Team Details

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Entities – Data Types and Functional Dependencies

- USER

Attribute	Data Type	Key Constraints
UserId	Integer	Primary Key
Name	String	
DOB	Datetime	
Gender	String	
Address	String	
Username	String	
Password	String	
Ssn	String	

Functional Dependencies
- UserId → { Name, DOB, Gender, Address, Username, Password, Ssn }

- PATIENT

Attribute	Data Type	Key Constraints
Patientid	Integer	Primary Key
UserId	Integer	Foreign Key (USER table)
PatientType	Enum {Well, Sick}	

Functional Dependencies
- PatientId → { Patientid, UserId, PatientType }

- HEALTH SUPPORTER

Attribute	Data Type	Key Constraints
HealthSupporterId	Integer	Primary Key
IsPrimary	Boolean	
UserId	Integer	Foreign Key (USER)

Functional Dependencies
- HealthSupporterId → { IsPrimary, UserId }

- DATE OF AUTHORIZATION

Attribute	Data Type	Key Constraints
From	Datetime	Composite Key
To	Datetime	Composite Key

- DIAGNOSIS

Attribute	Data Type	Key Constraints
DiagnosisId	Integer	Primary Key
Name	String	

Functional Dependencies
- DiagnosisId → { Name }

- HEALTH OBSERVATION

Attribute	Data Type	Key Constraints
HealthObservationId	Integer	Primary Key
Name	String	
ParentTypeId	Integer	Foreign Key (PARENT_TYPE)
Metric	String	
Description	String	
IsOrdinal	Boolean	

Functional Dependencies
- HealthObservationId → { Name, ParentTypeId, Metric, Description, IsOrdinal }

- PARENT_TYPE

Attribute	Data Type	Key Constraints
ParentTypeId	Integer	Primary Key
Name	String	
Description	String	

Functional Dependencies
- ParentTypeId → { Name, Description }

- ORDINAL

Attribute	Data Type	Key Constraints
HealthObservationId	Integer	Composite Key
OrdinalValue	String	Composite Key
Description	String	

Functional Dependencies
- HealthObservationId, OrdinalValue → { Description }

- READING

Attribute	Data Type	Key Constraints
ReadingId	Integer	Composite Key
UploadTime	String	Composite Key
Value	Decimal	
OrdinalValue	Integer	Foreign Key (ORDINAL)
Comments	String	

Functional Dependencies
- ReadingId → { UploadTime, Value, Comments }

- MESSAGE_TYPE

Attribute	Data Type	Key Constraints
MessageId	String	Primary Key
Description	String	

Functional Dependencies
- MessageTypeId, MessageId → { Description }

- MESSAGE

Attribute	Data Type	Key Constraints
MessageId	Integer	Primary Key
MessageTypeId	String	Foreign Key (MESSAGE_TYPE)
Description	String	

Functional Dependencies
- MessageId → { MessageTypeId, Description }

- ALERT

Attribute	Data Type	Key Constraints
AlertId	Integer	Primary Key
AlertTypeId	Integer	Foreign Key (ALERT_TYPE)
ClearedOn	Datetime	
Timestamp	Datetime	
ClearedTimestamp	Datetime	
Description	String	
ViewedOn	Datetime	
ViewedBy	Integer	Foreign Key (USER)

Functional Dependencies
- AlertId → { Type, ClearedOn, Timestamp, ClearedTimestamp, Description, ViewedOn, ViewedBy }

- ALERT_TYPE

Attribute	Data Type	Key Constraints
AlertTypeId	Integer	Primary Key
Description	String	

Functional Dependencies
- AlertTypeId → { Description }

Application Constraints

- Well Patients should not be tagged to any disease at a given time.
- Sick Patients should be tagged to at least one disease (diagnosis) at a given time.
- Health supporters are designated by patients
- A patient can have a maximum of 2 health supporters – primary and secondary.
- A sick patient should have at least 1 health supporter
- Prior to authorization date, health supporters should not have access to patient information.
- For a disease class, patients directly inherit the observation recommendations for that class of patients (unless a specific recommendation is made)
- For well patient observation requirements are merely recommendations. For sick patients, observation requirements are mandatory.
- Some observation types may be inapplicable to particular groups of patients but applicable for others.
- Each sick patient class may include recommendations that override those for well patients.
- Two types of alerts are available - outside-the-limit, low-activity-alert.
  - Outside-the-limit alert when a certain threshold percentage number of consecutive readings are over the specified limits for the patient. Outside-the-limit thresholds are specific for each patient.
  - Low-activity-alerts which help to identify patients that seem to be disengaged from the system. If the recommended frequency of an observation type is X and patients haven't recorded any activity by certain threshold beyond X.
- Alerts can be cleared in one of two ways: either the Health Supporter clears them (essentially representing the fact that they have intervened in some way) or a patient enters an observation for the missing observation type.
- A user shouldn't just be able to clear alerts before seeing them.
- For entering observation data, only available options should be the options for observation types associated with the patient classes that the patient belongs to.