3.7 Conclusion of Chapter 3 This chapter has presented a comprehensive analysis of the problem domain, the methodological framework, and the system requirements that together form the foundation for the design and implementation of the Intelligent Waste Sorting Assistant.Non functional requirements – usability, reliability, maintainability, performance, and design constraints – were specified in detail, mandating a client side web architecture using JavaScript, TensorFlow.js, and Supabase, with no image uploads and offline classification capability.The analysis began with a Fishbone diagram, which systematically decomposed the multifaceted causes of inefficient waste sorting into four thematic categories: People, Methods, Materials/Equipment, and Environment.Quantitative data on sorting accuracy will be gathered through pre and post intervention measurements, while qualitative insights from interviews, observation, and focus groups informed user centered design decisions.

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