

UNIVERSITY OF RUHUNA
BACHELOR OF INFORMATION AND COMMUNICATION
TECHNOLOGY DEGREE
LEVEL I (SEMESTER II) – Mini Project

Course unit: ICT1222 - Database Management Systems Practicum

Duration: Up to 11th week

Basic Outline

You are required to develop a system for faculty of technology for managing students details, student marks, student attendance and result management.

- Your system should contain below MYSQL users accounts
 - Admin - With All privileges with Grant Option for all the tables in the database
 - Dean - With All privileges without Grant for all the tables in the database
 - Lecturer – All privileges without Grant and user creation for all the tables in the database
 - Technical Officer - Read, write and update permissions for attendance related tables/views
 - Student - Read permission for final attendance and final marks/Grades tables/views
- Your system should include tables to store all kind of exam marks
 - Ex: Quiz marks, Assessment Marks, Mid Semester marks(Practical and Theory), Final Marks(Practical and Theory) etc.
- Your system should include table/s to store data about course units
 - Including course code, name, credits , theory/practical, lecturer in charge etc.
- Your system should include tables to store data about all the users mentioned above
 - You need to have one admin, one dean, many lecturers, many TOs and many students.
- You need to go through the DDLC process and produce all the related documents for the final presentation (Data Requirement document, ER diagrams, Relational Mapping diagram etc)

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- You should store data for at least 10 proper students, at least 05 repeat students, at least 05 lecturers, at least 05 technical officers and sufficient data for other mentioned roles
 - You should store basic data for above roles including at least 06 different attributes.
 - You need to store the details about course units according to the timetable of Level 01 Semester 02 for department of ICT (Offered by all the departments)

Attendance Related requirements

- You must record attendance details as given below
 - for all the subjects in the timetable of Level 01 Semester 02
 - assuming semester is planned for 15 weeks
 - Assume that theory and practical both have 15 sessions
 - You must consider the time allocation when calculating the percentages
 - If some students have submitted a medical for a day there should be a way to record it
 - In attendance recording tables there should be data
 - to cover $\geq 80\%$ students
 - $< 80\%$ students
 - with medical $\geq 80\%$ students
 - with medical $< 80\%$ students
 - There should be a way to view attendance details
 - as a summary for whole batch
 - by giving the course code
 - with registration nos, dates, percentage, and eligibility
 - percentage $\geq 80 \rightarrow$ eligible
 - for all the subjects with percentage and eligibility
 - as individuals by giving the registration no
 - as a summary for all the course units
 - as individuals by giving the registration no and course code
 - When there is both theory and practical for a subject there should be a way to check attendance only for theory, only for practical and as combined

Marks Related requirements

- You should record marks for the course units according to the Assessment criteria given by each course unit
 - All marks must be out of 100
- For eligibility requirements for CA please use criteria related to UGC *Commission Circular No. 12-2024*
- There should be a way to view CA marks details
 - As a summary for whole batch
 - By giving course code
 - As individuals
 - By giving course code and registration no
 - By giving registration no as a summary
- There should be a way to see the final marks only for individuals and whole batch
- There should be a way to see if student/s are eligible according to the criteria of CA to sit for the final exam

Eligibility requirements

- There should be a way to check eligibility (attendance + CA marks) as individuals and for the whole batch

Other requirements

- Grade students according to the UGC Commission Circular No. 12-2024
- There should be a way to see marks for each subject, student and as a whole batch
- There should be a way to see Grades for each subject, student and as a whole batch
- There should be a way to see SGPA and CGPA with the subjects and grades for each student and for the whole batch

Note: 1. You need to follow the guidelines of *UGC Commission Circular No. 12-2024* and must meet all the requirements specified in the circular through your solution

2. If there are students who put medicals for CA, Mid exams or Final exams you must display their result as MC

3. In student table there should be a field to identify the status of the students (proper, repeat and suspended). If a student is having suspended status, you must display all results of that student as WH and if a student is having repeat status maximum that they can get is a "C".

Guidelines for Final Report Submission

Your report must contain

- Brief introduction about the problem/group project
- Brief introduction to the solution
- Proposed ER/EER diagram
- Proposed Relational mapping diagram
- Table structure of your solution
- Architecture of your solution
- Tools and technologies that you have used
- Security measures that you have taken to protect your DB
- Brief description about DB Accounts/Users and the reasons for creating such Accounts/Users
- Code snippets to support your work
 - * Stored procedures
 - * views etc
- (you must cover at least the concepts that we have discussed in DBMS practicum module)
- Problems that you faced during the development of the solution
- Solutions/how you have overcome the above identified problems
- If you are going to host your backend, where are you going to host it and reasons for the selection
- If you are going to host your backend in a cloud environment what are the things/changes that you must do in your backend
- Individual contribution to the backend development
- References



Department of Information and Communication Technology

Faculty of Technology

University of Ruhuna

Database Management Systems Practicum

ICT 1222

Assignment 02 – Mini Project

Group <no>

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Submitted by: <Index no> - <Name>