FACULTY OF ENGINEERING, DESIGN AND TECHNOLOGY
DEPARTMENT OF COMPUTING AND TECHNOLOGY
ADVENT 2024 SEMESTER EXAMINATION

PROGRAM: Bachelors of Science in Information Technology

YEAR: 2   SEMESTER: 1

COURSE CODE: CSC2209

COURSE NAME: DATABASE PROGRAMMING

EXAMINATION TYPE: *PROJECT-BASED EXAM*

EXAMINATION DATE: DECEMBER 2024

TIME ALLOWED: TWO WEEKS

Examination Instructions

1. The general Uganda Christian University examination guidelines, 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 is project-based and should be executed in two weeks.
   i. Assessment of the project shall be based on five milestones. Each milestone shall be evaluated out of 20 marks.
3. Each milestone in the exam will be graded (See milestone table).
4. Students should prepare to make a presentation of their work on the day scheduled for this exam. This will be a physical presentation. Any candidate who fails to present during their presentation slot will not be given another opportunity.
5. Students will also be required to submit softcopies of their documentation and their system on the ucu moodle platform
6. Any student who does not present his/her work will be considered to have missed the exam.

PROJECT DESCRIPTION

Each of you was a student at UCU during the last guild election process, which included but was not limited to the following major processes;

- Nomination of candidates
- Vetting of nominated candidates
- Declaration of candidates to participate in the election
- Vote casting
- Vote tallying
- Final results declaration

In this exam, you are required to work on a database system to aid in the guild election process (2025), to ensure fairness and integrity throughout the process.

The idea is to have all or most of the guild election activities online!

This exam will be graded based on the milestones indicated in the table below;

PART B: Project-based assessment guidelines

S/N	Milestone Description	Maximum Marks

1	**MILESTONE ONE: Data Collection**
	• Base on the need to collect relevant data which will inform your design and development of the required database system.
	  ✓ State the; data sources, data collection methods and data collection tools you used
	  ✓ Give a brief overview of the findings of the data collection phase (problems /gaps identified, functional data requirements identified)
	  ✓ Major rules which govern the election process, any logical assumptions you have made
		20 %

2	**MILESTONE TWO: Design**
	• Base on the findings gathered from the data collection phase to come up with a logical design for your database. Please use the IDE-FIX notation.
	  ✓ Enhanced Entity Relationship Diagram (Data modeling)
	    ▪ Entities <super, sub, strong, weak>
	    ▪ Attributes <Primary key, Foreign key, other attributes>
	    ▪ Relationships <relationship name, overlapping, disjoint, multiplicity>
		20 %

3	**MILESTONE THREE: Development (Definitions)**
	• Base on the design above to develop a database for this purpose.
	  ✓ Database structure
	    ▪ Database
	    ▪ Entities as per the design
	    ▪ Referential integrity
	    ▪ Constraint enforcement (data validation)
		20 %

4	**MILESTONE FOUR: USER AND SECURITY MANAGEMENT**
	• Base on the functional requirements gathered during your data collection phase to create relevant users of the database, control access and use of the database.
	  ✓ User
	    ▪ User accounts and User Authentication
	    ▪ Privileges
	    ▪ Roles
		20 %

5	**MILESTONE FIVE: Database testing (DML) and Presentation skills**
	• You are required to show evidence of having tested the system and ability to present your work
	  ✓ Database Testing
	    ▪ Existence of data in your tables
	    ▪ Major reports from your system (single and multi-table queries), based on the needed information from an election!
	  ✓ Presentation skills
	    ▪ Presentation of work (power point or otherwise)
	    ▪ Ability to talk about your work
	    ▪ Time management
	    ▪ Smartness (as per the UCU dress code)
	    ▪ Ability to ably defend your work (Question and Answer session)
		20 %

	TOTAL MARKS	**100 %**

~END OF EXAM GUIDELINES~