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LAB05 - Activity 01 - 20.02.2025 - Update Your Problem Statement

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Course:

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Problem Statement

Respiratory diseases such as chronic obstructive pulmonary disease (COPD), asthma, and post-COVID-19 complications pose a significant global health burden. According to the World Health Organization (WHO), COPD alone caused 3.23 million deaths in 2019, making it the third leading cause of mortality worldwide (WHO, 2022). Despite the increasing demand for continuous respiratory monitoring, many patients lack access to specialized care, particularly in underserved regions (Global Burden of Disease Study, 2020). Additionally, adherence to respiratory therapy remains low, with studies indicating that only 50% of patients follow prescribed treatments consistently (American Lung Association, 2023).

Existing solutions, such as spirometers and traditional in-clinic respiratory therapy, are often expensive, require professional supervision, and lack real-time adaptability. Mobile applications for breathing exercises exist but fail to integrate AI-driven monitoring, cloud-based data storage, and interactive therapy guidance, limiting their effectiveness.

To address this, we propose a mobile application for pulmonary health management that integrates AI-based respiratory analysis, real-time therapy guidance, and cloud-based patient records. This app will enable users to monitor lung function, receive personalized therapy recommendations, and track health trends over time. By leveraging machine learning algorithms, the system will detect potential respiratory anomalies and provide early warnings, ultimately improving patient outcomes and reducing hospitalizations.

References (APA Format):

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