DMDD Final Project Fall 2021

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Problem Statement

01
Manual Paperwork for Doctors and Patients

02
Data distributed over multiple systems

03
No centralized platform for stakeholders

04
Data redundancy

Solutions

01
Digitization of records
To aid doctors in making medical decisions based on previous medical history

02
Centralization of records
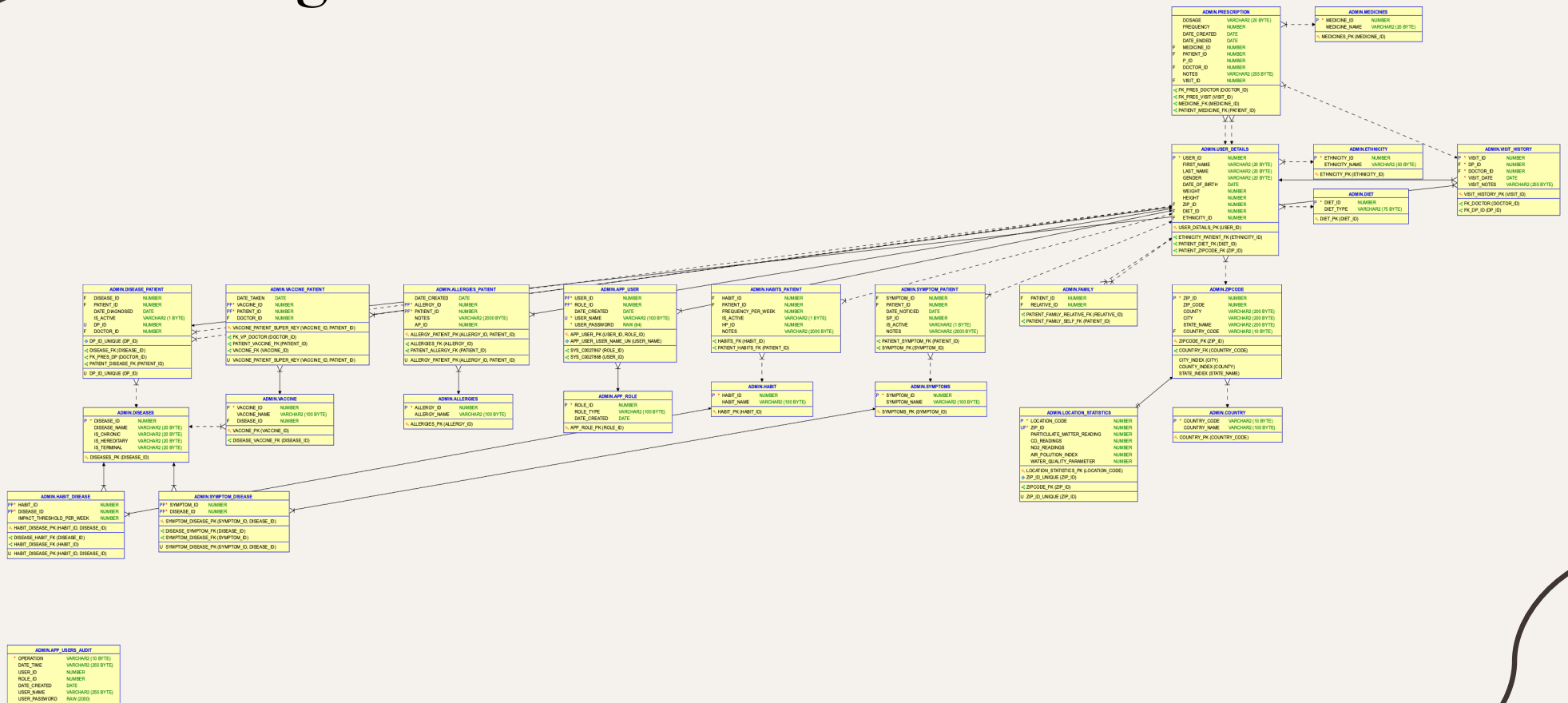Enabling analysis and potential preventive care

03
Preventive Care
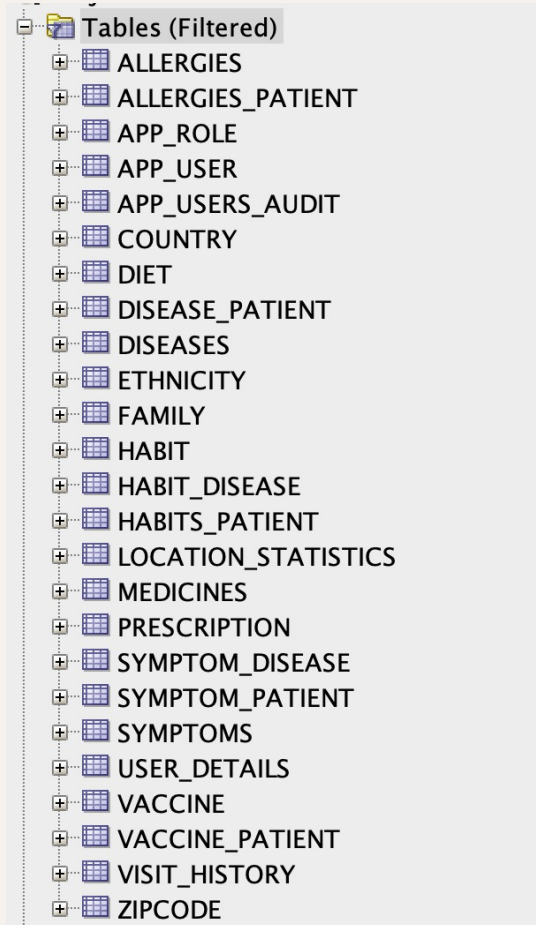Enables preventive care for genetically susceptible diseases

04
Lifestyle based Analysis
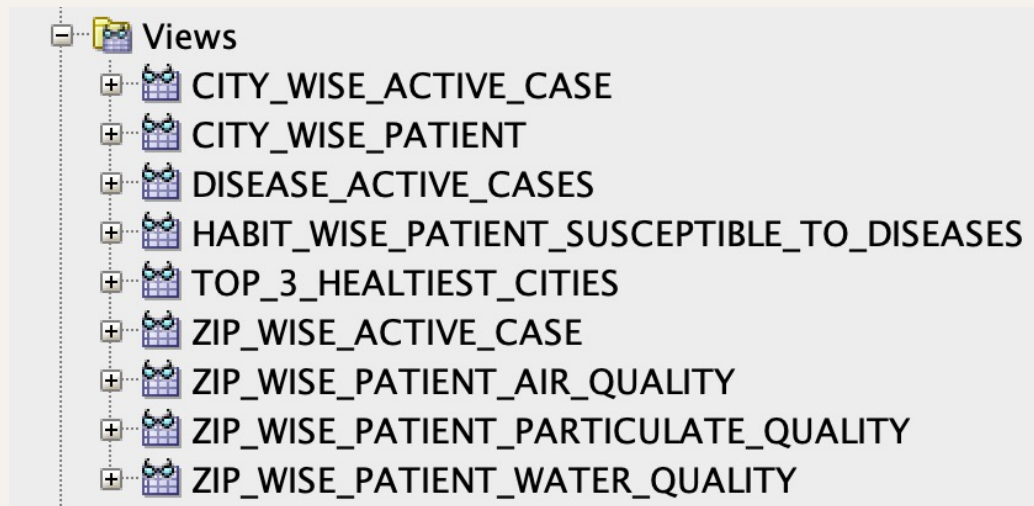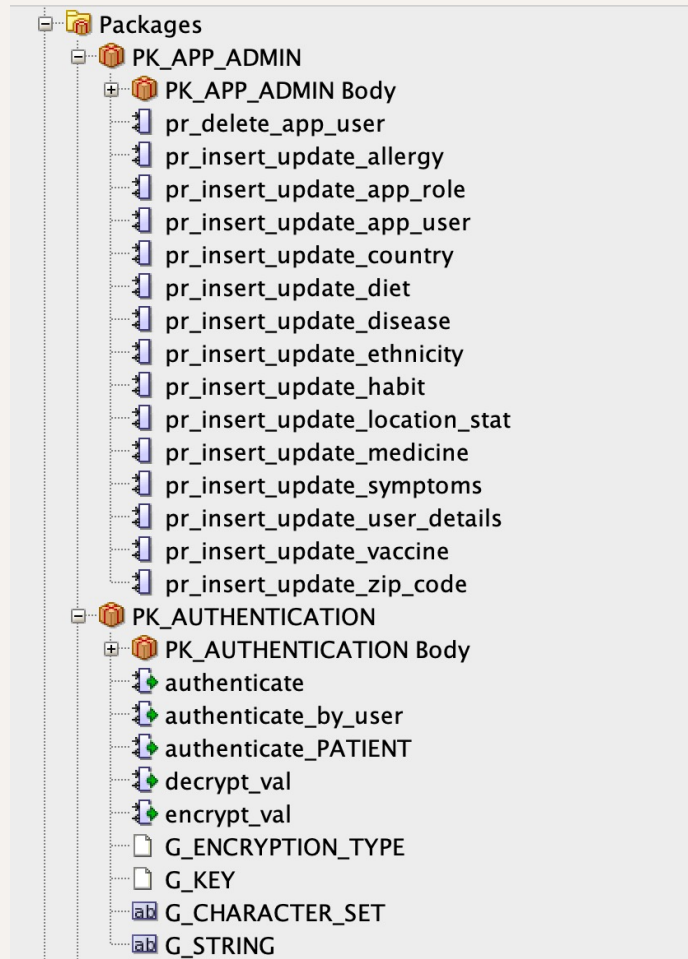Location based analysis of pollution and other lifestyle factors

ER Diagram

ADMIN.PRESCRIPTION
	DOSAGE	VARCHAR2 (20 BYTE)
	FREQUENCY	NUMBER
	DATE_CREATED	DATE
	DATE_ENDED	DATE
	MEDICINE_ID	NUMBER
F	PATIENT_ID	NUMBER
	P_ID	NUMBER
F	DOCTOR_ID	NUMBER
	NOTES	VARCHAR2 (255 BYTE)
F	VISIT_ID	NUMBER

FK_PRES_DOCTOR (DOCTOR_ID)
FK_PRES_VISIT (VISIT_ID)
MEDICINE_FK (MEDICINE_ID)
PATIENT_MEDICINE_FK (PATIENT_ID)

ADMIN.MEDICINES
P	* MEDICINE_ID	NUMBER
	MEDICINE_NAME	VARCHAR2 (20 BYTE)

MEDICINES_PK (MEDICINE_ID)

ADMIN.USER_DETAILS
P	* USER_ID	NUMBER
	FIRST_NAME	VARCHAR2 (20 BYTE)
	LAST_NAME	VARCHAR2 (20 BYTE)
	GENDER	VARCHAR2 (20 BYTE)
	DATE_OF_BIRTH	DATE
	WEIGHT	NUMBER
	HEIGHT	NUMBER
	ZIP_ID	NUMBER
	DIET_ID	NUMBER
	ETHNICITY_ID	NUMBER

USER_DETAILS_PK (USER_ID)
ETHNICITY_PATIENT_FK (ETHNICITY_ID)
PATIENT_DIET_FK (DIET_ID)
PATIENT_ZIPCODE_FK (ZIP_ID)

ADMIN.ETHNICITY
P	* ETHNICITY_ID	NUMBER
	ETHNICITY_NAME	VARCHAR2 (50 BYTE)

ETHNICITY_PK (ETHNICITY_ID)

ADMIN.VISIT_HISTORY
P	* VISIT_ID	NUMBER
F	DP_ID	NUMBER
F	DOCTOR_ID	NUMBER
	VISIT_DATE	DATE
	VISIT_NOTES	VARCHAR2 (255 BYTE)

VISIT_HISTORY_PK (VISIT_ID)
FK_DOCTOR (DOCTOR_ID)
FK_DP_ID (DP_ID)

ADMIN.DIET
P	* DIET_ID	NUMBER
	DIET_TYPE	VARCHAR2 (75 BYTE)

DIET_PK (DIET_ID)

ADMIN.DISEASE_PATIENT
F	DISEASE_ID	NUMBER
	PATIENT_ID	NUMBER
	DATE_DIAGNOSED	DATE
	IS_ACTIVE	VARCHAR2 (1 BYTE)
	DP_ID	NUMBER
F	DOCTOR_ID	NUMBER

DP_ID_UNIQUE (DP_ID)
DISEASE_FK (DISEASE_ID)
FK_PRES_DP (DOCTOR_ID)
PATIENT_DISEASE_FK (PATIENT_ID)
DP_ID_UNIQUE (DP_ID)

ADMIN.VACCINE_PATIENT
	DATE_TAKEN	DATE
PF	* VACCINE_ID	NUMBER
PF	* PATIENT_ID	NUMBER
F	DOCTOR_ID	NUMBER

VACCINE_PATIENT_SUPER_KEY (VACCINE_ID, PATIENT_ID)
FK_VP_DOCTOR (DOCTOR_ID)
PATIENT_VACCINE_FK (PATIENT_ID)
VACCINE_FK (VACCINE_ID)
VACCINE_PATIENT_SUPER_KEY (VACCINE_ID, PATIENT_ID)

ADMIN.ALLERGIES_PATIENT
	DATE_CREATED	DATE
PF	* ALLERGY_ID	NUMBER
PF	* PATIENT_ID	NUMBER
	NOTES	VARCHAR2 (2000 BYTE)
	AP_ID	NUMBER

ALLERGY_PATIENT_FK (ALLERGY_ID, PATIENT_ID)
ALLERGIES_FK (ALLERGY_ID)
PATIENT_ALLERGY_FK (PATIENT_ID)
ALLERGY_PATIENT_FK (ALLERGY_ID, PATIENT_ID)

ADMIN.APP_USER
PF	* USER_ID	NUMBER
PF	* ROLE_ID	NUMBER
	DATE_CREATED	DATE
U	* USER_NAME	VARCHAR2 (100 BYTE)
	USER_PASSWORD	RAW (64)

APP_USER_PK (USER_ID, ROLE_ID)
APP_USER_USER_NAME_UN (USER_NAME)
SYS_C0027867 (ROLE_ID)
SYS_C0027868 (USER_ID)

ADMIN.HABITS_PATIENT
	HABIT_ID	NUMBER
	PATIENT_ID	NUMBER
	FREQUENCY_PER_WEEK	NUMBER
	IS_ACTIVE	VARCHAR2 (1 BYTE)
	HF_ID	NUMBER
	NOTES	VARCHAR2 (2000 BYTE)

HABITS_FK (HABIT_ID)
PATIENT_HABITS_FK (PATIENT_ID)

ADMIN.SYMPTOM_PATIENT
	SYMPTOM_ID	NUMBER
	PATIENT_ID	NUMBER
	DATE_NOTICED	DATE
	SP_ID	NUMBER
	IS_ACTIVE	VARCHAR2 (1 BYTE)
	NOTES	VARCHAR2 (2000 BYTE)

PATIENT_SYMPTOM_FK (PATIENT_ID)
SYMPTOM_FK (SYMPTOM_ID)

ADMIN.FAMILY
F	PATIENT_ID	NUMBER
F	RELATIVE_ID	NUMBER

PATIENT_FAMILY_RELATIVE_FK (RELATIVE_ID)
PATIENT_FAMILY_SELF_FK (PATIENT_ID)

ADMIN.ZIPCODE
P	* ZIP_ID	NUMBER
	ZIP_CODE	NUMBER
	COUNTY	VARCHAR2 (200 BYTE)
	CITY	VARCHAR2 (200 BYTE)
	STATE_NAME	VARCHAR2 (200 BYTE)
	COUNTRY_CODE	VARCHAR2 (10 BYTE)

ZIPCODE_PK (ZIP_ID)
COUNTRY_FK (COUNTRY_CODE)
CITY_INDEX (CITY)
COUNTY_INDEX (COUNTY)
STATE_INDEX (STATE_NAME)

ADMIN.DISEASES
P	* DISEASE_ID	NUMBER
	DISEASE_NAME	VARCHAR2 (20 BYTE)
	IS_CHRONIC	VARCHAR2 (20 BYTE)
	IS_HEREDITARY	VARCHAR2 (20 BYTE)
	IS_TERMINAL	VARCHAR2 (20 BYTE)

DISEASES_PK (DISEASE_ID)

ADMIN.VACCINE
P	* VACCINE_ID	NUMBER
	VACCINE_NAME	VARCHAR2 (100 BYTE)
F	DISEASE_ID	NUMBER

VACCINE_PK (VACCINE_ID)
DISEASE_VACCINE_FK (DISEASE_ID)

ADMIN.ALLERGIES
P	* ALLERGY_ID	NUMBER
	ALLERGY_NAME	VARCHAR2 (100 BYTE)

ALLERGIES_PK (ALLERGY_ID)

ADMIN.APP_ROLE
P	* ROLE_ID	NUMBER
	ROLE_TYPE	VARCHAR2 (100 BYTE)
	DATE_CREATED	DATE

APP_ROLE_PK (ROLE_ID)

ADMIN.HABIT
P	* HABIT_ID	NUMBER
	HABIT_NAME	VARCHAR2 (100 BYTE)

HABIT_PK (HABIT_ID)

ADMIN.SYMPTOMS
P	* SYMPTOM_ID	NUMBER
	SYMPTOM_NAME	VARCHAR2 (100 BYTE)

SYMPTOMS_PK (SYMPTOM_ID)

ADMIN.LOCATION_STATISTICS
P	* LOCATION_CODE	NUMBER
UF	ZIP_ID	NUMBER
	PARTICULATE_MATTER_READING	NUMBER
	CO_READINGS	NUMBER
	NO2_READINGS	NUMBER
	AIR_POLUTION_INDEX	NUMBER
	WATER_QUALITY_PARAMETER	NUMBER

LOCATION_STATISTICS_PK (LOCATION_CODE)
ZIP_ID_UNIQUE (ZIP_ID)
ZIPCODE_FK (ZIP_ID)
ZIP_ID_UNIQUE (ZIP_ID)

ADMIN.COUNTRY
P	* COUNTRY_CODE	VARCHAR2 (10 BYTE)
	COUNTRY_NAME	VARCHAR2 (100 BYTE)

COUNTRY_PK (COUNTRY_CODE)

ADMIN.HABIT_DISEASE
PF	* HABIT_ID	NUMBER
PF	* DISEASE_ID	NUMBER
	IMPACT_THRESHOLD_PER_WEEK	NUMBER

HABIT_DISEASE_PK (HABIT_ID, DISEASE_ID)
DISEASE_HABIT_FK (DISEASE_ID)
HABIT_DISEASE_FK (HABIT_ID)
HABIT_DISEASE_PK (HABIT_ID, DISEASE_ID)

ADMIN.SYMPTOM_DISEASE
PF	* SYMPTOM_ID	NUMBER
PF	* DISEASE_ID	NUMBER

SYMPTOM_DISEASE_PK (SYMPTOM_ID, DISEASE_ID)
DISEASE_SYMPTOM_FK (DISEASE_ID)
SYMPTOM_DISEASE_FK (SYMPTOM_ID)
SYMPTOM_DISEASE_PK (SYMPTOM_ID, DISEASE_ID)

ADMIN.APP_USERS_AUDIT
	* OPERATION	VARCHAR2 (10 BYTE)
	DATE_TIME	VARCHAR2 (255 BYTE)
	USER_ID	NUMBER
	ROLE_ID	NUMBER
	DATE_CREATED	DATE
	USER_NAME	VARCHAR2 (255 BYTE)
	USER_PASSWORD	RAW (2000)

Tables

Tables (Filtered)
- ALLERGIES
- ALLERGIES_PATIENT
- APP_ROLE
- APP_USER
- APP_USERS_AUDIT
- COUNTRY
- DIET
- DISEASE_PATIENT
- DISEASES
- ETHNICITY
- FAMILY
- HABIT
- HABIT_DISEASE
- HABITS_PATIENT
- LOCATION_STATISTICS
- MEDICINES
- PRESCRIPTION
- SYMPTOM_DISEASE
- SYMPTOM_PATIENT
- SYMPTOMS
- USER_DETAILS
- VACCINE
- VACCINE_PATIENT
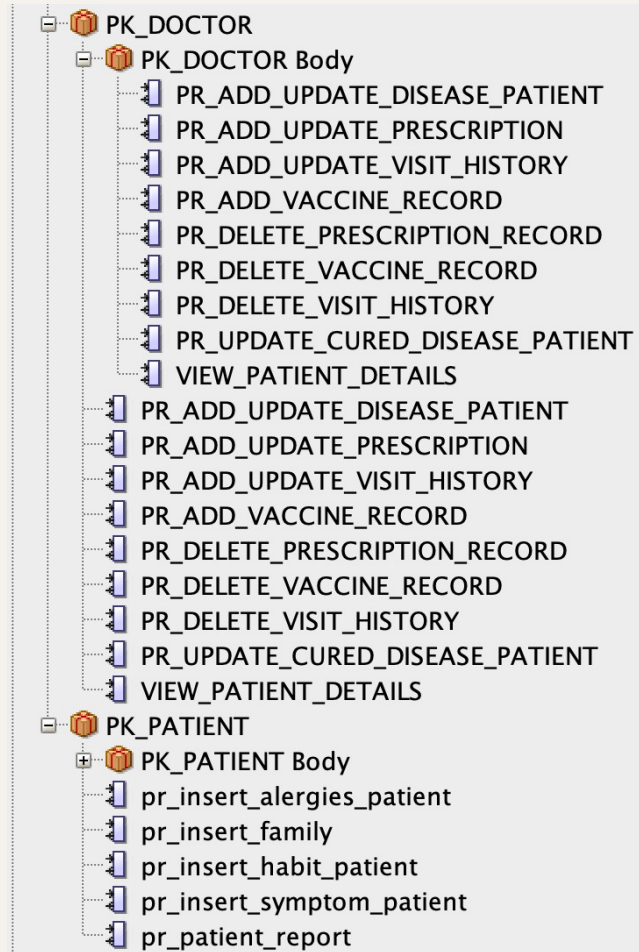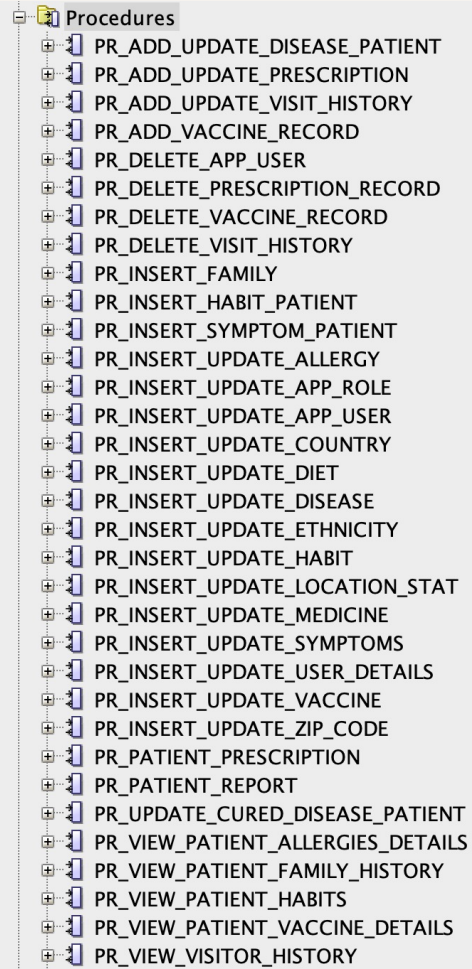- VISIT_HISTORY
- ZIPCODE

Views

Views
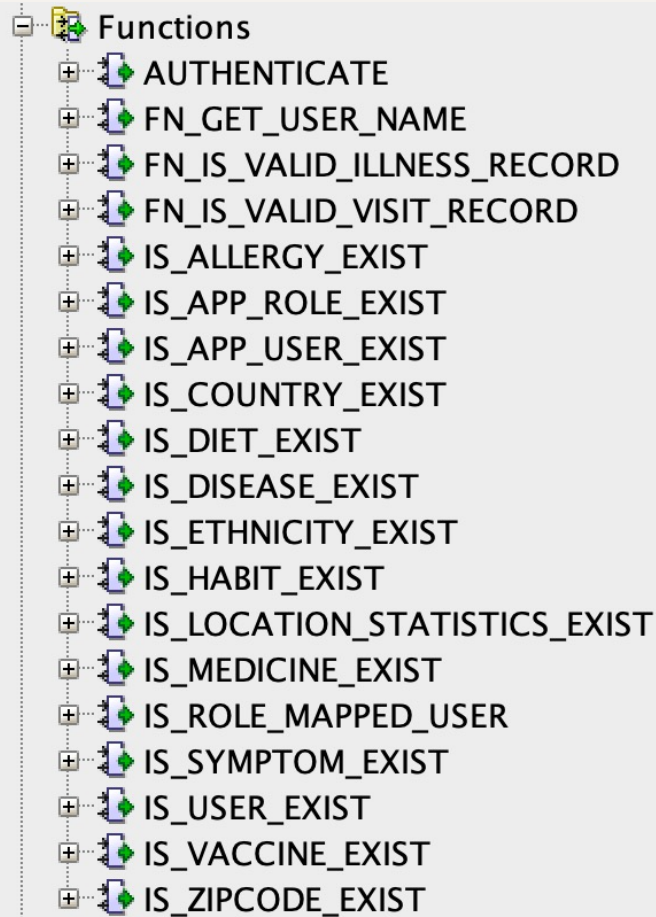- CITY_WISE_ACTIVE_CASE
- CITY_WISE_PATIENT
- DISEASE_ACTIVE_CASES
- HABIT_WISE_PATIENT_SUSCEPTIBLE_TO_DISEASES
- TOP_3_HEALTIEST_CITIES
- ZIP_WISE_ACTIVE_CASE
- ZIP_WISE_PATIENT_AIR_QUALITY
- ZIP_WISE_PATIENT_PARTICULATE_QUALITY
- ZIP_WISE_PATIENT_WATER_QUALITY

Packages

```
Packages
  PK_APP_ADMIN
    PK_APP_ADMIN Body
    pr_delete_app_user
    pr_insert_update_allergy
    pr_insert_update_app_role
    pr_insert_update_app_user
    pr_insert_update_country
    pr_insert_update_diet
    pr_insert_update_disease
    pr_insert_update_ethnicity
    pr_insert_update_habit
    pr_insert_update_location_stat
    pr_insert_update_medicine
    pr_insert_update_symptoms
    pr_insert_update_user_details
    pr_insert_update_vaccine
    pr_insert_update_zip_code
  PK_AUTHENTICATION
    PK_AUTHENTICATION Body
    authenticate
    authenticate_by_user
    authenticate_PATIENT
    decrypt_val
    encrypt_val
    G_ENCRYPTION_TYPE
    G_KEY
    G_CHARACTER_SET
    G_STRING
```

Packages

```
PK_DOCTOR
    PK_DOCTOR Body
        PR_ADD_UPDATE_DISEASE_PATIENT
        PR_ADD_UPDATE_PRESCRIPTION
        PR_ADD_UPDATE_VISIT_HISTORY
        PR_ADD_VACCINE_RECORD
        PR_DELETE_PRESCRIPTION_RECORD
        PR_DELETE_VACCINE_RECORD
        PR_DELETE_VISIT_HISTORY
        PR_UPDATE_CURED_DISEASE_PATIENT
        VIEW_PATIENT_DETAILS
    PR_ADD_UPDATE_DISEASE_PATIENT
    PR_ADD_UPDATE_PRESCRIPTION
    PR_ADD_UPDATE_VISIT_HISTORY
    PR_ADD_VACCINE_RECORD
    PR_DELETE_PRESCRIPTION_RECORD
    PR_DELETE_VACCINE_RECORD
    PR_DELETE_VISIT_HISTORY
    PR_UPDATE_CURED_DISEASE_PATIENT
    VIEW_PATIENT_DETAILS
PK_PATIENT
    PK_PATIENT Body
    pr_insert_alergies_patient
    pr_insert_family
    pr_insert_habit_patient
    pr_insert_symptom_patient
    pr_patient_report
```

Procedures

```
Procedures
   PR_ADD_UPDATE_DISEASE_PATIENT
   PR_ADD_UPDATE_PRESCRIPTION
   PR_ADD_UPDATE_VISIT_HISTORY
   PR_ADD_VACCINE_RECORD
   PR_DELETE_APP_USER
   PR_DELETE_PRESCRIPTION_RECORD
   PR_DELETE_VACCINE_RECORD
   PR_DELETE_VISIT_HISTORY
   PR_INSERT_FAMILY
   PR_INSERT_HABIT_PATIENT
   PR_INSERT_SYMPTOM_PATIENT
   PR_INSERT_UPDATE_ALLERGY
   PR_INSERT_UPDATE_APP_ROLE
   PR_INSERT_UPDATE_APP_USER
   PR_INSERT_UPDATE_COUNTRY
   PR_INSERT_UPDATE_DIET
   PR_INSERT_UPDATE_DISEASE
   PR_INSERT_UPDATE_ETHNICITY
   PR_INSERT_UPDATE_HABIT
   PR_INSERT_UPDATE_LOCATION_STAT
   PR_INSERT_UPDATE_MEDICINE
   PR_INSERT_UPDATE_SYMPTOMS
   PR_INSERT_UPDATE_USER_DETAILS
   PR_INSERT_UPDATE_VACCINE
   PR_INSERT_UPDATE_ZIP_CODE
   PR_PATIENT_PRESCRIPTION
   PR_PATIENT_REPORT
   PR_UPDATE_CURED_DISEASE_PATIENT
   PR_VIEW_PATIENT_ALLERGIES_DETAILS
   PR_VIEW_PATIENT_FAMILY_HISTORY
   PR_VIEW_PATIENT_HABITS
   PR_VIEW_PATIENT_VACCINE_DETAILS
   PR_VIEW_VISITOR_HISTORY
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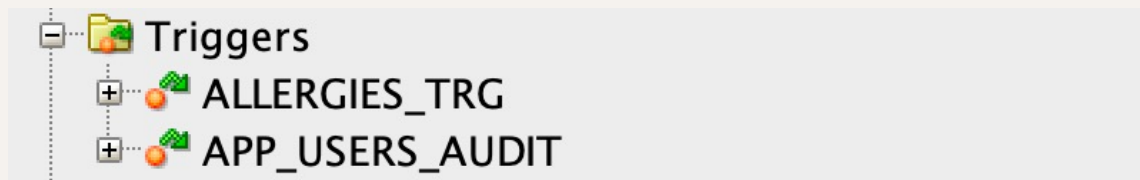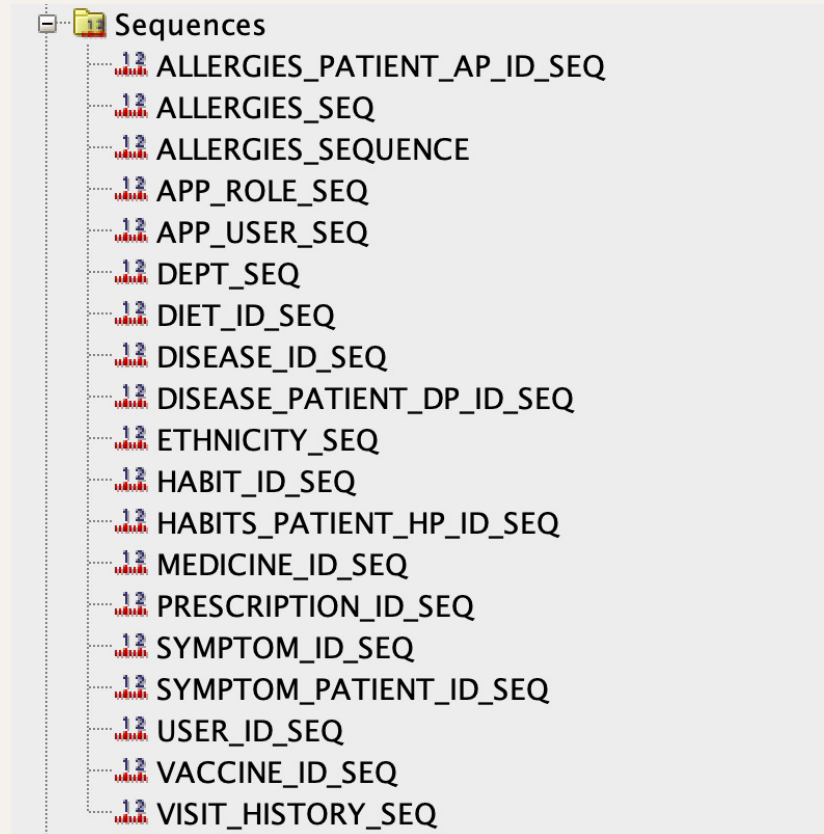
Functions

Functions
- AUTHENTICATE
- FN_GET_USER_NAME
- FN_IS_VALID_ILLNESS_RECORD
- FN_IS_VALID_VISIT_RECORD
- IS_ALLERGY_EXIST
- IS_APP_ROLE_EXIST
- IS_APP_USER_EXIST
- IS_COUNTRY_EXIST
- IS_DIET_EXIST
- IS_DISEASE_EXIST
- IS_ETHNICITY_EXIST
- IS_HABIT_EXIST
- IS_LOCATION_STATISTICS_EXIST
- IS_MEDICINE_EXIST
- IS_ROLE_MAPPED_USER
- IS_SYMPTOM_EXIST
- IS_USER_EXIST
- IS_VACCINE_EXIST
- IS_ZIPCODE_EXIST

Indexes

Triggers

Sequences

Sequences
- ALLERGIES_PATIENT_AP_ID_SEQ
- ALLERGIES_SEQ
- ALLERGIES_SEQUENCE
- APP_ROLE_SEQ
- APP_USER_SEQ
- DEPT_SEQ
- DIET_ID_SEQ
- DISEASE_ID_SEQ
- DISEASE_PATIENT_DP_ID_SEQ
- ETHNICITY_SEQ
- HABIT_ID_SEQ
- HABITS_PATIENT_HP_ID_SEQ
- MEDICINE_ID_SEQ
- PRESCRIPTION_ID_SEQ
- SYMPTOM_ID_SEQ
- SYMPTOM_PATIENT_ID_SEQ
- USER_ID_SEQ
- VACCINE_ID_SEQ
- VISIT_HISTORY_SEQ

Contributions

Darshan – packages, procedures and functions related to Doctor

Ruchit – packages, procedures and functions related to Patient

Shubham – packages, procedures and functions related to App Admin

Jai – packages, procedures and functions related to Pharmacist

Thank You

Happy Holidays!!

A huge thanks to
Northeastern

Aaaaaand it's a wrap for our M.S !!
Woohoo!!