

## **FIT1013 Digital Futures: IT for Business**

### **Assignment 3 Construct Database and Analyse Data using Microsoft Access (30%)**

**Submission Deadline: Friday, 3 November 2023, 4:30 PM**

#### **Individual Assignment**

#### **Learning Objectives**

By completing this assignment, students will be able to create an Access database using the objects in Microsoft Access. Students will be able to create queries based on multiple tables, multiple selection criteria, and perform data connections to Microsoft Access from a VBA.

#### **Submission Requirements**

- Your assignment should be submitted to Moodle/Turnitin.
- The file names should contain Unit Code, assignment number and your student ID number, similar to the example: FIT1013A3\_StudentID.xlsm and FIT1013A3\_StudentID.accdb where StudentID is your student ID.

#### **Late Submissions:**

The late-submission penalty is 10 percent of the available marks in that task, not the marks you received. For instance, an assignment has 100 marks, and you submitted the assignment one day late and received 65 marks. In this case, the penalty is 10 marks deduction (10% of the total available marks).

$65 - (10\% \text{ of } 100) = 55 \text{ of } 100 \text{ marks.}$

#### **Scenario**

Compared to Excel, Access is better for managing large amounts of data and keeping it organised, easy to search, and available to multiple simultaneous users. As LuxDrive's business is expanding, the CEO is now contracting you to develop an Access database as specified below.

#### **Tasks**

1. Create an Access database consisting of four tables i.e. based on the four worksheets provided in Assignment 3 workbook (i.e. FIT1013 A3\_2023.xlsx). Ensure that all data from the Excel worksheets is also included. **(2 marks)**
2. Use appropriate data type for each field. Apply Lookup Fields (e.g. State, ReturnCondition), Input Masks (e.g. Telephone), and define Data Validation Rules when appropriate (e.g. RentDate, ReturnDate). **(3 marks)**
3. Define relationships between tables – including identify Primary Keys, Referential Integrity Rules. **(2 marks)**
4. Create queries based on the following criteria **(12 marks)**
  - i. Create a parameter query to return the available stock (Quantity on Hand) of an Add-ons item with the Item Name specified by the user. If the user doesn't enter an Item Name field value, select all records from the table. Save the query as *qryAdd-onsQuantityParameters*.
  - ii. Create a query that finds the vehicles with the Car Year not older than 2020 and the Car Value is between 100,000 and 150,000. Display only the CarRego, CarMake, CarModel and

CarYear. Sort the list in ascending order on the CarRego field. Save the query as *qryCarYearValue*.

- iii. Create a query to show all customers (with or without rental). For the customers who have rental, display the total rental fees, otherwise display 0. Save the query as *qryAllCustomerRental*.
- iv. Create a query to find the return status of all the rented vehicles. The query should display the RentalID, Customer name (both the first name and last name in one field), CarRego, CarMake and CarModel fields. Add a calculated field named ReturnStatus as the last column that displays 'Returned' if the dress was returned, otherwise display 'Not Returned'. Sort the list in ascending order on the RentalID field. Save the query as *qryReturnStatus*.
- v. Create a query to find the highest, lowest and average Total Rental Fees for each state, sorted in ascending order. Display only states with positive Total Rental Fees. Save the query as *qryTotalRentalFeesStatisticByState*.

- 5. Create forms for Customer, CarDetails and RentalDetails tables. Explore and apply at least THREE additional design and formatting features (e.g. images, title, colour... etc) to improve the layout and usability. **(2 marks)**
- 6. Create reports based on queries (ii), (iii), (iv) and (v) of Task 4. Explore and apply at least THREE additional design and formatting features (e.g. images, title, colour... etc) to improve the layout and presentation. **(2 marks)**
- 7. Import/Export data from/to Access using VBA **(7 marks)**

Using the file and data from Assignment 3 workbook (FIT1013 A3\_2023.xlsx), create a button (Form Control or Command Button in ActiveX Control) named "Backup" in the Rental worksheet that allows users to export the rental data (from Excel) to your Access database for backup. Create another button "Recover" which can import rental details from the same database (to Excel) for data recovery. During importing, any discrepancies (between the records in the worksheet and the database) should be recorded and reported in a **separate worksheet** called "Discrepancies".