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**Applied Information Technology**

**AIT 735 Case Studies in Database Management Systems**

**Case Study Title: Patient Information Management System-on premises to cloud migration**

***Logical Design***

**Logical Design**

**Entity-Relationship Diagram**

**Diagram, schematic

Description automatically generated**

**Data Dictionary:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table Name** | **Column Name** | **Data Type** | **Primary key** | **Foreign key** | **Unique** | **Description** |
| **User Type** | User\_Type\_ID | int | yes |  | Yes | System generated unique ID |
| User\_Type\_Description | Varchar (20) |  |  |  | User description |
| **User\_Account** | User\_ID | Varchar  (10) | Yes |  | Yes | Unique ID that will be created for each user. |
| User\_Type\_ID | int |  | Yes |  |  |
| Password | Varchar (20) |  |  |  | Password created during account creation |
| **Patient** | Patient\_ID | Int | Yes |  | Yes | System generated unique ID |
| First\_Name | Varchar (20) |  |  |  | First name of the Patient |
| Last\_Name | Varchar (20) |  |  |  | Last name of the Patient |
| Gender | Char (1) |  |  |  | Gender of the patient |
| Email\_ID | Varchar (20) |  |  |  | Email address of the patient |
| Date\_Of\_Birth | date |  |  |  | Date of birth of the patient |
| User\_ID | Int |  | yes |  |  |
| Account\_balance | Numeric (5,2) |  |  |  | Amount to be paid by the patient |
| **Doctor** | Doctor\_ID | Int | Yes |  | Yes | System generated unique ID |
| Name | Varchar (20) |  |  |  | Name of the Doctor |
| Email\_ID | Varchar (20) |  |  |  | Email address of the doctor |
| Specialization\_id | Varchar (20) |  | yes |  | Doctor specialty |
| Date\_Of\_Joining | date |  |  |  | Hired date of the doctor |
| User\_ID | Int |  | yes |  |  |
| **Record** | Record\_ID | Int | Yes |  | Yes | System generated unique ID |
| Date\_Of\_Visit | date |  |  |  | Date on which the patient visits the doctor |
| Diagnosis | Varchar (20) |  |  |  | Treatment  provided |
| Amount\_Charged | Numeric (5,2) |  |  |  | Fee needs to be paid by the patient |
| Doctor\_ID | Int |  | yes |  |  |
| Patient\_ID | Int |  | yes |  |  |
| **Payment\_Type** | Payment\_Type\_ ID | Int | Yes |  | Yes | System generated unique ID |
| Payment\_description | Varchar (20) |  |  |  | Payment method like card, cash, check etc. |
| **Payment** | Payment\_ID | Int | Yes |  | Yes | System generated unique ID |
| Amount | Numeric (5,2) |  |  |  | Amount paid by the patient |
| Payment\_Type\_ ID | Int |  | Yes |  |  |
| Payment\_Date | Datetime |  |  |  | Date and time the payment is made by the patient |
| Patient\_ID | Int |  | yes |  |  |
| **Phone\_Type** | Phone\_Type\_ID | Int | Yes |  | Yes | System generated unique ID |
| Phone\_Type\_Description | Varchar (20) |  |  |  | Phone description like home, mobile etc. |
| **Phone** | Phone\_ID | Int | Yes |  | Yes | System generated unique ID |
| Phone\_Type\_ID | Int |  | yes |  |  |
| User\_ID | Int |  | yes |  |  |
| Phone\_number | Varchar (15) |  |  |  | Phone number of the user with corresponding user ID |
| **Address\_Type** | Address\_Type\_ID | Int | Yes |  | Yes | System generated unique ID |
| Address\_Description | Varchar (30) |  |  |  | Address description like home, office etc. |
| **Address** | Address\_ID | Int | Yes |  | Yes | System generated unique ID |
|  | Street | Varchar (20) |  |  |  | Street name of the address |
|  | City | Varchar (15) |  |  |  | City name of the address |
|  | Zipcode | Char (5) |  |  |  | Zipcode of the address |
|  | User\_ID | Int |  | yes |  |  |
|  | Address\_Type\_ID | Int |  | yes |  |  |
| **Appointment** | Appointment\_ID | Int | Yes |  | Yes | System generated unique ID |
| Patient\_ID | Int |  | yes |  |  |
| Doctor\_ID | Int |  | yes |  |  |
| Reason\_of\_visit | Varchar (25) |  |  |  | Reason mentioned by the patient for the visit |
| **Medication** | Medication\_ID | Int | Yes |  | Yes | System generated unique ID |
| Patient\_ID | Int |  | yes |  |  |
| Doctor\_ID | Int |  | yes |  |  |
| Medication\_Name | Varchar (20) |  |  |  | Name of the medicine prescribed by the doctor |
| Dosage | Varchar (15) |  |  |  | Dosage prescribed by the doctor for example 500mg, 5ml etc. |
| **Specialization** | Specialization\_ID | Int | Yes |  | Yes | System generated unique ID |
| Specialization\_desc | Varchar(20) |  |  |  | Description of the specialization, For example, gynecologist, pediatrician etc. |

**References:**

Carolyn E. Begg and Thomas Connolly, Database Systems: A Practical Approach to Design,

Implementation, and management,6th ed USA, Pearson,1996.