

# Hospital Management System Based on a Multi-Agent Architecture

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## Abstract

The Colonoscopy Hospital Scheduling and Recommendation (COLHSAR) system is a sophisticated framework designed to improve the management of medical procedures and patient care in hospital settings. This paper elucidates the architecture, functionality and interconnectivity of the agents within the COLHSAR system, emphasizing their role in optimizing resource utilization, improving patient scheduling and providing personalized medical recommendations. Through a detailed examination of each agent's responsibilities and interactions, this study illustrates how COLHSAR integrates various components such as patient management, resource allocation, specialist coordination, and data processing to streamline hospital operations and improve healthcare delivery. In addition, this paper discusses the importance of collaboration and synergy between agents in achieving the system's goals, including efficient scheduling of procedures, timely medical interventions, and tailored patient care. By elucidating the intricate workings of the COLHSAR system, this research contributes to a deeper understanding of its functionality and potential impact on healthcare management and patient outcomes.

**Keywords:** Multi-agent architecture; Hospital management system: scheduling; Patients

