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.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VisitNo** | **VisitDate** | **PatNo** | **PatAge** | **PatCity** | **PatZip** | **ProvNo** | **ProvSpecialty** | **Diagnosis** |
| V10021 | 2/13/2018 | P1 | 36 | Denver | 80217 | D1 | internist | Ear Infection |
| V10021 | 2/13/2018 | P1 | 36 | Denver | 80217 | D2 | NURSE PractiTIoner | INFLUENZA |
| V93030 | 2/20/2018 | P3 | 17 | Englewood | 80113 | D2 | NURSE PRACTITIONER | pregnancy |
| V82110 | 2/18/2018 | P2 | 60 | Boulder | 85932 | D3 | cardiologist | murmur |

Solution:

Insertion Anomaly:

For inserting a new row in the table both ProvNo and VisitNo should be known and it should be unique. Cannot insert Prov No D4 unless VisitNo is known.

Update Anomaly:

Must change multiple rows if Patient from Visit V10021 changes his city.

Deletion Anomaly:

Deleting 3rd row deletes details about Patient P3 and respective diagnosis