MAKERERE UNIVERSITY BUSINESS SCHOOL

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSEWORK I PROJECT EXAMINATION FOR THE DEGREE OF

BACHELOR OF BUSINESS COMPUTING

OF MAKERERE UNIVERSITY ACADEMIC YEAR 2025/2026

COURSE NAME : BUSINESS APPLICATION PROGRAMMING
YEAR OF STUDY: TWO SEMESTER: TWO
COURSE CODE : BUC2227
Date Given: Monday 16th March, 2026 at 2:00 PM

Date of Submission: Monday 30th March, 2026 at 2:00 PM.

Instructions

- *Team up in groups of 10 (Ten) and do this assignment*
- *The time allocated to this project is strictly two (2) Weeks*
- *Create a project document baring your project title, group members and their particulars as the cover page.*
- *Avoid duplication of other groups' work. Once identified will lead to cancellation of both groups' work involved in the act*

In your groups, identify and brainstorm about a business challenge that can be addressed by developing/programming a business application. The business challenges could be related to how business processes are managed or anything else.

Required;

1. Business & Problem Identification [10 marks]

Task 1: Describe the Business/Organization: Clearly define the business (e.g., a supermarket, hospital, taxi service). Include details such as: Name of the business, Type of business (retail, service, logistics, healthcare, etc.), Location and size (Is it a small business or a large enterprise?), Target customers (Who uses the services/products of this business?), Key activities carried out in the business

Task 2: Identify the Challenges/Problems: Conduct research on challenges the business faces. Use real-world observations, interviews, or case studies. Examples of challenges could be related to difficulty in tracking stock in case of supermarkets, poor patients' records management in case

of hospitals etc. Explain how these challenges affect efficiency, productivity, or customer experience.

2. Solution Proposal **[15 marks]**

Task 3: Describe the Proposed Solution/Application: Explain the business application you intend to develop. Outline its main features and how it will solve the problem for example developing a Hospital Patient Management System would allow patients to book appointments online, store patient medical history for easy access etc. Identify the users of the system eg managers, employees, customers. Highlight the role for each user eg Admin, Salesperson, Accountant etc).

3. Functional & Non-Functional Requirements **[10 marks]**

Task 4: Define Functional Requirements: What will the system do? Provide a list of functionalities eg allow users to log in and log out securely, enable customers to place an order online, generate financial reports for managers etc.

Task 5: Identify Non-Functional Requirements: What will be the desired system qualities beyond functionality eg in terms of performance, security, usability, scalability etc

4. System Design **[20 marks]**

Task 6: Create Flowcharts for System Processes: These should help us to visualize the operations of your application. You can create only for core functionalities eg for User login process, Adding and updating records, Generating reports, Making sales transactions etc. You can use tools like Microsoft Visio, or hand-drawn diagrams.

Task 7: Develop Use Case Diagrams: Identify actors (users) and their interactions with the system eg in a supermarket inventory system, the actors could be Manager, Storekeeper, Cashier. The use cases could be adds new products, updates stock levels, process sales transactions etc.

Task 8: Create Data Flow Diagrams (DFDs): Show how data moves within the system eg in a Hospital Appointment System, data flows from Patient → Appointment Booking → Doctor Schedule → Notification to Patient. You can decompose your data flow diagrams up to level 1

- **Level 0 (Context Diagram):** Should give an overview of the entire system.
- **Level 1:** Should show the major processes and data stores.

5. Algorithm & Pseudo Code Development **[10 marks]**

Task 9: Write Algorithms for Core Functionalities: An algorithm is a step-by-step process to perform tasks in the system eg for the login functionality, the user enters username and password, the system checks if username exists in the database. If correct, system grants access; otherwise, it shows an error message.

Task 10: Convert your Algorithms into Pseudo Code: Pseudo code is a structured way of writing algorithms in plain English.

6. User Interface (UI) Design: **[20 marks]**

Task 11: Sketch how the application screens will look to ensure user-friendly design. Your screens could include; Login screen, Dashboard, Data entry forms (e.g., add new product, register a patient, book an appointment), Reports section. You can use Hand-drawn sketches or Software-based mockups (e.g., Figma).

7. Database Design (If Applicable) **[15 marks]**

Task 12: Define how data will be stored, retrieved, and managed in the system. List the necessary database tables and their attributes.

Task 13: Define relationships between tables eg One-to-many: A manager can oversee many employees, Many-to-many: A doctor can have multiple patients, and a patient can visit multiple doctors. Create an ERD (Entity-Relationship Diagram) and show how the tables are connected. You can use MySQL Workbench or DB Designer.

********** *The End* **********

Examiner: Edward Miiro ***H.O.D……***