



COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

NCIS301: DATABASE SYSTEMS

SUPPLEMENTARY EXAMINATIONS

JANUARY 2022

LECTURER: DR. KANDIERO, A

DURATION: (5 HRS)

INSTRUCTIONS

1. Answer any **ONE** question.
 2. Compile your answer into one consolidated PDF format document.
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QUESTION 1[50 Marks]

Using MS access create a database called **Comp_Science**. [2]

Within the database create the following tables

(a) Create a table **Users**. [10]

Use the appropriate data types and enter data into the table as shown below

username	password
admin	123
User1	456
User2	789

(i) Set password length to 3

(ii) Encrypt the table as shown below so that the passwords can be hidden.

username	password
admin	***
user1	***
user2	***

(b) Create a table **Students**. [10]

Use the appropriate data types and enter data into the table as shown below

Student_no	firstname	lastname	sex	dob	address	Cell_no
1	John	Doe	M	10-12-84	15 MutareStreet	074456321
2	Mary	Simpson	F	15-12-89	19 Harare Street	078963410
3	Chipo	Mandy	F	12-01-90	14 Open Drive	0789654123

(i) Set student_no as the primary key

(ii) Use the appropriate data types and enter data into the table as shown below

(iii) Set the field size of the following fields

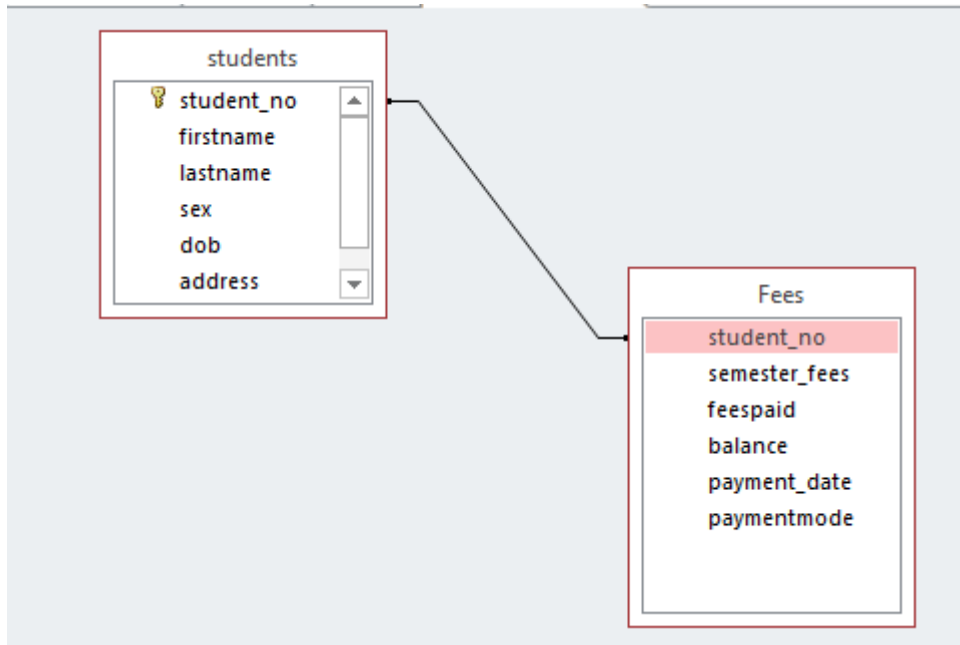
- firstname-30
- last name 30
- sex 1
- address 30

(c) Create a table **Fees**. [10]

-Use the appropriate data types and enter data into the table as shown below

Student_no	Semester_fees	feespaid	balance	Payment date	paymentmode
1	\$2500.00	\$2500.00		03-11-20	Cash
1	\$1000.00	\$1000.00		15-11-20	Ecocash
2	\$2500.00	\$1800.00		12-11-20	Bank
2	\$500.00	\$400.00		10-11-20	Cash
3	\$2500.00	\$1400.00		14-11-20	Ecocash

(d) create the following relationship. [2]



- (e) Using **Ms Visio** create an ER- Diagram for the above relationship. Save the Ms Visio document as **ERDiagram**. [5]
- (f) Create a Query to retrieve all students who have outstanding fees name the Query **OverdueQry**. [3]
- (g) Create form taking data from table Students with the following buttons. Name the form **Students_InputFrm**. [5]
- Add Student
 - Find Student
 - Delete
 - Exit
- (h) Create reports taking data from **Fees Table**. Name the report **Fees_Report**. [5]

QUESTION 2 [50 Marks]

The AU Management needs a database to records of all vehicles owned by the University.

You are required to create the database called **AUFleet** using Oracle. Using the information below create the database.

Note:

1. Take a **screen shot** of the output together with the **SQL command** and save it to word document with your name and student Number.
2. Convert the Word document to PDF and submit as PDF

(a) Create table called **AU_Vehicles** with the following data.[10]

Use the appropriate data types and enter data into the table as shown below. [10]

Vehicle_ID	Make	Description	Engine_Capacity	Colour	Purchase_Date	Condition
1	Erizer	Bus	8.5cc	Red	10-12-2015	New
2	Yutong	Bus	9.8cc	White	15-12-1989	Good
3	Nissan	Truck	1.8cc	White	20-10-2018	New
4	Mazda	Truck	1.6cc	White	20-05-2015	Old
5	Toyota	Light Vehicle	1.4cc	Grey	01-01-2013	Good

(b) Set the field size of the following fields [5]

- Make-20
- Description 20
- Engine_Capacity 5
- Clour 10
- Condition 20

(c) Using SQL Command Add the above into the table ,save the Sql as **Insert_Data**.[5]

(d) Create SQL command to Extract all the Buses from the database ,save the sql as **Buses**.[5]

(e) Create SQL command to Extract all New Tucks,save the Sql as **New_Trucks**.[5]

(f) Create SQL command to Extract all vehicle bought between 2015 and 2018 ,save the SQL as **Date_Sql**.[5]

(g) Create SQL command to count all the number of vehicles owned by the university.,save the Sql as **Sql_Count**.[5]

QUESTION 3 [50 Marks]

Your task is to developing an ER Diagram for Africa University, using UML and Microsoft VISIO as your design software. Show external and conceptual model. The business rules are as follows: [50]

- 1) Africa University is divided into several schools
- 2) Each school is composed of several departments
- 3) Each department may offer courses
- 4) Each department may have many lecturers assigned to it
- 5) Each lecturer may teach up to four classes; each class is section of course
- 6) Student may enroll in several classes, but (s)he takes each class only once during any given enrollment period
- 7) Each department has several students
- 8) Each student has only a single major and is associated with a single department
- 9) Each student has an advisor in his or her department
- 10) Each advisor counsels several students
- 11) The relationship between class is taught in a room and the room in the building

End