

AI-Driven Mental Health Assessment Tool

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This project aims to develop a web-based platform to assess the mental health of tech industry employees through AI-driven analysis of survey responses. The tool will offer insights into employee well-being, providing an early warning system for potential mental health concerns. By offering a dashboard for HR professionals, the platform enables data-driven decisions for proactive mental health support within organizations. Secure handling of survey data ensures anonymity and confidentiality, promoting trust and widespread adoption among employees.

AI, mental health, tech industry, employee well-being, data privacy, dashboard, web-based platform

I. INTRODUCTION

The tech industry is known for its high-pressure environment, often resulting in mental health challenges among employees. Early identification and support can significantly improve well-being and productivity. However, many companies lack the tools for consistent, confidential mental health assessments. This project addresses this gap by offering a scalable, AI-driven solution.

Tech professionals often face long hours, tight deadlines, and high-stakes projects, leading to burnout and stress-related issues. Without proper mechanisms to monitor and manage employee mental health, companies risk high turnover rates, reduced productivity, and costly healthcare expenses. The client (LG) seeks a system that can help HR departments identify potential issues before they escalate.

There are existing platforms like Headspace and Calm focused on mental well-being, but few solutions offer specific, ongoing mental health monitoring tailored for the tech industry. Additionally, most tools lack integration with company data or actionable insights for HR professionals. Our solution fills this gap by providing continuous, anonymous assessments and actionable data.

II. REQUIREMENTS

A. Functional Requirements

The Anonymous Survey Platform will enable employees to complete mental health surveys in a confidential manner through a user-friendly interface. This ensures that employees can share their mental health status without fear of being

identified, encouraging honest and open responses. The AI Analysis of Survey Data will play a key role in the system, as it will process the survey responses and analyze them for patterns that may indicate potential mental health concerns, such as stress, burnout, or anxiety. This AI-driven analysis will help detect issues early and offer a proactive approach to mental health management.

To provide organizational insights, the system will feature a Dashboard for HR Professionals, which will aggregate the anonymous survey data and present it in a way that highlights key trends related to the mental well-being of the workforce. This dashboard will be equipped with Data Visualization tools, including graphs, charts, and heat maps, that will help HR teams and managers identify potential risk areas and make informed decisions about employee support. Additionally, the system will facilitate Periodic Assessments by scheduling regular surveys, allowing companies to track changes in employee mental health over time. This ongoing monitoring will enable HR professionals to maintain a continuous understanding of workforce well-being and respond appropriately to any emerging concerns.

B. Non-functional Requirements

The platform will ensure Data Security and Privacy by using encryption to securely store and handle employee data. This will protect the anonymity and confidentiality of users, preventing unauthorized access to sensitive information. Employees can trust that their personal data remains safe, encouraging honest participation in the surveys.

In terms of Scalability, the system will support a large number of users without performance issues, allowing it to function efficiently even as the user base grows. The platform will also be fully Accessible across desktops.

III. DESIGN

The platform will be built using a three-tier system architecture to ensure efficiency and scalability. The first layer is the Frontend, which provides a web-based interface for employees to take surveys and for HR professionals to access insights. This interface will be designed to be user-friendly and intuitive, promoting ease of use. The second layer is the Backend, which houses the AI engine responsible for analyzing the survey data and identifying patterns related to mental health concerns. This AI-driven analysis is key to

detecting trends such as stress or burnout. The final layer is the Database, a secure storage system that holds both the raw survey responses and the AI-generated insights, ensuring data is managed safely and confidentially.

For the User Interface, the employee-facing side will be minimalistic, emphasizing simplicity to ensure that employees can easily complete surveys without unnecessary distractions. On the other hand, the HR dashboard will provide rich data visualizations, including graphs, charts, and filters, allowing HR professionals to explore the insights in detail. It will also offer export options for reporting and analysis, making it a powerful tool for understanding and managing employee mental health.

IV. IMPLEMENTATION AND INTEGRATION

The platform will be built using Python for AI analysis, ASP.NET Core for the restful web API, and JavaScript / Typescript with a simple framework for the frontend.

V. CONCLUSION

This project provides a critical tool for organizations in the tech industry to assess and monitor their employees' mental health proactively. With AI-driven insights, HR professionals can make data-informed decisions, fostering a healthier, more supportive workplace environment.