Date : 4th Oct 2019

Jayshil Jain

**Business Rules (WEEK 4)**

* Patient makes an appointment to meet a Dentist and is allocated a specific day and time with a room number at a dental clinic.
* Dentist creates a Treatment Catalog where he includes all the details of the treatment types and assigns it a specific treatment id to it with a specific cost that will be used while generating the bill.
* A Billing Invoice is generated when a patient has completed his/her appointment and is charged by the Dentist using a Treatment Catalog.
* Patient has a Patient Insurance that he/she submits to the Dentist and the claims for the insurance is carried out by the Dentist.
* Dentist is responsible to maintain the supplies of the room and the clinic maintenance is also done by the dentist.
* Patient Test Reports are generated by the Dentist and is stored in as a part of the Patient History for future references.
* Patient makes payment of the amount that was not covered by the insurance company and the mode of payment can be card or cash.
* Room is allocated once the Patient makes an appointment at the Clinic based on the room functionalities.
* Patient has specific Allergies that he/she mentions that will be stored in a separate entity that will be displayed to the dentist prior to the appointment.
* The clinic maintenance is to be carried out by the Dentist that involves refilling of supplies and other monthly payments.
* Dentist creates an Insurance Company list where he/she lists all the insurance Companies with whom he/she needs to file a claim and then makes the claim for all the patients with same Insurance together.

**Design Nouns** (for Reference)

1. **Treatment Catalog**

A treatment catalog will have all the details about the treatment with a Treatment\_ID assigned to it every treatment will have one treatment\_id and a specific price and name associated to it. The attributes included will be treatment\_id, treatment\_name, price, etc.

1. **Dentist**

Dentist is a person that is officially licensed to operate over the patients and has licensed by the dentistry system. He will have attributes like dentist\_specialization, dentist\_name, dentist\_address, dentist\_contact\_information and a Dentist\_Id to give him a unique identity.

1. **Patient**

Patient is a person who has specific dental issues and is visiting dental clinic by booking an appointment. Patient will have patient\_name, patient\_address, patient\_contact\_information and a Patient\_id to give him/her a unique identity.

1. **Patient** **History**

A patient history is a table that will store all the details of the patient’s past visits and all the treatments the patient has undergone. Patient history will help doctor to plan out the examinations he/she will be carrying. Patient history will have patient\_id, treatment, date.

1. **Appointment**

An appointment is defined as a time frame that patient books prior coming for a visit at dental clinic. Appointments once made can be cancelled and modified based on patient convenience. Appointment will have Appointment\_id, Date, Patient\_id, Dentist\_id.

1. **Room**

A room is defined as a place where the treatment action is performed by the doctor on patient. Room will have attributes like room\_id, address, appointment\_id and room\_type where room type will describe facilities available in the room.

1. **Supplies**

Supplies is defined as the major medication supplies (like injections, painkiller, etc.) for which the patient has to be billed separately. Supplies will have attributes like supply\_id, appointment\_id, room\_id and date.

1. **Billing** **Invoice**

Billing is an action performed once the patient is done with the treatment is to be charged an amount at the clinic. The attributes will be invoice\_number, treatment, appointment\_id, charge.

1. **Patient** **Insurance**

Patient Insurance is defined as the insurance a patient is having with him/her that will cover up his dental expenses. A patient can have multiple insurance. The attributes will include patient\_insurance\_id, patient\_id, insurance\_validity, insurance\_policy\_details, insurance\_company\_name.

1. **Insurance** **Company**

The insurance company will contain the list of all insurance company and details about their policies. This will help dentist in filing for insurance claims. The attributes associated would be Insurance\_company\_id, name, invoice\_id, claim\_amount, amount\_covered\_by\_insurance, covered\_by\_patient.

1. **Payment**

The payment is the way patient makes payment to the dentist. There are multiple ways of payment and multiple modes of payment. Multiple ways may include upfront-payment, partial-payments and EMI payments. Modes of payment will include payments by card, cash, etc. Payment will include attributes like appointment\_id, payment\_mode, payment\_way, total\_cost\_of\_treatment, pending\_amount.

1. **Allergies**

The allergies will keep a track of all the allergies that a patient has before starting the treatment so that he/she can make sure he uses medication that suits the patient. Allergies will have attributes like patient\_id, allergy\_id, allergy\_name, items\_to\_avoid.

1. **Patient** **Test** **Reports**

All the test reports of the patient will be documented together in a form of report called the Test Reports. It will store all the tests like X-ray, Dental radiography, etc. The test reports will contain all the test report data that can be used by dentist to conduct treatment. The attributes will include patient\_id, X-ray\_report, Radiology\_report, date.

1. **Clinic** **Maintenance**

The clinic maintenance will include all the clinic expenses like electricity bill, water bill, heating bill, etc. Clinic maintenance will help the dentist in analyzing all the monthly expenses and can plan out his/her treatment costs accordingly. The attributes will be room\_id, electricity\_bill, water\_bill, heating\_bill, etc.