as continuously working on machines.

SOLUTION

- A smart solution which is capable of detecting the presence of a person.
- Intelligent Chair that helps to detect an individual's sitting posture and send an alert to improve their sitting posture.
- Alerts the individual to leave the chair in case of long sitting behavior.
- The distance of the head to the monitor is inferred from the distance reported by the sensor.
- This solution monitors individual's posture during computer usage to provide user feedback and analytics, and support mindfulness and physical health.

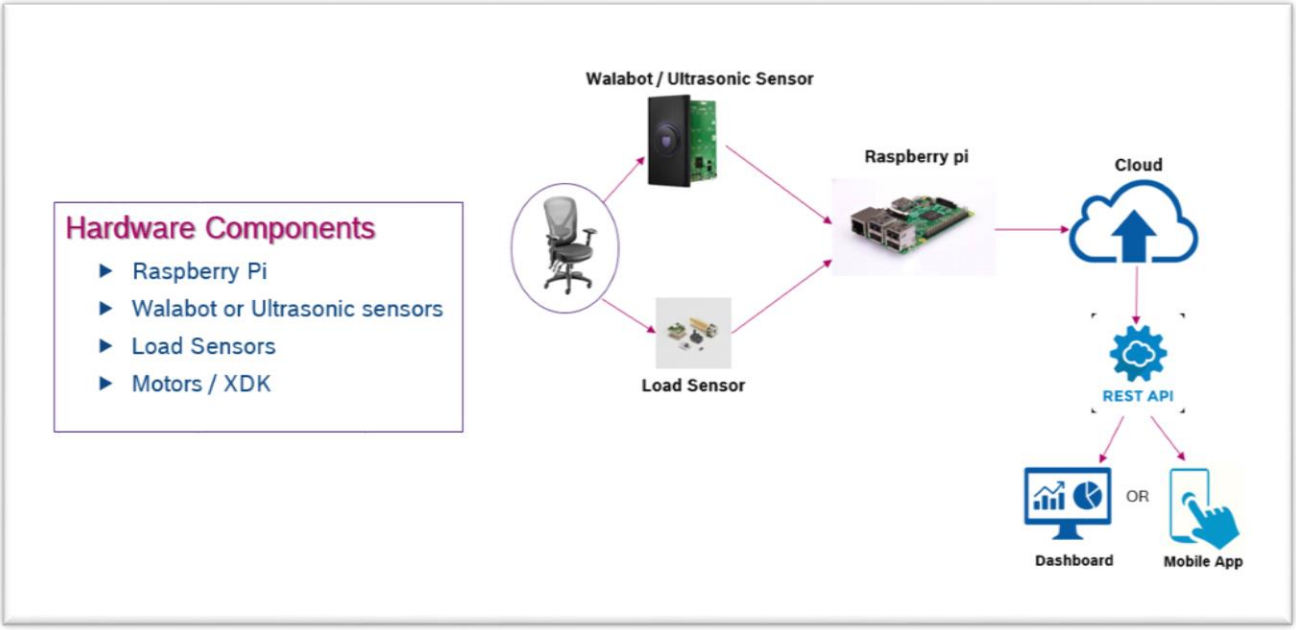
SOLUTION APPROACH

- Pressure sensors are placed on the pressure points of the chair.
- Sensor send back the data to gateway.
- From the gateway device aggregated Information is sent to a server running on cloud where all the data processing is done.
- Based on the data obtained the user will be notified about his/her posture through a web/mobile app.
- Also user will be able to view the 3D model of his/her posture.

USE-CASES

- Prevent neck and back pain by monitoring the sitting posture
- Alerts and helps the person to avoid bad posture
- Predict health issues if continued with same posture
- Data generated Helps doctor in diagnostics of patients

ARCHITECTURE



TEAM MEMBERS

No	Name	Email ID	Dept.
1	Vishwakarma Sachin Shivprakash	SachinShivprakash.Vishwakarma@in.bosch.com	RBEI/BSP4
2	Ranjitha Ishwar Shervegar	IshwarShervegar.Ranjitha2@in.bosch.com	RBEI/BSP4
3	Pai Bellare Shalini	BellareShalini.Pai@in.bosch.com	RBEI/BSP4
4	Akshatha Venugopal	Venugopal.Akshatha@in.bosch.com	RBEI/BSP4
5	Nayak Sudhindra	Sudhindra.Nayak@in.bosch.com	RBEI/BSP4