

**YEAR:** 2023  
**SEMESTER:** 1  
**ASSESSMENT:** Semester Test 2

<b>SUBJECT NAME:</b>	INTERNET PROGRAMMING
<b>SUBJECT CODE:</b>	INT316D
<b>QUALIFICATION(S):</b>	DPRS20/DPRSFO

**PAPER DESCRIPTION:** Computer Based      **DURATION:** 3 HOUR      **PAPER:** Only

#### SPECIAL REQUIREMENTS

- ☐ NONE
- ☐ NON-PROGRAMMABLE POCKET CALCULATOR
- ☐ SCIENTIFIC CALCULATOR
- ☐ COMPUTER ANSWER SHEET
- ☐ GRAPH PAPER
- ☐ DRAWING INSTRUMENTS

**OTHER:**

**INSTRUCTIONS TO CANDIDATES:** ANSWER ALL QUESTIONS

When done, send your work to the Lecturer's PC. Demonstrate your Question 1 to the lecturer. This paper includes a rubric that will be used to mark your work. The lecturer will share the rubric with you when distributing the paper.

**TOTAL NUMBER OF PAGES INCLUDING COVER PAGE:** 3

**EXAMINER:** MR V MEMANI  
**MODERATOR:** MR EV MALULEKE

**FULL MARKS:** 100  
**TOTAL MARKS:** 100  
**STUDENT TOTAL:** \_\_\_\_  
**STUDENT %:** \_\_\_\_

## Question 1

Learning Outcomes: 6 - 9

### Problem statement

[100]

Rendani is running a thriving farming business in the rural parts of Sosh. His farm produces fruits and vegetables of high quality. Members of the public come to his farm to purchase boxes of fruits and vegetables at reasonable prices. Rendani wants to expand his market by having an internet footprint. To realize this dream, he comes up with a web application idea. The envisaged web application must allow his customers to place orders online and get them delivered right on their doorsteps at a small fee. Payment should be done upon delivery.

The expected web application must work with two roles, a **manager** and a **customer**. Each of the roles must have their own respective menu options. A **manager** must be able to do two things, namely:

1. Persist items into the database. An item has the following attributes:
  - ✓ Code;
  - ✓ Description;
  - ✓ Unit price; and
  - ✓ Quantity.

Also to be included as item attributes is an **id** and the **creation date**. The **id** should serve as a primary key. This key must be automatically generated by the persistence provider. The creation date should be a timestamp reflecting when an item was persisted into the database.

2. Display the details of all the orders placed by customers that fall within an **order value** range, i.e between **minimum** and **maximum** order values. An order value is the total cost of an order (amount due by a customer). The details of the placed orders must be displayed in a descending form according to the **order value**. For each order, the following information must be displayed:
  - ✓ Order number;
  - ✓ Order timestamp;
  - ✓ Amount to be paid by the customer for the order (**order value**); and
  - ✓ Address of the customer.

A **customer** must be able to place an order. For a customer to place an order, all the available items, together with their **unit prices** must be shown to the customer for selection. A customer must be able to select an item, state the needed quantity and place the selected item on a shopping cart. A customer must be able to select all the needed items. After completing the selection process, a customer must be able to provide a delivery address and thereafter place an order. The order must be persisted into the database. So an order will consist of a **list of items**, their **total value** (total amount due), the **customer address** and the **creation date (timestamp)**. An address has three attributes, namely **street**, **area**, and **code**. The primary key of an order (**id**) must be automatically generated by the persistence provider.

### To do

Create such a web application for Rendani.

### **How are marks allocated?**

Below is how marking will be done.

#### **Functionalities**

##### **Manager**

Is a manager able to do the following:

- View own menu? (5)
- Persist items into the database? (20)
- View orders within a given order value range? (30)

##### **Customer**

Is a customer able to do the following:

- View own menu? (5)
- Interactively buy items? (40)

A detailed breakdown of the marks is provided in the rubric given to you.