**Posture Checker Report**

**Dawson College - Electrical Engineering Technology Department**

**Introduction to Internet of Things - PBL Project**

**Team Members:**

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**1. Project Description**

The *Posture Checker* is an IoT-based solution that detects wether or not your posture is correct. Serving as a reminder to users how to properly sit on a chair. It helps you check your head and back position by using an ultrasonic sensor. All kind of users can use this product thanks to the wide range of outputs used, including light and sound alarms to alert any signs of a bad posture.

**Problem Solved**

Bad posture can lead to long-term health issues, such as back pain and spinal discomfort. This device provides real-time feedback to correct posture before it leads to chronic problems.

**Final Assembly Diagram**

(*Insert your assembly diagram here. You can use Fritzing or draw a clean diagram of your setup.*)

**2. Circuit Diagram**

(*Insert your clear, labeled circuit diagram here, with proper identification of all components and connections.*)

**Inputs:**

* Ultrasonic Distance Sensor (HC-SR04)
* Push Button

**Outputs:**

* LED (Warning Indicator)
* Buzzer (Alert Sound)

**3. Code Documentation**

**Main Structure**

The code is structured to:

1. Continuously measure the distance between the user and the sensor.
2. Check if the measured distance indicates bad posture.
3. Trigger visual (LED) and auditory (buzzer) alerts if bad posture is detected.
4. Allow the user to silence the alarm using a button.

**Function Descriptions:**

* checkDistance(): Measures the distance in centimeters using the HC-SR04 sensor.
* triggerAlert(bool alert): Activates or deactivates the LED and buzzer based on posture status.
* handleButton(bool badPosture): Monitors the button state to silence the alarm if bad posture is detected.

**4. Ethics, Privacy, or Security Disclaimer**

This project does not collect or store personal data. Its sole purpose is to provide real-time feedback to the user regarding posture correction. The system is closed-loop and only interacts locally with the user, ensuring privacy and security.

**5. References**

1. Elegoo Starter Kit Documentation
2. NewPing Library Documentation
3. Arduino Reference Guide
4. (*Add any additional sources you referenced during development*)

**6. GitHub Repository**

[Editing PBL-/PBL - posture checker.docx at main · St4anza99/PBL-](https://github.com/St4anza99/PBL-)

**7. Demonstration Preparation**

During the demonstration, both team members should be ready to:

* Explain the purpose and setup of the *Posture Checker*
* Walk through the circuit diagram and its components
* Demonstrate how bad posture triggers alerts
* Show how the button silences the alarm
* Answer questions about code logic and hardware configuration

(*Prepare a brief script if necessary to ensure smooth delivery*)

Prepared by: Kaeo Kloss and [Partner's Name]  
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