SCHOOL OF TECHNOLOGY

BACHELOR OF SCIENCE IN INFORMATION SECURITY AND FORENSICS

UNIT: BISF 3500

FINAL YEAR PROJECT

TITLE: IT PROJECT TRACKING PLATFORM FOR ACADEMIC SUPERVISORS

(PROJECT PROPOSAL)

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THIS PROJECT PROPOSAL IS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE IN INFORMATION SECURITY AND FORENSICS AT KCA UNIVERSITY.

DECLARATION

I hereby declare that this project and its documentation titled "IT Project Tracking Platform for Academic Supervisors" was prepared by me, Nkatha Joseph Munyira (Registration No: 21/06643), under the guidance of my university supervisor, Mr. Joseph Kuria. This document is submitted in partial fulfillment of the requirements for the award of a Bachelor of Science degree in Information Security and Forensics at KCA University.

I certify that this documentation is based on the work carried out by me and has not been submitted elsewhere for the award of any degree.

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BACKGROUND

In the current educational landscape, the effective management of student projects in Information Technology (IT) related programs is critical for preparing students for real-world challenges. Academic institutions are tasked with nurturing technical skills and fostering collaboration among students through project-based learning. As part of their academic curriculum, students undertake various IT-related projects that require supervision, guidance, and assessment by academic staff.

Students in these institutions engage in numerous projects aimed at developing their technical abilities, critical thinking, and problem-solving skills. Currently, academic supervisors are responsible for overseeing multiple student projects, ensuring that students adhere to guidelines, and providing timely feedback throughout the project lifecycle.

The operations related to project supervision are primarily conducted through existing Learning Management Systems (LMS), such as Moodle. While these platforms facilitate course content delivery and assignment submissions, they fall short in providing the specialized tools needed for comprehensive project tracking and management. This reliance on LMS for project supervision leads to several challenges, including:

- **Lack of Centralized Dashboard for Oversight:** Supervisors struggle to maintain a comprehensive view of multiple projects, making it difficult to monitor progress and identify potential issues.
- **Ineffective Communication:** Current communication methods through LMS can result in delayed feedback and miscommunication, hindering student progress.
- **Difficulty in Tracking Progress:** Without dedicated tracking systems, supervisors find it challenging to monitor the various stages of student projects, leading to missed deadlines and incomplete submissions.
- **Inconsistent Feedback:** The absence of structured feedback mechanisms limits the ability of supervisors to provide timely and actionable insights, ultimately affecting the quality of student deliverables.

The proposed solution aims to provide a centralized system that enhances project management, improves communication, and ensures that students receive the guidance and support they need to succeed in their projects.

PROBLEM STATEMENT

The management and supervision of student projects in Information Technology-related programs present significant challenges for academic staff. Current methods of tracking student projects, primarily through Learning Management Systems (LMS) like Moodle, rely on assignment submissions, which often lead to several inefficiencies, including:

1. **Lack of Centralized Oversight:** Supervisors struggle to maintain a comprehensive view of multiple projects, making it difficult to monitor progress and identify potential issues early.
2. **Ineffective Communication:** Relying on LMS for communication, particularly for feedback and recommendations, can lead to miscommunication and delayed responses, impacting students' ability to receive timely guidance.
3. **Difficulty in Tracking Progress:** Without a dedicated system for project tracking, supervisors find it challenging to monitor various stages of student projects, resulting in missed deadlines and incomplete submissions.
4. **Inconsistent Feedback:** The absence of a structured feedback mechanism hampers supervisors' ability to provide consistent and actionable feedback, which is crucial for student improvement and project quality.

These challenges hinder the effectiveness of project supervision, negatively impacting student learning experiences and outcomes. The proposed **IT Project Tracking Platform for Academic Supervisors** seeks to resolve these issues by providing a robust, centralized tool that facilitates real-time tracking, enhances feedback and recommendations, and improves project documentation.

PROPOSED SOLUTION

The **IT Project Tracking Platform for Academic Supervisors** is designed to enhance the management, tracking, and evaluation of student projects in Information Technology-related programs. This centralized web application addresses inefficiencies identified in current supervision methods by providing several key features:

1. **Centralized Dashboard:** A user-friendly interface that allows academic supervisors to view and manage all student projects in one place, facilitating timely monitoring of project progress and deadlines.
2. **Real-Time Progress Tracking:** Supervisors can access real-time updates from students regarding their project stages, enabling early identification of potential issues and timely interventions.
3. **Enhanced Communication Tools:** Integrated messaging and notification systems will facilitate seamless communication between supervisors and students, ensuring prompt feedback and guidance.
4. **Structured Feedback Mechanism:** A built-in feedback system will allow supervisors to provide consistent and actionable feedback on project submissions, promoting continuous improvement.
5. **Document Management:** Students can upload project documentation, reports, and presentations, all stored in a centralized location, ensuring easy access and organization.
6. **Milestone Management:** Supervisors can set project milestones and deadlines, sending automated reminders to students to help them stay on track.
7. **Performance Analytics:** The platform will include analytics tools that track student performance trends and project completion rates, providing supervisors with valuable insights into the effectiveness of the supervision process.

By implementing this comprehensive platform, academic institutions will improve the efficiency of project supervision, enhance the quality of student projects, and foster a more supportive learning environment.

OBJECTIVES

1. **Main Objective:**

   To develop a comprehensive IT Project Tracking Platform that enhances the management, tracking, and evaluation of student projects in Information Technology-related programs, thereby improving the efficiency of project supervision and supporting student success.

2. System Objectives:
   - **Centralized Dashboard:** To create a centralized dashboard that allows academic supervisors to view and manage all student projects, achieving real-time updates on project statuses.
   - **Structured Feedback Mechanism:** To implement a structured feedback system that enables supervisors to provide timely and actionable feedback on project submissions.
   - **Communication Tools:** To integrate messaging and notification features that facilitate seamless communication between supervisors and students.
3. Other Objectives:
   - **Document Management:** To enable students to upload and manage project documentation with version control, ensuring that all relevant materials are accessible and organized.
   - **Performance Analytics:** To incorporate analytics tools that track student performance trends and project completion rates, providing supervisors with actionable insights and reports.
   - **Milestone Management:** To facilitate the setting of project milestones and automated reminders, helping students meet their deadlines.

LITERATURE REVIEW

The management of student projects is a critical component of higher education, particularly in Information Technology (IT)-related programs, where students are expected to demonstrate their skills through comprehensive project work. Various project management systems have been developed to facilitate supervision, but many of these tools, particularly manual systems, fall short in addressing the needs of academic supervisors and students.

At KCA University's School of Technology student projects are managed through a combination of manual processes and Learning Management Systems (LMS) like Moodle. While Moodle and similar platforms such as Blackboard (Bremer & Bryant, 2005) offer basic project tracking features, they are not equipped to handle the complexity of IT-related project supervision. Supervisors at KCAU also rely on fragmented tools like WhatsApp, email, and Google Sheets, which complicate the project management process and often lead to communication breakdowns.

Other institutions, such as Akanu Ibiam Federal Polytechnic Unwana, have implemented systems like the Web-Based Student Project Management System (WSPMS). This system, as described by Bakar et al. (2011), supports functionalities such as project allocation, task management, and online file sharing. However, WSPMS also falls short in providing real-time feedback, performance analytics, and enhanced communication tools (WSPMS, 2021). These limitations result in inefficient project tracking and delayed guidance for students, much like the manual methods used at KCAU.

Furthermore, Safieddine (2015) highlights the importance of final year projects as key demonstrations of students' ability to integrate knowledge across courses. Yet, without efficient supervision tools, academic institutions struggle to provide timely, structured feedback that supports students' development. This gap is further reinforced by systems like Moodle, which lack the specialized tools necessary for managing complex IT projects (Johnson, 2022).

The proposed KCAU SOT Projects Tracking System addresses these shortcomings by providing a centralized, real-time platform that enhances project supervision through integrated feedback mechanisms, performance analytics, and communication tools. Unlike WSPMS and other existing systems, our proposed platform will allow supervisors to comment directly on

documents, offer real-time feedback, and track student performance trends, thereby improving the overall quality of project supervision at KCAU.

METHODOLOGY

Research Methodology

The research methodology outlines the approach to gathering data necessary for developing the KCAU SOT Projects Tracking System. The data collection methods will include:

- Surveys of Students: Distributing surveys to students enrolled in IT-related programs to gather insights on their experiences with current project supervision methods and the tools they find most helpful for managing their projects.
- Observational Studies: Observing current project management practices at KCAU to identify inefficiencies and gaps in the existing systems. This may include monitoring interactions between supervisors and students and how feedback is communicated.
- Analysis of Existing Systems: Reviewing existing platforms like Moodle and the Web-Based Student Project Management System (WSPMS) to evaluate their functionalities, strengths, and limitations. This analysis will help identify specific gaps that the new system will address.

Development Methodology

For the development of the **KCAU SOT Projects Tracking System**, an **Agile** approach will be adopted, specifically using **Extreme Programming (XP)** as the framework. XP emphasizes technical excellence, customer involvement, and frequent feedback, making it ideal for projects that require high-quality software and ongoing collaboration with users.

Key steps in the XP methodology include:

1. **Planning and Design:**
   Establish the project vision by gathering requirements through user stories from academic supervisors and students. Create a simple and flexible design that evolves based on ongoing feedback.

2. **Development and Testing:**
   Implement features in short iterations (1-3 weeks) using pair programming and test-

driven development (TDD). Automated tests will ensure that each feature meets its requirements.

3. **Customer Feedback and Iteration:**
   At the end of each iteration, conduct reviews with stakeholders to gather feedback on implemented features. This allows the system to evolve according to user needs.

4. **Continuous Integration and Improvement:**
   Regularly integrate code changes and perform refactoring to enhance code quality. After deployment, continuously collect user feedback for future updates.

BUDGET AND RESOURCES

1. Development Costs:
    - Personnel Costs: Ksh 0
    - Training Costs: Minimal
2. Software and Tools:

   All software resources to be used will be open-source or free tools for development, ensuring cost-effectiveness and accessibility.
    - **Development Tools:** All open-source or free, including PHP or ASP.NET frameworks.
3. Hardware Resources:
    - Development Hardware: Ksh 0 (existing).
4. Miscellaneous Costs:
    - Marketing and Promotion: Minimal.

PROJECT SCHEDULE

The following table outlines the project schedule with the corresponding tasks, durations, and planned completion dates.

Task No.	Task Description	Planned Start	Planned Completion	Number of Days
1	Requirements Gathering (Surveys, Observations, Analysis)	Day 1	Day 20	20
2	System Design (Architecture, UI/UX Design)	Day 21	Day 40	20
3	Development: Sprint 1 (Core Features)	Day 41	Day 65	25
4	Development: Sprint 2 (Feedback and Tracking Features)	Day 66	Day 95	30
5	Development: Sprint 3 (Final Features)	Day 96	Day 125	30
6	Testing (System Testing, UAT)	Day 126	Day 150	25
Total				150

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