WebMD+

Final Project for CSCI 403 Database Management:

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What disease do you have?

Welcome to WebMD+

Patient Info

Sex:	○ male ○ female
Age:	40
First Name:	Louis
Last Name:	Samartino
Symptom 1:	Anxiety and nervousness
Symptom 2:	Depression
Symptom 3:	Disturbance of smell or taste
Symptom 4:	Dizziness
Symptom 5:	Insomnia

Submit

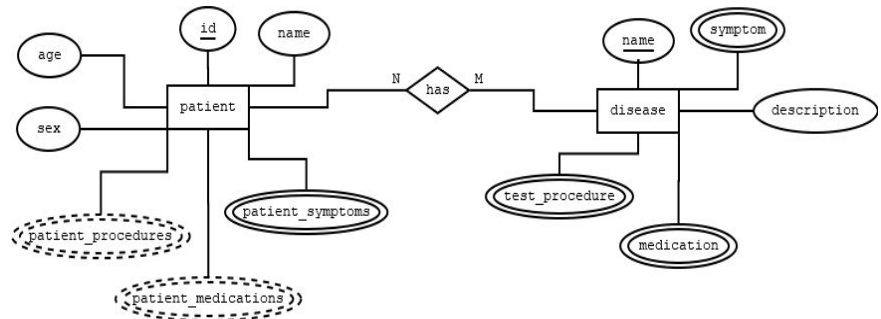|	
Predicted Disease/Affliction:	High blood pressure

Other Possible Diagnoses:

Panic disorder
Eating disorder
Substance-related mental disorder
Postpartum depression

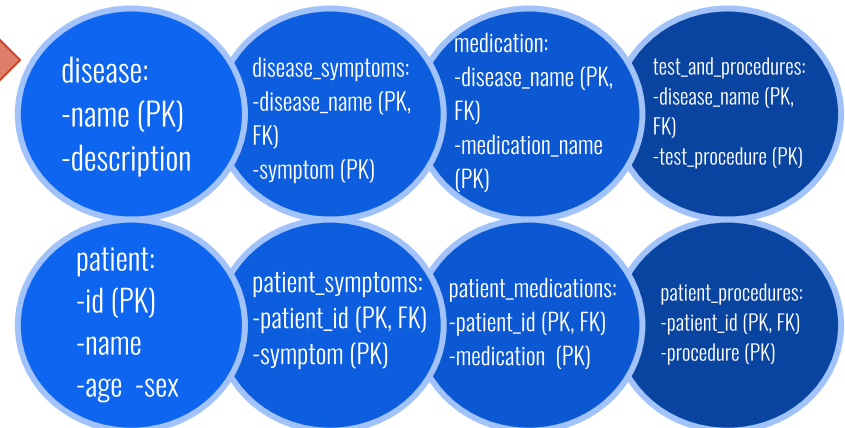*Patient Info from app queried back into the database*

ERD:

Database Shape:

disease:
-name (PK)
-description

disease_symptoms:
-disease_name (PK, FK)
-symptom (PK)

medication:
-disease_name (PK, FK)
-medication_name (PK)

test_and_procedures:
-disease_name (PK, FK)
-test_procedure (PK)

patient:
-id (PK)
-name
-age -sex

patient_symptoms:
-patient_id (PK, FK)
-symptom (PK)

patient_medications:
-patient_id (PK, FK)
-medication (PK)

patient_procedures:
-patient_id (PK, FK)
-procedure (PK)

WebM.D+ App
-Takes up to five of user's symptoms
-Feeds inputs into classifier
-Outputs predicted diagnosis
-Queries for other linked diseases

Machine Learning
-Uses sklearn's *Random Forest Classifier*.
-Labels = 800 unique diseases
-Predicts disease given list of symptoms

Database
-Two main entities, patients and diseases
-Disease table maps 800 diseases to their related symptoms, medications, and procedures
-Patient table stores resulting diagnosis data

"SELECT disease_name
FROM disease_symptoms
WHERE symptom IN
    (SELECT symptom
    FROM patient_symptoms
    WHERE patient_id = {PID})"

CS@Mines