Report 1 Part 3

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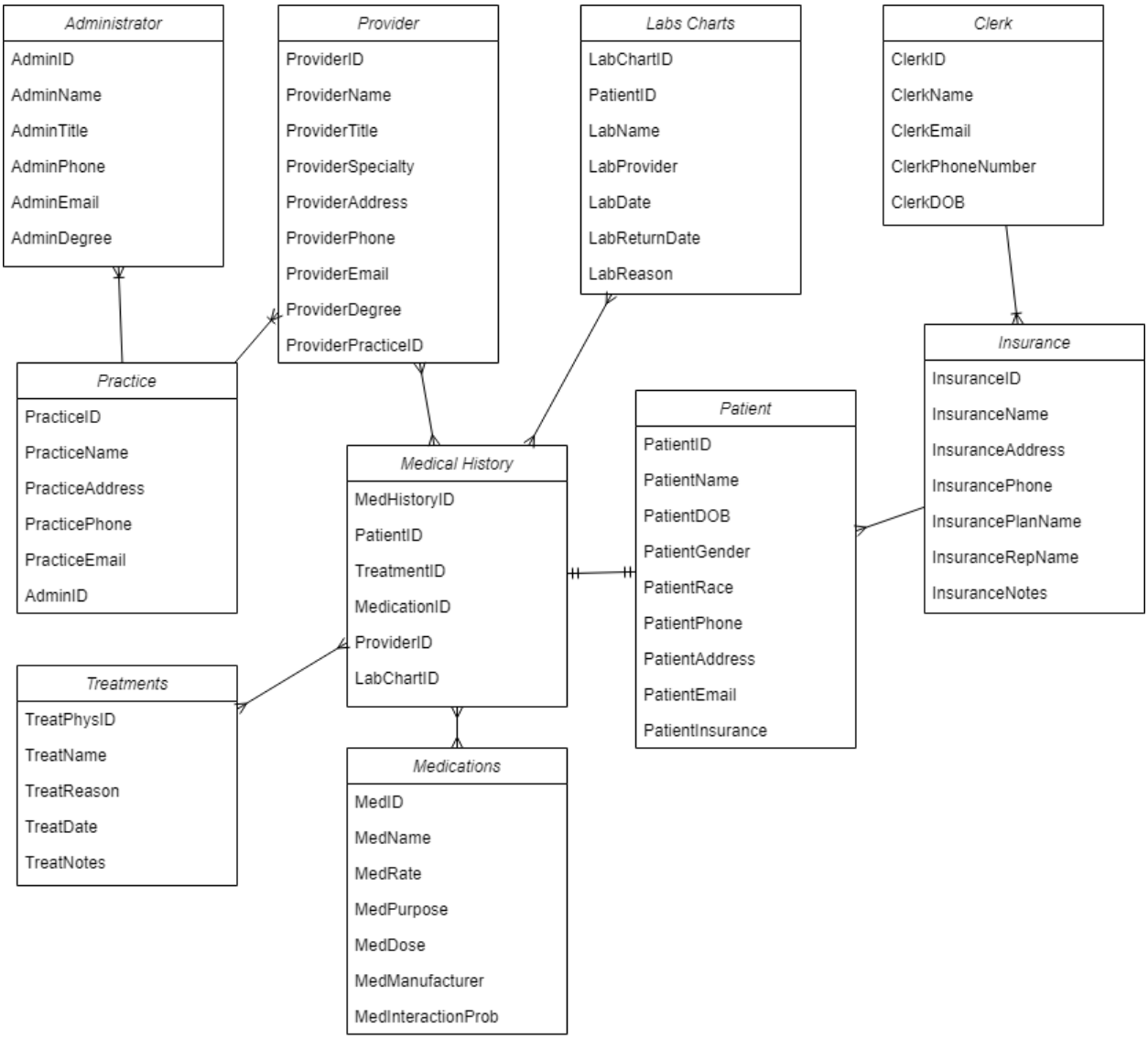
Systems Implementation

Domain Analysis



Show how to derive the domain model and draw the diagrams. Give descriptions of the diagrams:

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        - Concept definitions
        - Association definitions
        - Attribute definitions
    - System Operation Contracts
- Administrator – Support and IT staff that maintains the Electronic Health Records System.
    - Association – with the Practice
    - AdminID – Unique identifier for administrator
    - AdminName – Name of administrator

    - AdminTitle – Title of administrator
    - AdminPhone – Phone number of administrator
    - AdminEmail – Email of the administrator
    - AdminDegree – Earned degree of the administrator
- Provider – Person who provides medical care, and records data
    - Association – has one practice, and many medical histories
    - ProviderID – Unique identifier for Provider
    - ProviderName – Name of Provider
    - ProviderTitle – Title of Provider
    - ProviderSpecialty – Specialty of the Provider
    - ProviderAddress – Address for Provider
    - ProviderPhone – Phone number of Provider
    - ProviderEmail – Email for the Provider
    - ProviderDegree – Degree for the Provider
    - ProviderPracticeID – Practice the Provider works at
- Practice – The entity where the medical care takes place, like an office or hospital
    - Association - Has many Administrators, and has many providers
    - PracticeID – Unique identifier for Practice
    - PracticeName – Name of Practice
    - PracticeAddress – Address for Practice
    - PracticePhone – Phone number of Practice
    - PracticeEmail – Email for the Practice
    - AdminID – ID of the lead Administrator for the Practice
- Medical History – Collection of an Individual patients medical data.
    - Association – Has many providers, Has many Labs and Charts, Has many treatments, has many medications, but must have only one patient
    - MedHistoryID – Unique identifier for patients medical history
    - PatientID – foreign key associated with patient
    - TreatmentID – foreign key associated with Treatment
    - MedicationID – foreign key associated with Medications
    - ProviderID – foreign key associated with Providers
    - LabChartID – foreign key associated with Labs and Charts
- Patient – Individual who is seeking medical care
    - Association – must have one medical history, and may have insurance
    - PatientID – Unique identifier for Patient
    - PatientName – Name of Patient
    - PatientDOB – Birthdate of Patient
    - PatientGender – Gender of Patient
    - PatientRace – Race of Patient
    - PatientPhone – Phone number of Patient
    - PatientAddress – Address for Patient
    - PatientEmail – Email of Patient
    - PatientInsurance – foreign key to Insurance
- Insurance – Third party entity that insures patients
    - Association – Insurance may have many patients, has a clerk
    - InsuranceID – Unique identifier for Insurance

    - InsuranceName – Name of Insurance
    - InsuranceAddress – Address for Insurance
    - InsurancePhone – Phone number of Insurance
    - InsurancePlanName – Name for Insurance
    - InsuranceRepName – Representative managing Insurance
    - InsuranceNotes – Notes for the Insurance
- Clerk – Billing Specialists that bill Insurance providers for the practice
    - Association – Has many Insurers
    - ClerkID – Unique identifier for Clerk
    - ClerkName – Name of Clerk
    - ClerkEmail – Email of Clerk
    - ClerkPhoneNumber – Phone number of Clerk
    - ClerkDOB – Birthdate of Clerk
- Labs Charts – Images, or Unique forms that go with a medical history
    - Association – Has many different medical histories
    - LabChartID – Unique identifier for Labs & Charts
    - PatientID – Foreign key for the patient associated with Labs & Charts
    - LabName – Name of Labs & Charts
    - LabProvider – Medical Provider who ordered Labs & Charts
    - LabDate – Date the Labs & Charts were requested
    - LabReturnDate – Date the Labs & Charts were returned
    - LabReason – Providers reason for ordering the Labs & Charts
- Medications – Drugs or prescriptions ordered by a provider for a patient
    - Association – Each drug may be associated with many medical histories
    - MedID – Unique identifier for Medication
    - MedName – Name of Medication
    - MedRate – Rate of consumption of Medication
    - MedPurpose – Reason for Medication prescription
    - MedDose – Size of each Medication dosage
    - MedManufacturer – producer and maker of Medication
    - MedInteractionProb – issues that may arise from Medication
- Treatments – Provider ordered treatment for a condition
    - Association – Each treatment may be associated with many different medical histories
    - TreatmentID – Unique identifier for Treatment
    - TreatName – Name of Treatment
    - TreatReason – Reason for the Treatment
    - TreatDate – Date Treatment begins
    - TreatNotes – Extra notes for the Treatment

You should provide the contracts of the fully-dressed use cases in Section 3c for their operations defined in 3d. A template can be traced USE-CASE MODEL: ADDING DETAIL WITH OPERATION CONTRACTS (Links to an external site.).

Contract 1	Administrator
Operation:	CreateAdmin(), ReadAdmin(), UpdateAdmin(), DeleteAdmin()

Cross References:	UpdatePractice()
Preconditions:	Practice exists
Postconditions:	Administrator was Created, Read, Updated, or Deleted

Contract 2	Provider
Operation:	CreateProvider, ReadProvider(), UpdateProvider(), DeleteProvider()
Cross References:	UpdateMedHist(), UpdatePractice()
Preconditions:	Practice Exists
Postconditions:	Provider was Created, Read, Updated, or Deleted

Contract 3	Practice
Operation:	CreatePractice(), ReadPractice(), UpdatePractice(), DeletePractice()
Cross References:	UpdateProvider(), UpdateAdmin()
Preconditions:	none
Postconditions:	Practice was was Created, Read, Updated, or Deleted

Contract 4	Medical History
Operation:	CreateMedHist(), UpdateMedHist(), ReadMedHist(), DeleteMedHist()
Cross References:	n/a
Preconditions:	Provider exists, patient exists, treatment exists, medications exist, labs and charts exist
Postconditions:	Medical History was Created, Read, Updated, or Deleted

Contract 5	Patient
Operation:	CreatePatient(), ReadPatient(),UpdatePatient(), DeletePatient()
Cross References:	UpdateMedHist(), UpdateInsur()
Preconditions:	Practice, Provider, Labs & Charts, Medications, and Treatments exist
Postconditions:	Patient was Created, Read, Updated, or Deleted

Contract 6	Insurance
Operation:	CreateInsur(), ReadInsur(), UpdateInsur(), DeleteInsur()
Cross References:	UpdatePatient(), UpdateClerk()

Preconditions:	Patient exists
Postconditions:	Insurance was Created, Read, Updated, or Deleted

Contract 7	Create/Read/Update/Delete Clerk
Operation:	CreateClerk(), ReadClerk(), UpdateClerk(), DeleteClerk()
Cross References:	UpdateInsur()
Preconditions:	Insurer exists
Postconditions:	Clerk was Created, Read, Updated, or Deleted

Contract 8	Labs & Charts
Operation:	CreateLabChar(), ReadLabChar(), UpdateLabChar(), DeleteLabChar()
Cross References:	UpdateMedHist()
Preconditions:	Patient, Practice, Provider exists
Postconditions:	Labs & Charts was Created, Read, Updated, or Deleted

Contract 9	Medication
Operation:	CreateMedication(), ReadMedication(), UpdateMedication(), DeleteMedication()
Cross References:	UpdateMedHist()
Preconditions:	Patient, Practice, Provider exists
Postconditions:	Medication was Created, Read, Updated, or Deleted

Contract 10	Treatment
Operation:	CreateTreatment(), ReadTreatment(), UpdateTreatment(), DeleteTreatment()
Cross References:	UpdateMedHist()
Preconditions:	Patient, Practice, Provider exists
Postconditions:	Treatment was Created, Read, Updated, or Deleted

2. Project size estimation based on use case points

- The project will consist of 10 major entities and will encompass the needs of a medical practice such as a doctor's office or hospital. It will track patient medical histories and relevant information such as Insurance for the patient.

3. Plan of Work

Date	Goal
March 15	Have a working interface and have most objects created.
April 1	Have an updated interface and Database.
May 1	Project Should be completed and fully functional
May 15	Any final adjustments and additions should be complete, End of Project.

4. References

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