

# Access Basics 3: Working with Multiple Tables

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# Questions To Ask Yourself

- What have I got?
  - (Inputs)
- What do I want?
  - (Outputs)
- What do I need to do to get there?
  - (Process)
- How am I going to build it?
  - (Application/Program)





# Review Basic Design Rules

## Organizing Data

- If you are numbering the fields, consider making a new table of the numbered values.

## No Derived Fields

- Unless it's the linking key field, don't repeat fields that are stored in another table.

## Data is broken down into Smallest Logical Parts

- Anything you want to sort or filter should be in its own field
- 



# Review Basic Design Rules

## Descriptive Field Names

- Be wary of abbreviations, be clear, be concise, and be consistent.

## Unique Field Names

- Use unique fieldnames throughout the database  
-- Emp Name, Pat Name, Doc Name.

## No Calculated Fields


- Make note of calculations for later, not in the table.

## Unique Records

- Set a Primary Key field to keep the records in a table unique.
- 


# Reminder of the Patient Table Plan

## Patients

Pt Med Rec #   
Pt First Name  
Pt Last Name  
Pt Address  
Pt City  
Pt State  
Pt Zip Code  
Pt Primary Phone #  
Pt Primary Doctor  
Pt Date of Birth  
Pt Social Sec #  
Pt Gender


# Let's Start Planning Appointments

## Patients

Pt Med Rec #   
Pt First Name  
Pt Last Name  
Pt Address  
Pt City  
Pt State  
Pt Zip Code  
Pt Primary Phone #  
Pt Primary Doctor  
Pt Date of Birth  
Pt Social Sec #  
Pt Gender  
Pt Eye Color

## Appointments

--



# Questions To Ask Yourself – What have I got? What do I want?

## Appointments

### Who?

- Doctor
- Patient

### Where?

- Clinic Location

### What?

- Appointment

### Why?

- Reason for visit

### When?

- Date
- Time

### How?

- How are you paying
- 

# Initial Plan

## Appointments

### Who?

- Doctor
- Patient

### When?

- Date/Time

### Where?

- Location

### Why?

- Reason for visit

- Patient Name
- Patient Phone #
- Patient DOB
- Doctor Name

- Date/Time

- Location

- Reason for visit

### What?

- Appointment

### How?

- How are you paying






# Organizing Data

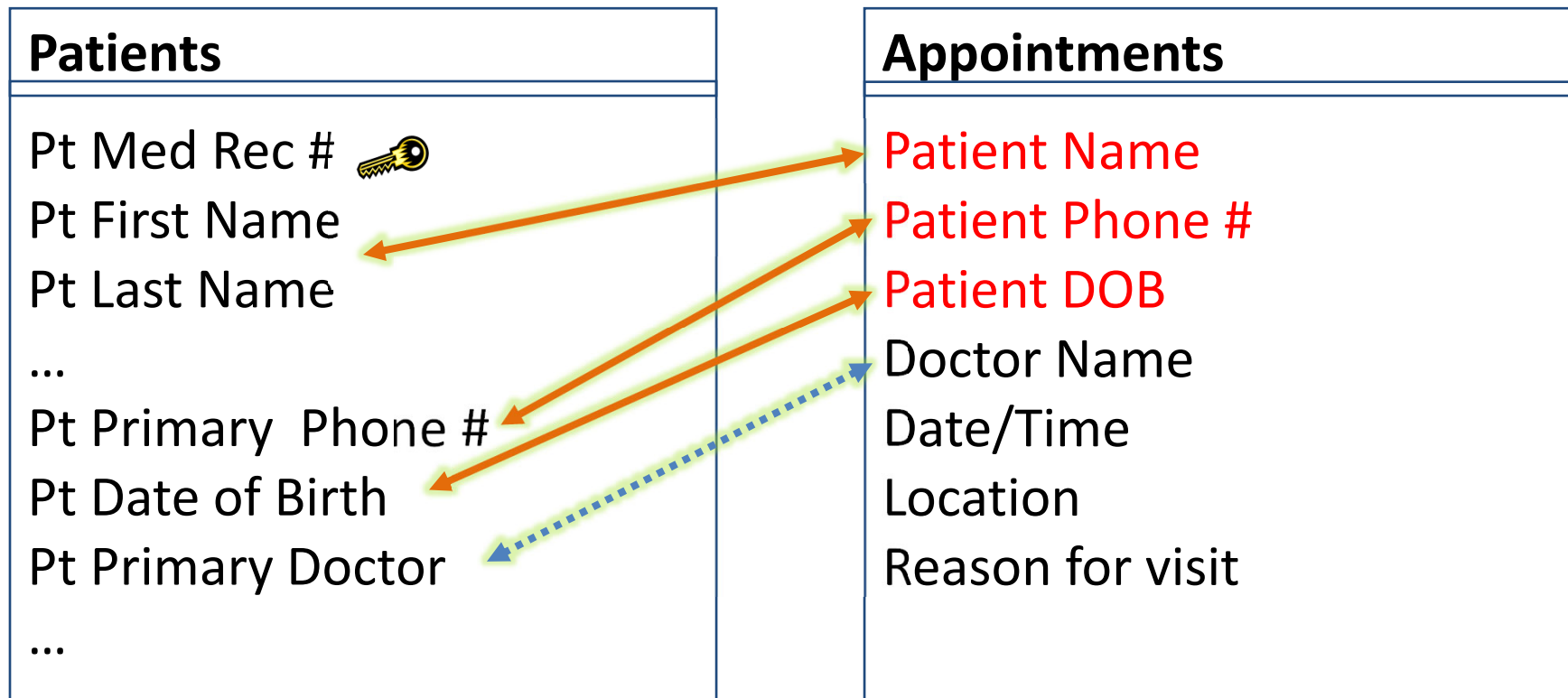
This is where we look for the multiples. We don't have an issue with this for our Appointments table.

Examples might be:

- Procedures performed
  - Prescriptions written
  - Rescheduled dates
  - ...
- 

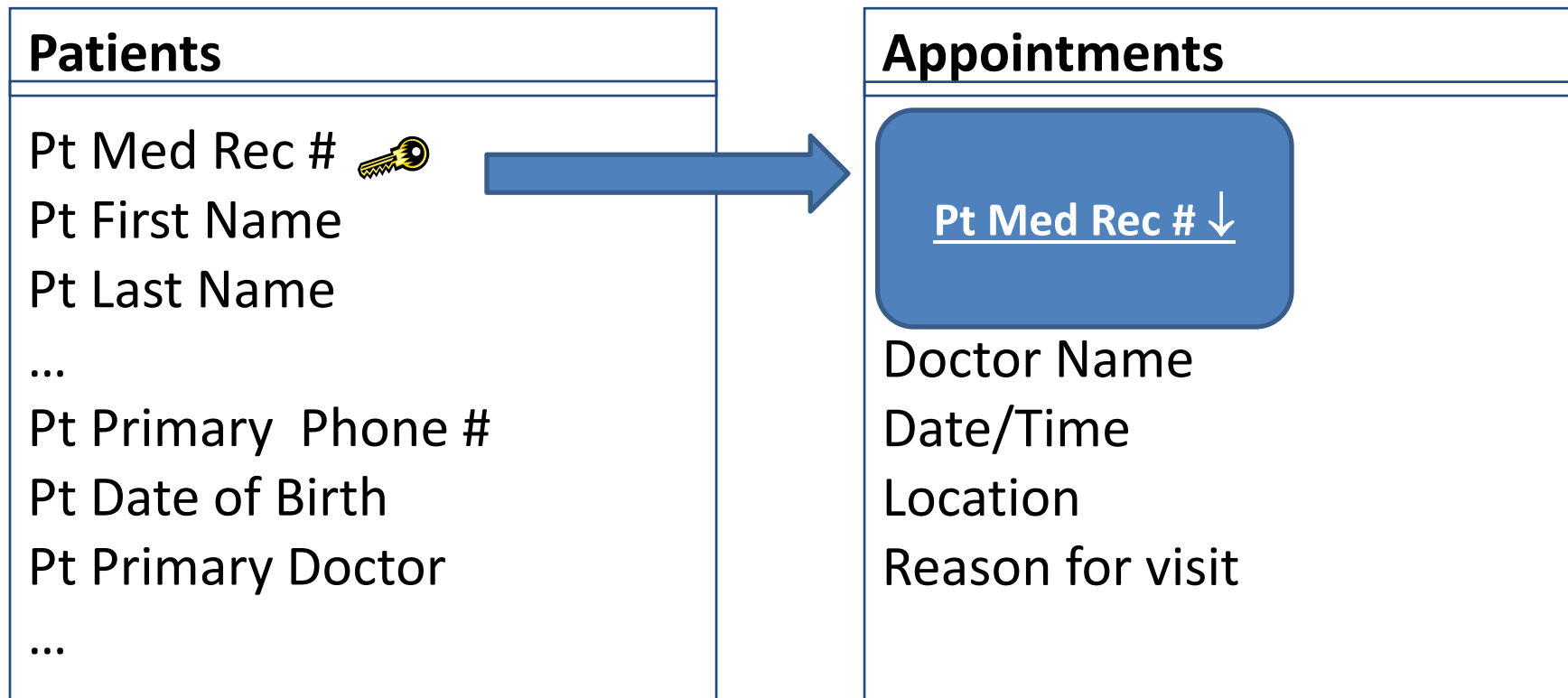
# No Derived Fields

Since we have a table of Patients, we can find their Name, Phone # and Birth Date in that table. We do not have a table of Doctors, so we can leave their name in this table.



# No Derived Fields

We still need to answer that "Who?" question, we need an identifier for the Patient. We use the value that guarantees our uniqueness in the Patients table, its key. This is called a "foreign key".



# Broken down into Smallest Logical Parts

- Pt Med Rec #
  - Small as we can go
- Doctor
  - First? Last? Make a lookup table?
- Date/Time
  - split into date field and time field
- Location
  - Finite number of locations, perhaps an internal lookup
- Reason for visit
  - Do we want the type of visits, too?

- Pt Med Rec # ↓
- Doctor Name
- Date
- Time
- Location ↓
  - Gainesville
  - Jacksonville
  - Starke
- Reason for visit
- Type ↓
  - First Appt
  - Follow-up
  - Emergency
  - Referral
  - Walk-in



# Descriptive Field Names

- **Date = Is this the date you talked to them or the date of their appt?**
- **Type = Patient's Blood Type?**

It's okay to abbreviate but try to spell them out enough to make your field names more identifiable.

- **Appt Date**
  - **Appt Type**
- 



# Unique Field Names

## PATIENT

- First Name
- Last Name

## DOCTORS

- First Name
- Last Name

## EMPLOYEES

- First Name
- Last Name

When we look at the design view of our database objects, we need to be able to differentiate between the source tables.

## PATIENT

- Pat First Name
- Pat Last Name

## DOCTORS

- Doc First Name
- Doc Last Name

## EMPLOYEES

- Emp First Name
  - Emp Last Name
- 

# Current Plan

Appointments
Pt Med Rec # <u>↓</u>
Doctor Name
Appt Date
Appt Time
Location <u>↓</u>
Reason for visit
Appt Type <u>↓</u>



Appointments
Pt Med Rec # <u>↓</u>
<b>Appt</b> Doctor Name
<b>Appt</b> Date
<b>Appt</b> Time
<b>Appt</b> Location <u>↓</u>
<b>Appt</b> Visit Reason
<b>Appt</b> Type <u>↓</u>



# No Calculated Fields

Data in a table is stagnant, it doesn't change unless we modify it. None of our fields are calculated.

Examples might be:

- BMI
- Days since last appt
- Days for next Appt
- ...





# Unique Records (Primary Key)

## Appointments

Pt Med Rec # ↓  
Appt Doctor Name  
Appt Date  
Appt Time  
Appt Location ↓  
Appt Visit Reason  
Appt Type ↓


This list of fieldnames that we are building is going to be the headings in our table.

Pt Med Rec	Appt Doctor	Appt Date
123-456	Smith	1/15/2020
123-456	Smith	5/27/2020
789-012	Jenkins	5/27/2020

It's a common beginner mistake to try to make Pt Med Rec the key, because it's a key in the Patient table. But because a patient can attend more than one appointment, it cannot be a primary key field.

# Unique Records (Primary Key)

## Appointments

Pt Med Rec # ↓  
Appt Doctor Name  
Appt Date  
Appt Time  
Appt Location ↓  
Appt Visit Reason  
Appt Type ↓  
**Appt ID #** (auto) 

There is a uniqueness in this dataset in the combination of the Patient, Date, and Time.

Pt Med Rec	Appt Date	Appt Time
123-456	1/15/2020	8:00 AM
123-456	5/27/2020	8:00 AM
789-012	5/27/2020	8:00 AM

But we are looking for a primary key FIELD, singular. Since there is not one in the data, we will add an AutoNumber field to keep the records unique.

# Current Plan

Appt ID # (auto) 

Pt Med Rec # ↓

Appt Doctor Name

Appt Date

Appt Time

Appt Location ↓

- Gainesville
- Jacksonville
- Starke

Appt Visit Reason

Appt Type ↓

- First Appt
- Follow-up
- Emergency
- Referral
- Walk-in



# Lookups

Pt Med Rec # ↓

Appt Location ↓

- Gainesville
- Jacksonville
- Starke

Appt Type ↓

- First Appt
- Follow-up
- Emergency
- Referral
- Walk-in

Lookups are drop down menus, combo boxes, that let you choose an item from a list. Plan for these to only allow **ONE** value.

Pt Med Rec is pulling from the Patient Table, one patient per appointment.

Appt Location is pulling from a list we will create in the table, one location per appointment

Appt Type... Well...



# Lookups

## Appt Type↓


- First Appt
- Follow-up
- Emergency
- Referral
- Walk-in

- Appt Type First Appt
- Appt Type Follow-up
- Appt Type Emergency
- Appt Type Referral
- Appt Type Walk-in

An appointment could be a first appointment and a referral. It could be an emergency follow-up.

We could split this into different groups of lookup lists, but when you want to allow multiple values, creating separate Yes/No check boxes might be a better way to go.

# Final Plan for Table Appointments

Appt ID # (auto) 

Pt Med Rec # ↓

Appt Doctor Name

Appt Date

Appt Time

Appt Visit Reason

Appt Type First Appt

Appt Type Follow-up

Appt Type Emergency

Appt Location ↓

- Gainesville
- Jacksonville
- Starke