UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

FACULTY OF ENGINEERING, DESIGN AND TECHNOLOGY
DEPARTMENT OF COMPUTING AND TECHNOLOGY
ADVENT 2025 SEMESTER **EXAMINATION**

PROGRAM: BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

YEAR: 1 SEMESTER: 2

COURSE CODE: CSC1202

COURSE NAME: WEB AND MOBILE APPLICATION DEVELOPMENT

EXAMINATION TYPE: 100% PROJECT-BASED EXAM

PROJECT DURATION: DECEMBER 2025

TIME ALLOWED: TWO WEEKS

Examination Instructions

1. The general guidelines for the Uganda Christian University examination, as well as its academic & financial policies, apply to this examination. Violating any of the policies by the student automatically makes this examination attempt void, even if you have completed and submitted the answer booklet.
2. This exam consists of a project that must be completed within ***two*** weeks.
    a. Assessment of the project shall be based on **five milestones**, evaluated during the duration of the project. **Each milestone** shall be evaluated out of **20 marks**.
    b. At the end of the project, the following SHALL be submitted on Moodle.
        i. A well-written project (Font: Trebuchet MS, 12Pts, 1.5 spacing, justified, aligned), **IEEE Referencing style**.
        ii. **Two links to GitHub** (Frontend and Backend), and these repositories should have evidence of collaboration and consistent individual commits.
3. This examination shall be attempted in collaborative teams. Every student is responsible for proving their contribution towards every milestone, and marks may be awarded to every student individually. This includes GitHub commits and pull requests.

PART A: PROJECT DESCRIPTION

Introduction

Uganda Christian University (UCU) encourages innovation and creativity among students through various academic projects and competitions. However, there is currently **no centralized digital repository** where innovations, research projects, and prototypes from different faculties can be easily accessed, showcased, or referenced by students, lecturers, and potential investors.

You are required to design and develop a **web-based repository application** called **"UCU Innovators Hub"**, which will serve as a centralized platform to document, showcase, and manage all local projects and innovations created by students at UCU. The platform should promote innovation, visibility, collaboration, and knowledge sharing.

Business Overview

The **UCU Innovators Hub** will allow students to submit their project details, upload documentation, and link GitHub repositories or live demos. Supervisors and faculty administrators will be able to review, approve, or reject submissions. The platform should also include an interactive public gallery of approved projects and a dashboard for analytics.

Main actors include:

a) **Students:** Create accounts, upload and manage their projects.
b) **Supervisors:** Review and approve student projects.
c) **Faculty Administrators:** Manage users, view analytics, and oversee project categories.
d) **Public Visitors:** Browse approved projects and filter by category, faculty, or technology.

Functional Requirements

1. **User Management:**
    a. Registration and login for students, supervisors, and admins.
    b. Role-based access (students can upload, supervisors approve; admins manage).
2. **Project Submission and Approval:**
    a. Students submit project details, including title, description, category, technologies used, GitHub link, and project document (PDF).
    b. Supervisors can approve, comment, or reject submissions.
    c. Approved projects appear in the public gallery.

3. **Project Repository and Search:**
    a. Publicly viewable repository of projects, searchable and filterable by:
        i. Faculty, department, category, year, and technology.
    b. Each project should have a detailed page displaying project information and team members.
4. **Analytics and Dashboard:**
    a. Admin dashboard showing number of projects per faculty, approval rates, trending technologies, and most active innovators.
    b. Graphs and charts for insights into project submissions and approvals.
5. **Collaboration and Feedback:**
    a. Allow comments and feedback on projects (by logged-in users).
    b. Option for students to update their projects post-approval under moderation.

Technical Requirements

1. Frontend Framework: **React, Vue.js, or Angular**.
2. Backend Framework: **Node.js (Express)**, **Django**, or **Laravel**.
3. Database: **MySQL**, **PostgreSQL**, or **MongoDB**.
4. Authentication: JWT-based secure login and role management.
5. Responsive design suitable for desktop and mobile.
6. Data validation, error handling, and a clean user interface.

Deliverables

1. **Source Code:** Well-documented frontend and backend repositories.
2. **Documentation:**
    a. System architecture and ER diagrams.
    b. User manual and deployment guide.
    c. Testing report and API documentation.
3. **Live Demo:** A functional prototype deployed or hosted locally and demonstrated during evaluation.

Key Notes

1. Focus on delivering a **minimum viable product (MVP)** with core functionality working.
2. Ensure **collaboration** is visible through Git commits and clear contribution logs.
3. Code must be **well-structured**, **modular**, and **readable**.
4. Presentation should highlight problem-solving, creativity, and user experience.

PART B: PROJECT-BASED ASSESSMENT GUIDELINES

S/N	Milestone Description	Marks
1	**MILESTONE ONE - Conceptualization** a) Define the problem, objectives, and scope. b) Provide architecture, ER diagrams, and mockups. c) Explain technology choices and rationale.	**20%**
2	**MILESTONE TWO - Core Functionality** a) Implement user authentication and project submission features. b) Set up backend APIs and database. c) Display basic project list view.	**20%**
3	**MILESTONE THREE - Advanced Features** a) Add a dashboard for analytics (e.g., number of projects per faculty). b) Integrate charts and basic visualization.	**20%**
4	**MILESTONE FOUR - Implementation Quality** a) Demonstrate clean code practices, error handling, and secure APIs. b) Optimize UI and responsiveness. c) Demonstrate a well-structured database schema.	**20%**
5	**MILESTONE FIVE - Presentation** a) Deliver a concise and professional demo. b) Highlight key features, architecture, and challenges overcome. c) Include a Q&A session during the defense.	**20%**

TOTAL MARKS: 100%

~WISHING YOU A MERRY CHRISTMAS~