**Normalization Process Exercise**

**Learning Goal: understanding the process of normalizing a table to 1NF**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **staffID** | **doctorName** | **patientNo** | **patientName** | **appointment**  **date time** | **surgeryNo** |
| 15432 | Dr. A Ahern | P1000 | Ann Adams | 14.6.22 8.30 | S1 |
| 34576 | Dr. B Bell | P1020 | Ben Baker | 22.6.22 9.15 | S2 |
| 86756 | Dr. C Cope | P2087 | Claire Clap | 26.6.22 8.45 | S3 |
| 15432 | Dr. A Ahern | P9756 | Dan Drew | 22.6.22 14.30 | S1 |
| 34576 | Dr. B Bell | P5346 | Eva End | 24.6.22 16.45 | S1 |

1. **Define First Normal Form (1NF)**

A: First Normal Form (1NF) ensures that in a relational database table each cell of the table should hold a single, simple data value, and not a combination of values; have unique rows, and data independence from the order of rows and columns.

1. **Illustrate how this table can be normalized to First Normal Form (1NF)**

A: Currently this table holds two different values in the appointment date/time cell.

To normalize this table according to First Normal Form rules, the date should be one column, and the time another.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **staffID** | **doctorName** | **patientNo** | **patientName** | **appointmentDate** | **appointmentTime** | **surgeryNo** |
| 15432 | Dr. A Ahern | P1000 | Ann Adams | 14.6.22 | 8.30 | S1 |
| 34576 | Dr. B Bell | P1020 | Ben Baker | 22.6.22 | 9.15 | S2 |
| 86756 | Dr. C Cope | P2087 | Claire Clap | 26.6.22 | 8.45 | S3 |
| 15432 | Dr. A Ahern | P9756 | Dan Drew | 22.6.22 | 14.30 | S1 |
| 34576 | Dr. B Bell | P5346 | Eva End | 24.6.22 | 16.45 | S1 |