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**Department of Information and Communication Technology**

**Faculty of Technology**

**University of Ruhuna**

**Database Management Systems Practicum**

**ICT 1222**

**Assignment 02 – Mini Project**

**Group 03**

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**Faculty of Technology Student Information and Result Management System**

# Introduction

The Faculty of Technology Student Information and Result Management System (FOT-SIRMS) is a comprehensive software solution designed to address the specific needs of the Faculty of Technology. This project is undertaken to develop an efficient and user-friendly system that enables the faculty to manage critical aspects of student information, academic records, attendance, marks, and result management seamlessly.

# Document Purpose

The purpose of this document is to provide a clear and detailed outline of the functional and non-functional requirements of FOT-SIRMS. It serves as a reference guide for all stakeholders involved in the project, including developers, testers, administrators, and faculty members. Additionally, this document lays the foundation for effective project planning, design, development, and testing.

# Scope

The FOT-SIRMS project aims to develop a system capable of managing the following aspects:

1. **User Management**: Creation and management of user accounts with distinct privileges for Admin, Dean, Lecturer, Technical Officer, and Student roles.
2. **Data Storage**: Storage of diverse data types, including student details, marks, attendance records, course unit information, and user data.
3. **Attendance Management**: Recording and tracking student attendance for various courses, accommodating medical leaves, and generating attendance summaries.
4. **Marks Management**: Recording and calculating marks for diverse assessments, including quizzes, mid-semester exams, and final exams. It includes eligibility checks based on Continuous Assessment (CA) criteria.
5. **Result Management**: Calculation of results based on CA marks and eligibility criteria. Handling medical cases and suspending students as per faculty regulations.
6. **Grading**: Implementing a grading system in accordance with faculty by-laws.
7. **Reporting**: Generating comprehensive reports, including subject-wise marks, grades, SGPA, CGPA, and eligibility status for individual students and batches.

The project will be a Database Development Life Cycle (DDLC) process, encompassing stages of discovery, definition, development, and delivery. It will conclude in the creation of essential project documentation, including Data Requirement documents, Entity-Relationship (ER) diagrams, Relational Mapping diagrams, and more.

To provide a practical foundation for the system, data for a representative sample of students, lecturers, technical officers, and other relevant roles will be stored in the database.

The attendance-related requirements involve capturing attendance details for all subjects during Level 01 Semester 02, considering the 15-week semester duration and differentiating between theory and practical sessions. Special provisions are made for recording medical leaves, and a range of attendance views and summaries will be available.

Marks-related requirements focus on recording course unit marks, assessing CA performance, and determining eligibility for final exams.

Eligibility requirements will involve checking eligibility based on attendance and CA marks.

Finally, the system will grade students according to faculty regulations and provide various views for accessing marks, grades, SGPA, and CGPA.

Please refer to subsequent sections of this document for more detailed information about the requirements, system features, and architecture of the FOT-SIRMS.

# Brief Introduction to the Solution

# Overview

The Faculty of Technology Student Information and Result Management System (FOT-SIRMS) is a full software solution designed to address the specific needs of the Faculty of Technology. This section provides a concise overview of the solution, outlining its purpose, key features, and benefits.

# Purpose

The primary purpose of the FOT-SIRMS is to update and enhance the management of student-related data and academic records within the Faculty of Technology. By leveraging modern database technologies and user-friendly interfaces, the system aims to:

* Simplify student data management, including details, marks, attendance records, and eligibility tracking.
* Enable efficient administration of courses, course units, and faculty members.
* Automated attendance recording, including provisions for medical leaves.
* Facilitate the accurate recording and calculation of marks for various assessments.
* Implement a grading system in alignment with faculty regulations.
* Generate complete reports and views for informed decision-making.
* Ensure data security, access control, and compliance with institutional policies.

# Key Features

**User Role Based Access Control**

FOT-SIRMS incorporates a robust access control system that defines specific privileges and permissions for different user roles, including Admin, Dean, Lecturer, Technical Officer, and Student. This role-based access control ensures that users can only access, view and modify data relevant to their responsibilities.

**Efficient Data Storage**

The system provides organized storage for a wide range of data, including student details, course unit information, attendance records, marks, and user profiles. This structured data storage allows for easy retrieval and manipulation of information.

**Attendance Management**

FOT-SIRMS simplifies attendance management by enabling the recording of student attendance for all course units. It accommodates medical leaves, calculates attendance percentages, and generates summaries for both individuals and course units.

**Marks Recording and Eligibility Checks**

This system captures marks for various assessments, including quizzes, mid-semester exams, and final exams, ensuring all marks are out of 100. It calculates Continuous Assessment (CA) percentages and checks eligibility based on CA criteria.

**Result Calculation and Grading**

Our system automates the calculation of final results, taking into account CA marks and eligibility status. It adheres to faculty by-laws to assign grades to students.

**Reporting and Analysis**

The system offers a range of reporting and analysis tools, providing detailed insights into student performance, marks, grades, SGPA, and CGPA. These reports aid faculty members, administrators, and students in making informed decisions.

By implementing the FOT-SIRMS, the Faculty of Technology stands to benefit in several ways:

* Improved data accuracy and integrity.
* Enhanced efficiency in administrative processes.
* Real-time access to critical student information.
* Improved decision-making through data-driven insights.
* Simplified compliance with faculty regulations and by-laws.
* Enhanced user experience and satisfaction.

This provides an overview of the FOT-SIRMS solution's purpose, key features, and anticipated benefits.

# Contribution

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