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CAPSTONE PROJECT

KNOWLEDGE MANAGEMENT SYSTEM

Stakeholder Needs, Problem Statement, and Creative Solutions in ICT

1.Stakeholder Identification and Needs Analysis

The proposed Knowledge Management System (KMS) addresses challenges faced in organizational environments where information sharing, collaboration, and knowledge retention are critical. Modern enterprises-especially IT and software companies—are knowledge-intensive organizations where project documentation, updates, and communication determine success. However, many organizations struggle with fragmented knowledge storage, inefficient collaboration tools, and lack of structured updates. Below, we analyze the primary stakeholders and their needs.

- **Employees (End-Users):**
  Employees are the backbone of project execution. They generate daily reports, upload files, create documentation, and interact with different project components. Their needs include:

  - A centralized system to store and access project-related files.
  - Tools to ask context-based questions from previous documentation.
  - Easy methods to log project updates for future reference.
  - A platform that allows quick learning for new employees who join mid-project.

Human Resource (HR) Managers and Project Managers:

Managers oversee performance, track progress, and ensure transparency. Their needs include:

- Dashboards to monitor employee activities, file uploads, and project progress.
- Feedback systems for two-way communication with employees.
- Tools to assess project continuity when employees leave or are replaced.

anizations (Businesses as a whole):

From an organizational perspective, businesses need systems that:

- Prevent knowledge loss when employees leave.
- Improve efficiency in project handovers.
- Integrate AI/ML features to enhance decision-making through data-driven insights.
- Ensure security and compliance while storing sensitive data.

Clients / External Stakeholders:

Clients rely on accurate project status updates and trust the company's ability to manage information securely. Their needs include:

- Reliable documentation of work progress.
- Assurance that sensitive data is handled securely.
- Transparent communication about incident handling, project updates, and outcomes.

2. Problem Statement

Organizations often face critical knowledge gaps when employees leave or transition projects. Currently, project knowledge is fragmented across multiple documents, communication channels, and individuals' personal memory. This leads to inefficiencies, repeated mistakes, and delayed onboarding of new employees. The problem can be stated as:

"Enterprises lack a centralized, intelligent knowledge management solution that securely captures, organizes, and retrieves project knowledge for improved continuity, collaboration, and efficiency."

3. Ideation of Solutions

To address the stakeholder needs and problem, the following solutions are proposed:

1. Self hosted-Powered Knowledge Repository:

- Implement an AI-driven document embedding and semantic search engine using FAISS.
- Enables employees to 'chat with project documents' for context-aware insights.
- Justification: Reduces onboarding time and improves retrieval of critical knowledge.

2. Automated Competitor Insights Dashboard:

- Uses LinkedIn automation and Selenium to track competitor activities and engagement.
- Provides visual dashboards for HR and management to stay updated.
- Justification: Aligns company strategy with market trends.

3. Llama Model Trained Blog Generator for Incident Reporting and Branding:

- Automates incident-to-blog transformation using llama models.
- Improves documentation culture while maintaining SEO-ready reports.
- Justification: Ensures transparency and shared learning within the organization.

4. Relevance to ICT Domain

The proposed KMS aligns with emerging ICT trends and technologies such as:

- Artificial Intelligence (AI) & Machine Learning: Used in semantic search, Llama chatbots, and automated blogging.
- Cloud and Edge Computing: Ensures scalable, secure, and real-time access to project data.
- IoT/Automation Tools: Integration of LinkedIn competitor insights automation improves strategic intelligence gathering.

Impact on ICT Domain:

- Improves efficiency by reducing manual search and onboarding time.
- Enhances security with role-based access and encrypted storage.
- Elevates user experience by enabling employees to query knowledge naturally through model.

Conclusion:

This project demonstrates the pressing need for a Knowledge Management System tailored for modern organizations. By integrating AI-driven Q&A, automated competitor insights, feedback systems, and structured updates, the proposed solution ensures that no knowledge is lost, employee productivity is enhanced, and managers gain real-time visibility.

The impact extends across the ICT domain—merging AI, automation, security, and communication technologies to redefine how organizations capture, share, and leverage knowledge. Ultimately, this system bridges the gap between knowledge creation and knowledge utilization, empowering businesses to remain agile, competitive, and future-ready.