Programming Assignment Unit 1

University of the People

CS 2203 Databases 1

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Programming Assignment Unit 1

**Entity set**

|  |  |  |
| --- | --- | --- |
| **No.** | **Entity set** | **Type** |
| 1 | Doctor | Strong |
| 2 | Patient | Strong |
| 3 | Appointment | Strong |

**Doctor Relation**

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | **Data Type** |
| Doctor\_ID | It is the selected candidate key to uniquely identify tuple in this table.  It is the primary key of Doctor relation, it should be   * Entity integrity constraint * Null constraint * Unique constraint | Numeric |
| Doctor\_Name | Assuming that each doctor should have a name, so it must be   * Null constraint | Text |
| Doctor\_Phone | Assuming that each doctor should have a phone number, so it must be   * Null constraint | Numeric |
| Doctor\_Specialty\_Number | Assuming that each doctor have a specialty number as it is the identifier for specialty, so it must be   * Null constraint | Numeric |
| Doctor\_Specialty | It indicates every doctor’s specialty, so it must be   * Null constraint | Text |

**Primary key:** Doctor\_ID

**Candidate key:** Doctor\_Name, Doctor\_Phone / Doctor\_Name, Doctor\_Phone, Doctor\_Specialty\_Number

**Relation Degree:** 5

**Patient Relation**

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | **Data Type** |
| Patient\_ID | It is the selected candidate key to uniquely identify tuple in this table.  It is the primary key of Patient relation, it should be   * Entity integrity constraint * Null constraint * Unique constraint | Numeric |
| Patient\_Name | Assuming that each patient has a name, so it must be   * Null constraint | Text |
| Patient\_Phone | Assuming that each doctor has a phone number, so it must be   * Null constraint | Numeric |
| Patient\_Email | Assuming that some patients don’t have an email address, so it cannot be null constraint. | Text |
| Patient\_Address | Assuming that each patient has an address, so it must be   * Null constraint | Text |
| Patient\_Added\_date | It is the day that each patient has come in the hospital, so each patient should have an added date. Then, it must be   * Null constraint | Date |
| Patient\_Allergies | Not all patients have allergies some of them dom’t have, so it cannot be null constraint. | Text |
| Patient\_Doctor\_ID | Assuming that each patient should see a doctor, so it must be   * Null constraint   Also, we already have Doctor\_ID in the Doctor relation, so it is a foreign key. Hence it must be   * Referential integrity constraint | Numeric |

**Primary key:** Patient\_ID

**Candidate key:** Patient\_Name, Patient\_Phone / Patient\_Name, Patient\_Address

**Relation Degree:** 8

**Appointment Relation**

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | **Data Type** |
| Appointment\_ID | It is the selected candidate key to uniquely identify tuple in this table.  It is the primary key of Appointment relation, it should be   * Entity integrity constraint * Null constraint * Unique constraint | Numeric |
| Appointment\_Doctor\_ID | Assuming there is a doctor for every appointment, so it must be   * Null constraint   Since, Doctor\_ID is an attribute in the Doctor Relation, it is a foreign key. So, it must be   * Referential integrity constraint | Numeric |
| Appointment\_Appointment\_Patient\_ID | Assuming there is a patient for every appointment, so it must be   * Null constraint   Since, Patient\_ID is an attribute in the Patient Relation, it is a foreign key. So, it must be   * Referential integrity constraint | Numeric |
| Appointment\_Date | It is the day that each patient has come in the hospital, so each patient should have an added date. Then, it must be   * Null constraint | Date |
| Blood\_Pressure | Assuming that blood pressure was taken for each appointment, so it must be   * Null constraint | Numeric |
| Weight | Assuming that weight was taken for each appointment, so it must be   * Null constraint | Numeric |
| Treatment\_Notes | Assuming that treatment notes were taken for each appointment, so it must be   * Null constraint | Text |
| Medicines | Assuming that it is the physician's decision whether the patient needs medicine or not, so it cannot be null constraint. | Text |

**Primary key:** Appointment\_ID

**Candidate key:** Appointment\_Doctor\_ID, Appointment\_Patient\_ID, Appointment\_Date

**Relation Degree:** 8