Draft Version: 0.0

**MAKERERE** **UNIVERSITY**

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**ACADEMIC ISSSUE TRACKING SYSTEM (AITS):**

Case Study: MAKERERE UNIVERSITY

By:

**GROUP\_S**

COLLEGE OF COMPUTING AND INFORMATION SCIENCES

SCHOOL OF COMPUTING AND INFORMATICS TECHNOLY

DEPARTMENT OF COMPUTER SCIENCE

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (Year One)

A project proposal in partial fulfilment of the requirements for the award of competence in **software development project** (CSC:1202) for **semester II** (Year One) - Academic Year

**2024:**

January 2025

# PROJECT TEAM

|  |
| --- |
| Name REG.NO Role/Responsibility |

|  |  |  |
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# **PROJECT SCHEDULE**

|  |  |
| --- | --- |
| **Week One:** (Agenda): | |
| **Project Overview**: | * Scope * Objectives * Key Deliverables * Programming Tasks: (Git/GitHub) Setup & Repositories * Project Structure (Using Django and React |
|  |  |

# **Document Change Control.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Description of changes** |
| 0.0 | 17TH January 2025 | GROUP\_S | Initial draft created |
| 1.0 | 22ND January 2025 | GROUP\_S | Revised requirements draft Updated |
| 1.1 | 25TH January 2025 | GROUP\_S | Revised structure and formatting improvements |
| 1.2 | 6TH February 2025 | GROUP\_S | Final version submitted for approval |



# **DECLARATION**

We declare that, we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission.

Signature……………………………………… Date: ….…/………/………….

Seanice Nabasirye

Signature……………………………………… Date: ….…/………/………….



Keith Paul Kato

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Jonah Akandwanaho

# **APPROVAL**

The undersigned certifies that he has read and hereby recommends for the acceptance of the Makerere University System Project entitled “Academic Issues Tracking System” **(AITS)**

Signature…………………………………………… Date: ….…/………/………….

**Dr. Peter Khisa Wakholi** **(Ph.D.)**

Department of Computer Science

Makerere University

# **ACKNOWLEDGEMENT**

We, in a special way, would like to take this opportunity to thank the almighty God that has given us life, wisdom to enabled us pursue our academic goals. Among which some have been geared towards us developing a working system (AITS) that meets the needs of our stakeholders. We still, in a special way, would like to thank our supervisor Dr. Peter Khisa Wakholi who, with continued guidance has enabled us reach satisfactory & successful completion of our project. And everybody else particularly in academia, that made any sort of contribution towards our project.

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# **Abstract**

The Academic Issue Tracking System (AITS) in this case will be a comprehensive web-based solution designed to address the challenges faced by Makerere University in managing academic record-related discrepancies, missing marks, and registration errors, which often leads to frustration among students and inefficiencies in administrative workflows. AITS aims towards streamlining and digitizing these processes, fostering transparency, accountability, and efficiency among students, lecturers, and university administrators. The system employs a full-stack web development approach using Django for back-end and react for front-end, ensuring a scalable and robust application.

AITS provides role-based access control for three primary user roles namely, students, lecturers and administrators. Students will be able to log issues through a simple interface, monitor the status of their submission, and receive real-time notifications about updates or resolutions. Lecturers are empowered to manage assigned issues, providing updates and resolutions through an intuitive dashboard. Administrators will oversee the entire process, assigning issues, tracking their resolution progress, and analyzing trends through comprehensive reports.

To ensure reliability and ease of use, our AITS will integrate features such as RESTful APIs for seamless communication between components, a PostgreSQL database for secure and efficient data management, and a cloud-based deployment for accessibility and scalability. The project adheres to software development best practices including version control, automated testing, debugging, and user-centered design principles.

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# **CHAPTER ONE**

## **Introduction**

Makerere University faces challenges in efficiently managing academic record – related issues such as grade discrepancies, missing marks, and registration errors. These issues often involve lengthy processes that are prone to miscommunication and delays.

This Academic Issues Tracking System (AITS) aims to streamline the process of reporting, tracking and resolving academic record issues, ensuring transparency and accountability among students, lecturers, and administrators.

## **Problem Statement**

At Makerere University, students frequently encounter challenges related to academic records, including missing marks, incorrect grades, and registration issues. The current process for reporting and resolving these issues is largely manual, inefficient, and somewhat lacks transparency. Students often have to physically visit offices, submit written complaints, or rely on email communication, leading to delays, miscommunication, and frustration

Lecturers and administrators, on the other hand, face difficulties in tracking and managing reported cases due to the absence of a centralized system. Without a structured workflow, some issues go unresolved, while others are duplicated or lost in the process. This lack of efficiency affects students’ academic progress and delays administrative decision-making.

To address these challenges, the Academic Issue Tracking System (AITS) will provide a centralized digital platform where students can report academic issues, lecturers can review and resolve them whereas administrators can oversee and track the progress in real time. The system will enhance transparency, accountability, and efficiency by implementing role-based access, automated notifications, and real-time status tracking, ultimately improving the academic support services at Makerere University.

## **Purpose of the System**

Through a role-based control, AITS will enable:

1. **Students** to submit and track their academic issues in real time.
2. **Lecturers** to review, manage, and update the status of assigned cases.
3. **Administrators** to oversee the resolution process, assign tasks, and generate reports for decision-making

By leveraging modern web technologies like Django (for backend development) and React (for frontend development), AITS will ensure a user-friendly interface, seamless data management and real-time notifications to keep all stake holders informed. The system will not only improve efficiency but also enhance accountability, transparency, and overall student satisfaction in academic issue resolution.

## **General Objectives**

1. To develop an intuitive web application using **Django (Backend)** and **React (Frontend).**
2. To implement role-based access for students, lecturers, and administrators
3. To enable **real-time** notifications and status tracking for reported issues.
4. To ensure system scalability, security, and efficiency

## **Specific Objectives**

1. Understanding the software development lifecycle (SDLC)
2. Designing and implementing a multi-user, role-based application.
3. Documenting and presenting technical projects effectively.

## **Scope of the Project**

### Significance and beneficiary of the project

## **Key Deliverables:**

1. A fully functioning web application with an interactive dashboard.
2. A secure **REST API** for seamless communication between **front-end** and **back-end**.
3. Comprehensive **technical documentation** and a user manual.
4. Deployment of a system on a **cloud platform** for accessibility.
5. A final project **presentation** and **demonstration**.

### Other Deliverables

## **Systems Requirements**

### Functional Requirements

### Non-Functional Requirements

## **Hardware and Software Requirements**

### Hardware Requirements

### Software Requirements

### Programming Language

# **CHAPTER TWO**

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