

Problem 1

You should identify insertion, update, and deletion anomalies in the sample rows of the big patient table shown in Table 1. You should identify one example of each type of anomaly. The combination of *VisitNo* and *ProvNo* is the only unique column(s) for the table.

Table 1: Sample Rows for the Big Patient Table

<u>VisitNo</u>	<u>VisitDate</u>	<u>PatNo</u>	<u>PatAge</u>	<u>PatCity</u>	<u>PatZip</u>	<u>ProvNo</u>	<u>ProvSpecialty</u>	<u>Diagnosis</u>
V10021	2/13/2015	P1	36	DENVER	80217	D1	INTERNIST	EAR INFECTION
V10021	2/13/2015	P1	36	DENVER	80217	D2	NURSE PRACTITIONER	INFLUENZA
V93030	2/20/2015	P3	17	ENGLEWOOD	80113	D2	NURSE PRACTITIONER	PREGNANCY
V82110	2/18/2015	P2	60	BOULDER	85932	D3	CARDIOLOGIST	MURMUR

Solution:

The following are the examples of each type of anomaly:

- **Insertion anomaly:** cannot insert a provider (ProvNo = D4) unless a VisitNo is provided.
- **Update anomaly:** must change multiple rows if P1 moves to a different city (PatCity).
- **Deletion anomaly:** deleting fourth row also removes details about provider D3.