



COLLEGE OF ENGINEERING AND APPLIED SCIENCES

NCSC203 MOBILE APPLICATION

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER 2025

LECTURER: MR. LORENCE DHLAKAMA

TIME: 3 HOURS

INSTRUCTIONS

1. Use a **wireframe tool** provided for user interface design, **dart** and **vs code** for implementation.
2. Include Comments in your code where necessary.
3. Show all code and outputs clearly.
4. Answer **ALL questions** from **Section A**.
5. Choose and Answer any **Two (2)** Questions from **Section B**.
6. Make screenshots of all interfaces and code into a single PDF document with your student number
7. Create a folder with your student number on your desktop and save all your work in that folder.

SECTION A 40 MARKS (Answer All Questions from this Section)

QUESTION 1

(a) Design and code a mobile airtime recharge application that adds recharge amount to existing balance and prints the new balance. Assume the airtime balance is \$0.74 and the recharge card number is 78453259854 and it worth \$5.00. Design all UI using a wire frame tool provided. [10]

(b) Design and code a mobile application login screen. The app does not connect to a database. Instead, it uses the following hardcoded credentials to simulate the login process.

Username: admin

Password: admin@2025

Design all UI using a wire frame tool provided [10]

QUESTION 2

(c) Design and code a mobile application step counter simulator that accepts steps walked and calculates distance covered. Design all UI using a wire frame tool provided. (assume 1 step = 0.8 meters). [10]

(a) A small business owner in Mutare wants to estimate their Water bill. Design all UI using a wire frame tool provided and Code a mobile application that takes the number of units consumed as input. Using a simplified tiered tariff, calculate and print the total bill.

Tariff: First 50 units at \$1.20 per unit, subsequent units at \$2.00 per unit. [10]

SECTION B 60 MARKS (Answer Any 2 Questions from this Section)

QUESTION 3

Africa University Clinic needs a simple tool to quickly check blood pressure readings. Design and Code an application that prompts a user for their systolic and diastolic blood pressure readings. The program should then classify and print the user's blood pressure status as "**Normal**," "**Elevated**," or "**Hypertension**" based on ranges below and print the result. [30]

- **Normal:** Systolic < 120 AND Diastolic < 80
- **Elevated:** Systolic 120-129 AND Diastolic < 80
- **Hypertension:** Systolic >= 130 OR Diastolic >= 80

Design all UI using a wire frame tool provided

QUESTION 4

Design and code Simple E-commerce Application command-line application for a small online bookstore. The application will manage product inventory and process customer orders.

- Design all UI using a wire frame tool provided.
- Create a data structure: Design a `Map` or a `Class` to represent a product. Each product should have a `title` (`String`), `price` (`double`), and `stock` (`int`).
- Populate the inventory: Create a `List` of at least three products with initial stock quantities.
- Display inventory: Write a function that prints the current inventory in a numbered list, showing the title, price, and remaining stock for each item. [30]

QUESTION 5

Design and code a simple point of sale (POS) **that** simulates a basic point of sale system.

Design all UI using a wire frame tool provided.

- (i) Create a JSON File with list of 3 items with their prices.
- (ii) Create a mobile app screen that ask the user to enter quantities for each item and read the JSON file with stored items.
- (iii) Calculate and print the total bill. [30]

END OF EXAMINATION