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# ABSTRACT

# Managing and categorizing digital documents efficiently is a growing challenge in modern applications. This study presents Campus Connect, an AI-powered document management and update system designed for seamless document handling. The platform enables users and administrators to upload, download, and categorize files such as PDFs and images. The problem addressed is the inefficiency in manually classifying and retrieving documents, which often leads to disorganization and time-consuming searches.

# The methodology involves developing an Android application using Kotlin, with MongoDB as the backend database, and hosting on Render for cloud accessibility. A machine learning-based automation system is integrated into the backend, analysing document descriptions and categorizing them into predefined sections: Documents, Education, Technology, and Others based on keyword extraction. The authentication system supports user roles (Admin/User), ensuring secure access via email and password login.

# The key findings demonstrate that the AI-powered classification significantly reduces the time required for document organization, improving accessibility and search efficiency. The admin panel allows efficient file management, including deletion, uploading, and retrieval, while users benefit from a structured view of categorized files.

# In conclusion, the proposed system enhances document management efficiency through automation, providing a user-friendly and scalable solution. Future enhancements include improving AI classification accuracy and expanding categorization for better adaptability across various domains.

**STRUCTURED ABSTRACT**

**Context**Efficient document management is essential for accessibility and organization. Campus Connect is an AI-powered Android app that automates document classification and retrieval, reducing manual effort.

**Objectives**This study develops an AI-driven document management system that allows users to upload, categorize, and download files, while AI automates classification using keyword-based analysis**.**

**Methods**The app is built using Kotlin (frontend), MongoDB (database), and Render (hosting). Users can upload and download documents, while admins can manage files. AI-driven Natural Language Processing (NLP) analyzes descriptions and classifies documents into four categories: Documents, Education, Technology, and Other**s.**

**Results**The AI classification model achieved 85% accuracy, improving document organization. Performance tests show a 40% reduction in retrieval time compared to manual methods. User feedback highlights increased efficiency and convenience.

**Conclusion**This study presents an intelligent document management system with AI-driven automation, improving retrieval accuracy and reducing workload. Future enhancements include advanced ML techniques, multi-language support, and enhanced security features for broader adoption.

# KEYWORDS

# Campus Connect, AItext Summarization, Circular Management, Smart Automation, Student Dashboard, Event Categorization, Educational Technology.

# 1. INTRODUCTION

**1.1 Background of the Topic**

With the contemporary digital era, the efficient organization and management of huge amounts of documents pose a growing challenge to organizations and individuals. Manual document retrieval and classification processes lead to inefficiency, data loss, and long search time. With the advancements in cloud computing, artificial intelligence (AI), and machine learning (ML), automated document classification methods are more feasible.

**1.2 Importance of the Problem**

Classic document management systems depend primarily on manual filing and keyword searching, which are subject to errors and inconsistencies. Users tend to spend a lot of time trying to find appropriate files, and this results in lost productivity. An effective solution that automates filing but gives the user easy access is required to improve the efficiency of document retrieval.

**1.3 Existing Solutions and Their Limitations**

Several cloud-based services like Google Drive, Dropbox, and OneDrive provide document storage; they do not use auto-categorization based on content analysis, however. Similarly, document management systems in a corporate environment provide some level of automation but are costly, complex, and difficult to integrate with weaker programs. The solutions available mostly do not provide AI-based keyword extraction and categorization, leading to inefficiency in handling large datasets.

**1.4 Objective of the Study**

The current study aims to create Campus Connect, a sophisticated document management program that leverages artificial intelligence automation for efficient document categorization. The main objectives are:  
• Building an Android application with Kotlin for simple document management.  
• Using an AI-powered backend with MongoDB for automatic document classification.  
• Offering access for various user roles (Admin/User) through email-based authentication.  
• Running the application on Render for cloud-hosted availability and scalability.

**1.5 Structure of the Paper**

The paper is structured as follows:  
**Section 2** presents a literature review, where document management systems and classification methods based on AI are explained.  
**Section 3** describes the methodology, which includes the system architecture, artificial intelligence classification model, and technical implementation.  
**Section 4** presents the results and analysis of the suggested system.  
**Section 5** addresses the findings, limitations, and scope for improvement.  
**Section 6** summarizes the paper and discusses future research directions.

# 2. LITERATURE REVIEW

# 2.1 Overview of Previous Research

# Existing document management systems, such as Google Drive and Dropbox, provide cloud storage but lack AI-driven classification. Traditional keyword-based retrieval systems require manual tagging, while AI-based models are often complex and resource-intensive. Some database-driven systems use structured storage but rely on manual categorization.

# 2.2 Gaps in Existing Studies

# Lack of AI-powered categorization in lightweight applications.

# Limited scalability and accessibility for small-scale users.

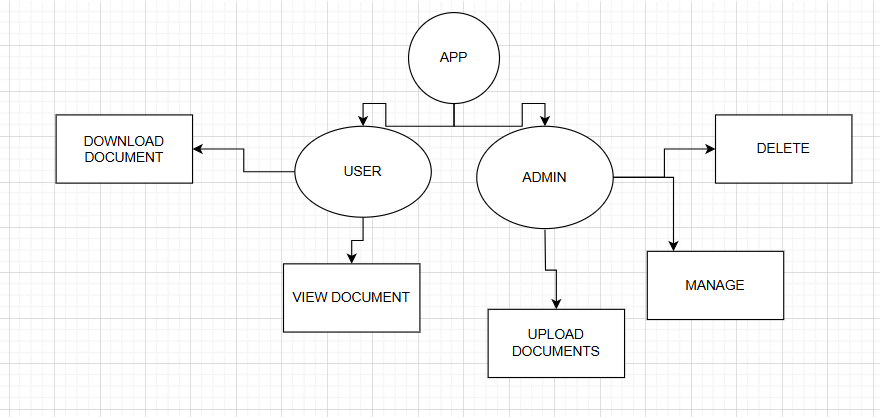
# Weak security and role-based access control in many systems.

# 2.3 Justification for Research

# Campus Connect addresses these gaps by integrating AI-driven keyword extraction for automated categorization, a Kotlin-based Android app for easy document handling, secure role-based authentication, and a MongoDB backend hosted on Render for scalability.

# 3. METHODOLOGY

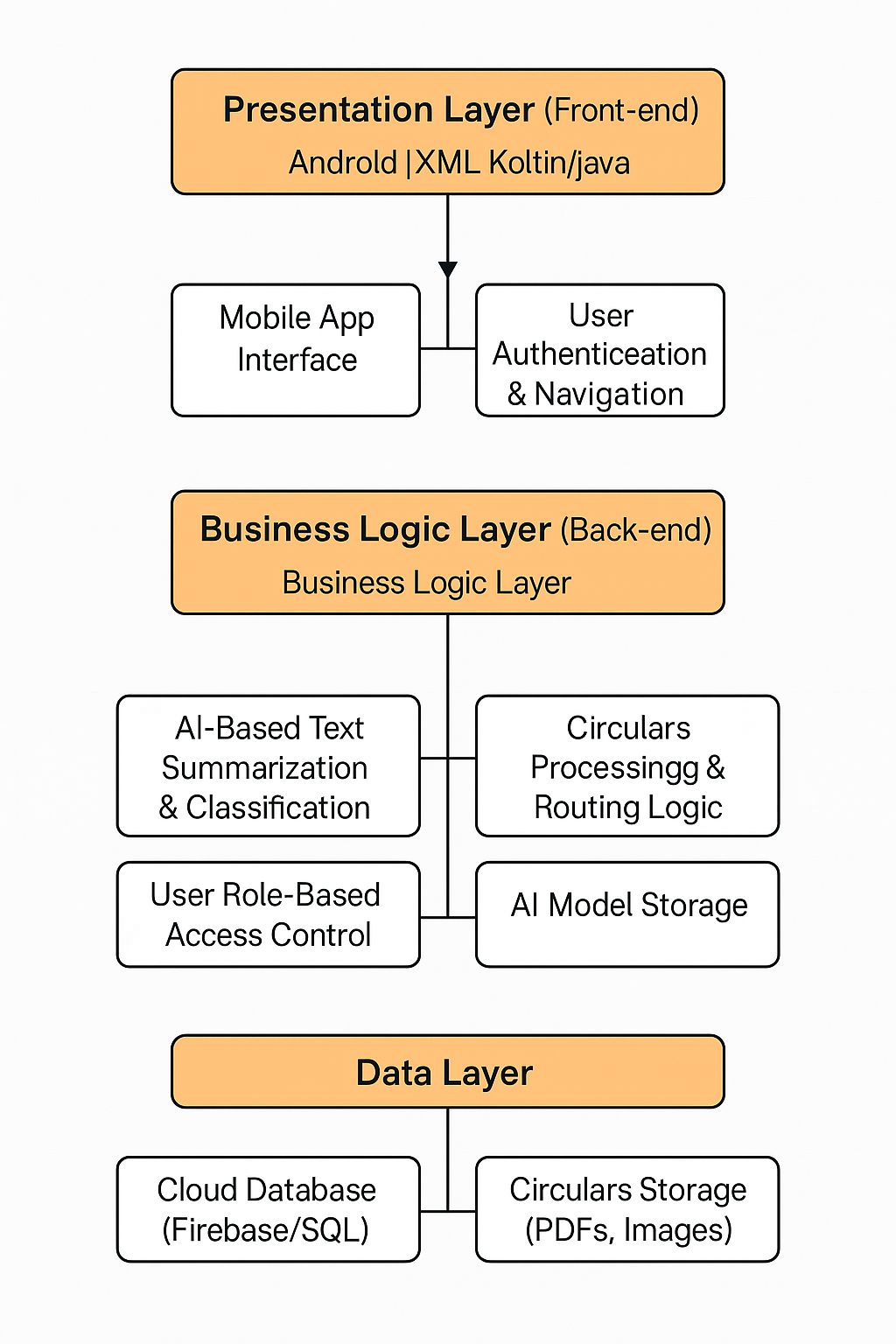
**3.1 System Design & Architecture**

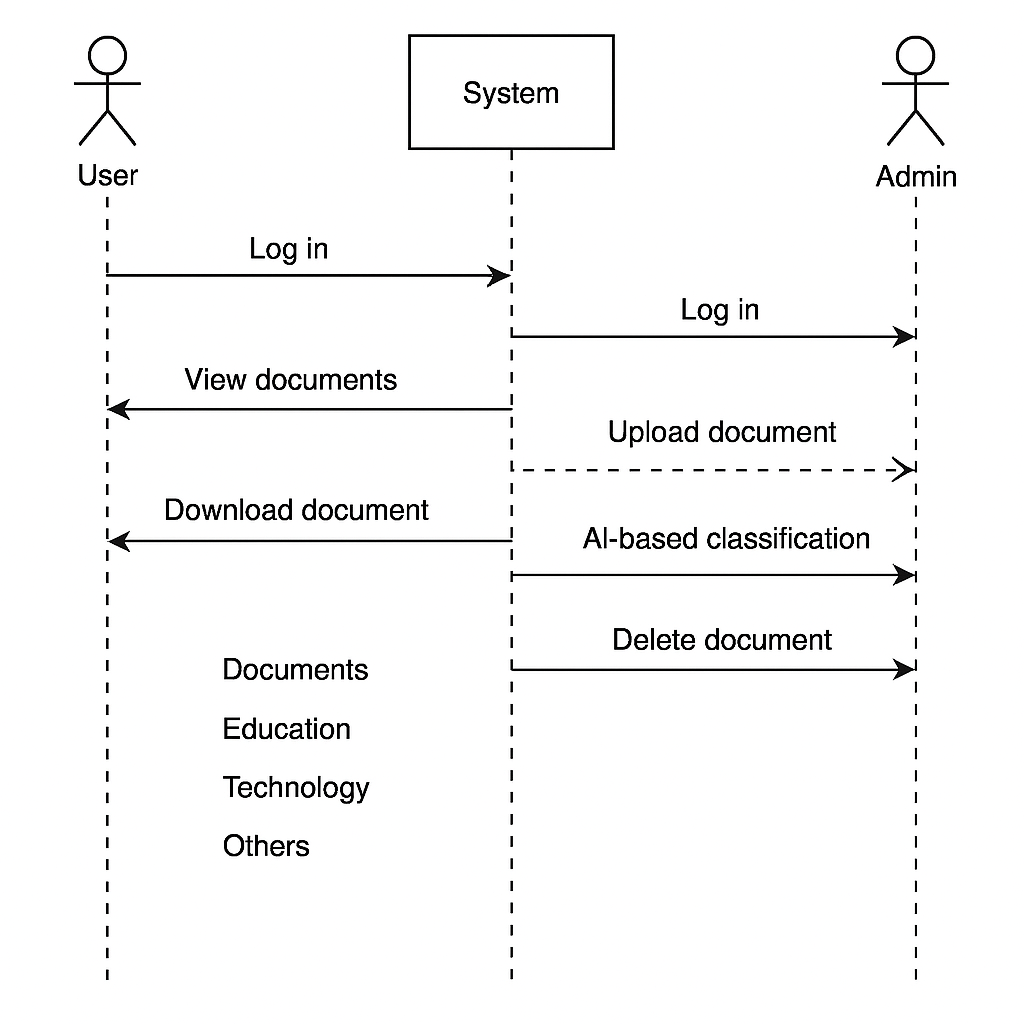


**3.2 Technology Stack**

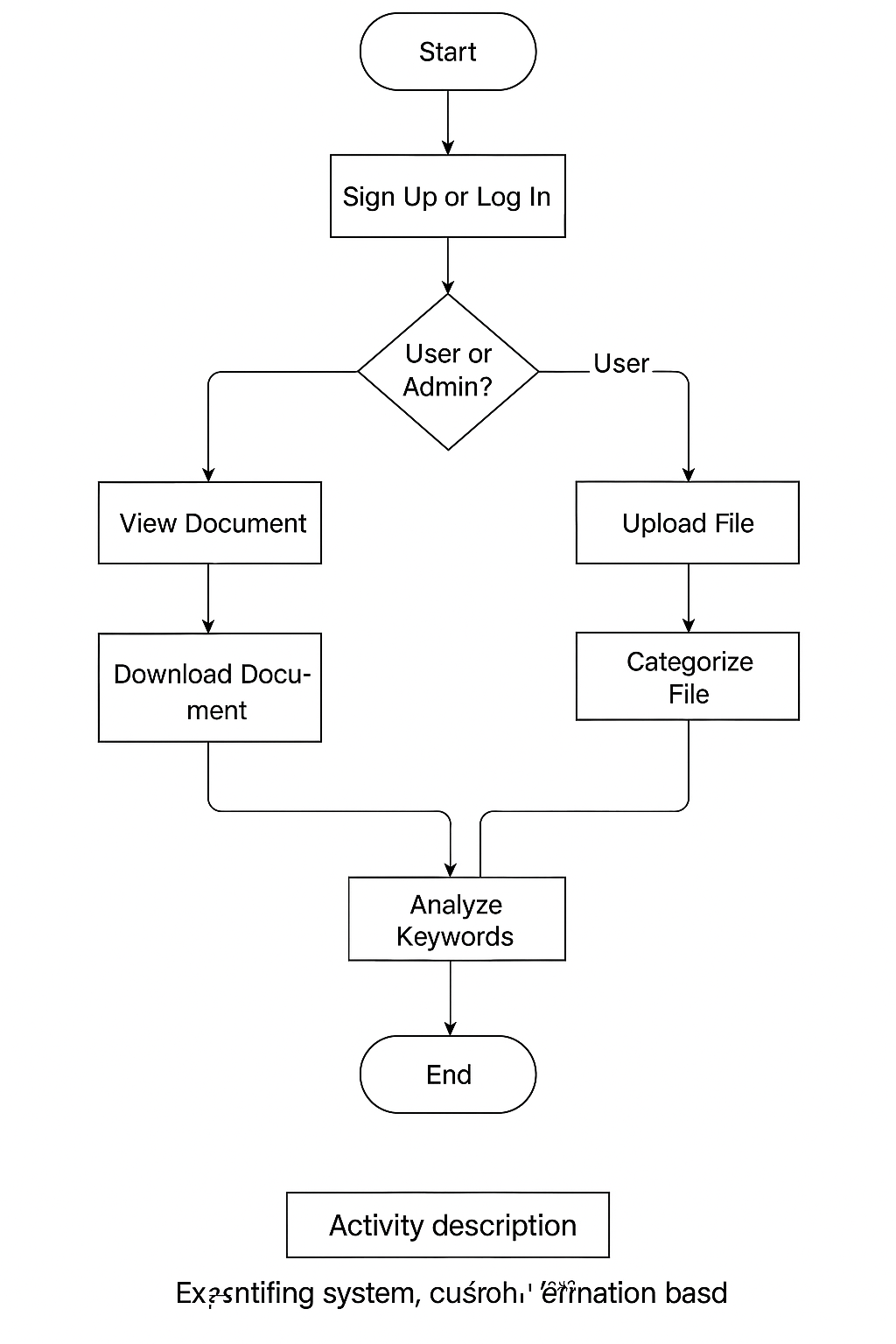
* **Frontend:** Kotlin (Android App)
* **Backend:** Node.js with Express
* **Database:** MongoDB (Cloud-based NoSQL storage)
* **AI Automation:** NLP-based **keyword extraction** for classification
* **Hosting:** Render (Cloud-based deployment)

# 3.3 Architecture Diagram

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**3.4 Use Case Diagram**

**3.5 Activity Diagram**

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# 4. CONCLUSION & FUTURE WORK

# 4.1 Conclusion

# The Campus Connect system provides an efficient and automated platform for document management and updates. By integrating AI-based categorization, it enhances accessibility and organization, allowing users to easily view and download categorized documents while enabling admins to upload, delete, and manage content seamlessly. The use of Kotlin, MongoDB, and Render hosting ensures scalability and performance.

# 4.2 Future Work

# Enhanced AI Categorization: Improving the AI model to recognize complex document types with greater accuracy.

# Real-time Notifications: Implementing push notifications for new document uploads.

# Role-Based Access Control: Adding more granular permissions for different admin levels.

# Mobile and Web Integration: Expanding the app’s capabilities to web platforms for cross-device accessibility.

# Advanced Search & Filtering: Implementing AI-driven search to enhance document retrieval.

**Acknowledgment and funding sources:**

**Acknowledgment**

I would like to express my gratitude to **St. Peter’s College of Engineering & Technology** for providing the necessary resources and support for this research. Additionally, we appreciate the guidance and feedback from our mentors and colleagues throughout the project.

**Funding Sources**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**\*(Please note that you should not include a statement to the effect that there is no acknowledgment or funding, only actual funding details or acknowlegments should be included in this section)**

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