

BIS 245: Case Study Guide - Small Surgery Center - DeVry University, Chicago.

written by

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Case Study

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BIS245

Case Study

Attributes, Primary Keys and data type of Each Entry

Patients' Table

The primary key is the patient ID, which populates the numbers as the patients visit the surgery center. The patients' table has eight attributes: Patient ID, surname, first name, age, date of the first visit to the surgery center, symptoms, residence, and the name of the doctor. Every attribute has a particular data type. The surname is a short text, the first name is a short text, age is a number, and date of the first visit is a date and time data type. The symptoms are a short text, the residence is a short text, and doctor's name is a short text data type.

Doctors' Table

The doctor's table has seven attributes: The staff number, surname, first name, terms of employment (whether on contract or permanent), the salary scale, terms of service (whether full —time or part-time), and the age. The staff number is the primary key. Every attribute has a specific data type. Staff number is a number, surname is a short text, first name is a short text, terms of employment is a short text, salary scale is a number, form of service is a short text, and age is a number.

Procedures' Table

The procedures' table has the patient ID as its primary key. There are six attributes in the table: The patient ID, date of first visit, diagnosis, symptoms, doctor's staff number and recommended treatment. Every attribute as a unique data type. Patient ID is a number, date of first visit is a time & date format, diagnosis is a long text, symptoms is a short text, doctor's staff number is a number, and recommended treatment is a short text.

Appointments' Table

The primary key is the patient ID, which populates the numbers as the patients visit the hospital. The data type is a date and time. A date and time attribute is imperative to follow the day and time when the patient should attend the hospital.

One-to-many and many-to-many relationships

A one-to-many is created when there is a relationship between one record in an entry and that in another table. Many-to-many relationships refer to a single patient ID in the first table can relate to other records in other tables. The primary key in the first table will be useful in deriving the many-to-many relationships. The patient ID will be useful to generate one-to-many relationships.

Database benefits when businesses use queries, forms, and reports

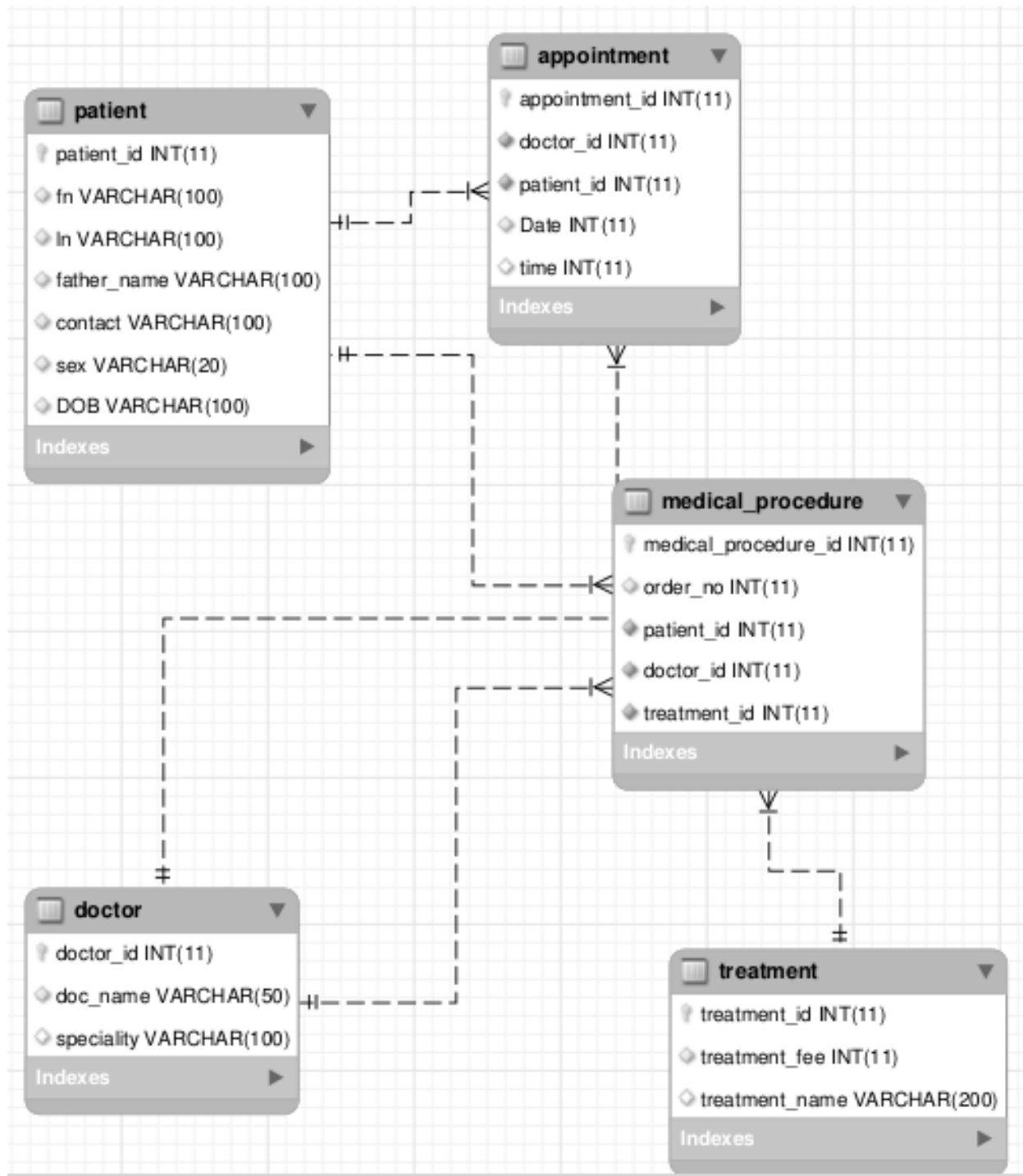
When business use queries, forms, and reports, businesses can create lists and have personalized contents that are highly engaging based on a specific targeted criterion. Businesses, therefore, can contact their selected clients. Queries, forms, and reports are useful to help study customers' behaviors and inform actions that are applicable in response to observed behavior. Rational table queries are essential to enhance personalized contacts such as messages sent to customers. Queries, forms, and reports are also important because they support other programs. Businesses can link data available on spreadsheets with Microsoft access and populate to achieve desirable results. Besides spreadsheets, queries, forms, and reports can be integrated with other programs including oracle. Moreover, businesses can easily afford Microsoft access software, which is economical compared to other database management systems.

The first security concern that businesses should consider is the possible intentional manipulation of data by staff at entry. This can be resolved by ensuring strict rule on access to data at the company levels and appointing authorized data officers. Secondly, businesses that do

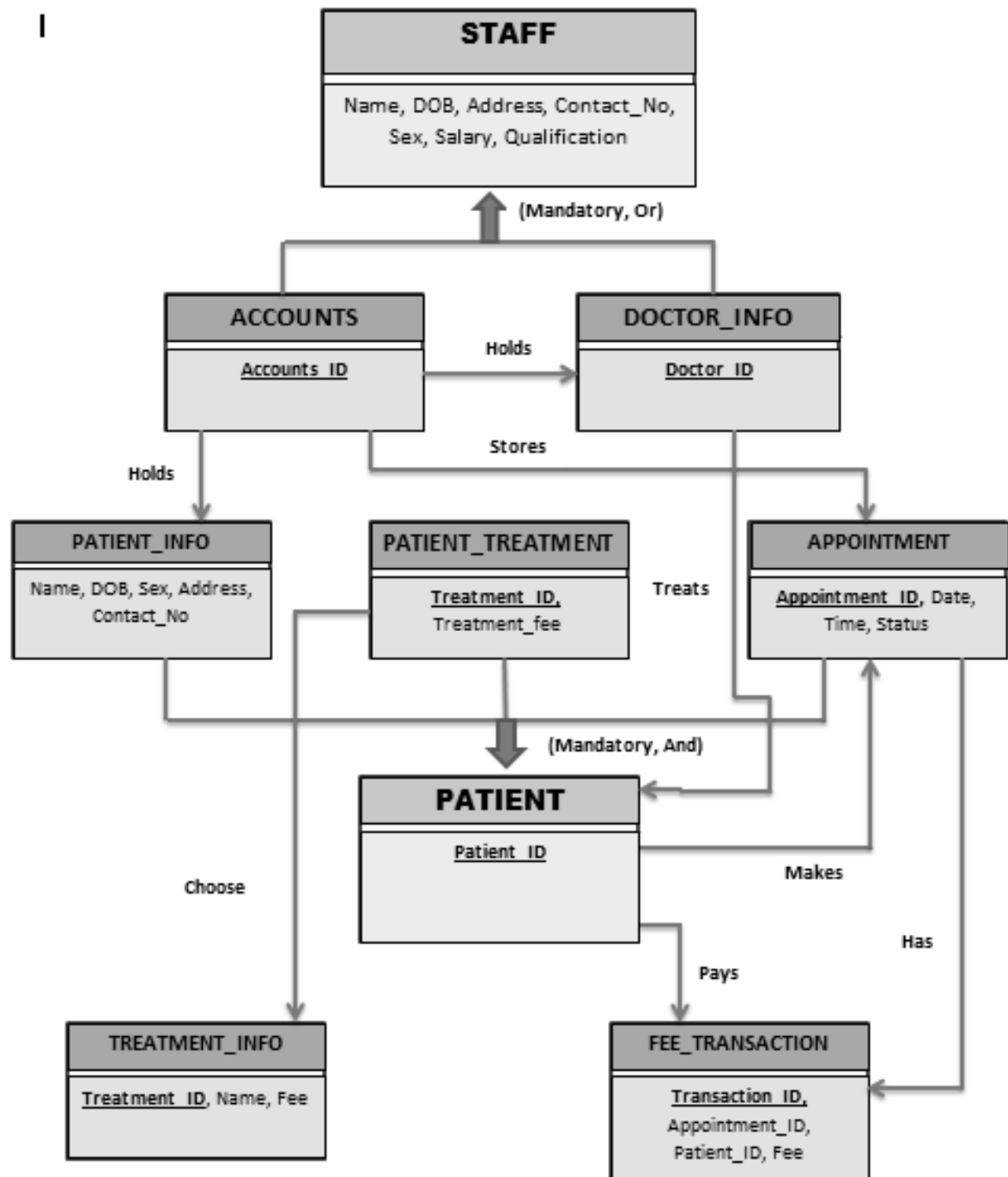
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not have clear and strict guidelines on its data-sharing policies can have a challenge of unauthorized access to queries, forms, and reports, which constitutes a breach of data handling policies. A possible loss of data, therefore, may occur. Businesses, therefore, should have strict policies regarding sharing of data at the workplace and state the authorized parties.



Relationships between the entities

**Database tables****Patients table**

Field	Data Type	Key	Constraint
Patient _treatment_no (11)	INT	PK	Not Null
Name	Varchar (100)		Not Null

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contact	Varchar (100)		Not null
Phone	Varchar (100)		Not null
Insurance_ID	Varchar (100)		Not null
Sex	Varchar (20)		Not Null
DOB	Varchar (100)		Not Null

Doctor's table

Field	Data type	KEY	Constraint
Doctor_ID	Int (11)	Pk	Not Null
Doctor_Name	Varchar (50)		Not Null
Speciality	Varchar (100)		Not Null

Patient appointment table

Field	Data Type	Key	Constraint
Appointment_ID	INT (11)	PK	Not Null
Doctor_ID	INT (11)		Not Null
Patient_ID	INT (11)		Not Null
Date	INT (11)		Not Null
Time	INT (11)		Not Null

Medical Procedure Table

Field	Data Type	Key	Constraint
Medical_procedure_ID	INT (11)	PK	Not Null

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Order_Number	INT (11)		Not Null
Patient_ID	INT(11)		Not Null
Doc_ID	INT (11)		Not Null
Treatment_ID	INT(11)		Not Null

Treatment table

Field	Data Type	Key	Constraint
Treatment_ID	INT (11)	PK	Not Null
Treatment_fee	INT (11)		Not Null
Treatment_name	INT Varchar (200)		Not Null

Note: Foreign keys include: Patient_ID, Doctor_ID, and Treatment_ID.