Imagine a simplified data-model with the following 3 tables:

Patient – Stores patient-level information and demographics.

Indicator	Column Name	Description
PK	patient_id	Primary Key
	first_name	Patient First Name
	last_name	Patient Last Name
	…	*Additional Columns*

Prescription – Stores information on prescriptions written for the patients.

Indicator	Column Name	Description
PK	prescription_id	Primary Key
FK	patient_id	Foreign Key to the Patient table
	prescription_date	Date on which the prescription was written
	medication	Name of the Medication prescribed
	provider_first	The first name of the Doctor or other provider that prescribed the medication
	provider_last	The last name of the prescribing provider
	…	*Additional Columns*

Appointment – Stores information on patient's scheduled appointments.

Indicator	Column Name	Description
PK	appointment_id	Primary Key
FK	patient_id	Foreign Key to the Patient table
	appointment_date	Date on which the appointment is scheduled
	provider_first	The first name of the Doctor (or other provider) that patient is scheduled to see
	provider_last	The last name of the provider
	…	*Additional columns*

1. Let's build out this data model a bit further.
    a. Name 2-4 additional columns that could be added to the patient table.
    b. Name 2-4 additional columns that could be added to the prescription table.
    c. Name 2-4 additional columns that could be added to the appointment table.
    d. Describe 3 additional tables that may be of use to extend this data model.

For the following questions, please answer with blocks of SQL that will return the desired data set. Any SQL syntax is accepted (e.g. Postgres, MS SQL, MySQL). If necessary, you may add brief comments in your code to indicate your thought process.

2. Show all rows from the patient table whose first name is Zach.
    [Code should return all relevant rows and every column.]
3. How many patients had an appointment scheduled with Dr. Deborah Davidson on August 16, 2019?
    [Code should return a single number.]
4. Return a list of every patient that has an appointment scheduled tomorrow. Include the name of the provider that the appointment is scheduled with as well. Try to write this code such that it can be reused for any day that the code is executed.
    [Code should return four columns, with the relevant patient and provider names.]
5. Return a list of patients that had more than two prescriptions written for Humira in the year 2019. Include the number of prescriptions that were written as an additional column, and order by prescription frequency (with the patient with the most prescriptions listed first).
    [Code should return three columns: Patient first and last names, and a count column.]
6. For each prescribing provider: List the medication that they have prescribed most often over the last 12 months. Add in how many times the prescription was written in the time frame, the initial prescription date and final prescription date for the given medication in the timeframe, and which patient most recently received a prescription for that medication from the given provider.
    NOTE: the data type of `prescription_date` is `date`, and not `timestamp` so be sure to only list each provider once in the output.
    [Code should return 8 columns: Provider first, Provider Last, the medication name, the number of times the given medication was written by the provider, the first prescription date of the medication, the last prescription date of the medication, and patient first/last name from the most recent prescription.]

For the following questions, imagine the **Patient**, **Prescription**, and **Appointment** tables from questions 1-6 all exist in a single **excel workbook**, with each table on a separate tab. For each question, please explain what steps you would take in Excel to attain the desired output. These explanations should be both detailed, and easy to read. If you decide to mock up the data in Excel yourself, please attach your workbook as a supplementary artifact to your written explanations.

Example Answer:
I would filter then sort the data. Then, I would add a column with a formula of: "=[patient_id]".

7. Briefly explain how you would add the name of each patient's most recently prescribed medication to the tab containing the patient table
    [Your resulting data will be the patient table, with an additional column (called "last_prescribed_med") for each patient's most recently prescribed medication.]
8. Briefly explain how you would add the name of each patient's most frequently prescribed medication name to the tab containing the patient table
    [Your resulting data will be the patient table, with an additional column (called "most_frequent_med") for each patient's most frequently prescribed medication.]
9. Briefly explain how you would obtain the number of distinct medications that were prescribed in the dataset. Provide two different methodologies.
10. Briefly explain how you would determine the number of patients who were prescribed a medication on the day after they had an appointment.