Lab 6 – Normalization

The table shown in Figure 14.19 lists sample dentist/patient appointment data. A patient is given an appointment at a specific time and date with a dentist located at a particular surgery. On each day of patient appointments, a dentist is allocated to a specific surgery for that day.

(a) The table shown in Figure 14.19 is susceptible to update anomalies. Provide examples of insertion, deletion, and update anomalies.

(b) Identify the functional dependencies represented by the attributes shown in the table of Figure 14.19. State any assumptions you make about the data and the attributes shown in this table.

(c) Describe and illustrate the process of normalizing the table shown in Figure 14.19 to 3NF relations. Identify the primary, alternate, and foreign keys in your 3NF relations.

staffNo	dentistName	patNo	patName	appointment date	time	surgeryNo
S1011	Tony Smith	P100	Gillian White	12-Sep-13	10.00	S15
S1011	Tony Smith	P105	Jill Bell	12-Sep-13	12.00	S15
S1024	Helen Pearson	P108	Ian MacKay	12-Sep-13	10.00	S10
S1024	Helen Pearson	P108	Ian MacKay	14-Sep-13	14.00	S10
S1032	Robin Plevin	P105	Jill Bell	14-Sep-13	16.30	S15
S1032	Robin Plevin	P110	John Walker	15-Sep-13	18.00	S13

Figure 14.19 Table displaying sample dentist/patient appointment data.