***EXERCISE 6*** 🡪 <https://www.cerritos.edu/dwhitney/SitePages/CIS201/Lectures/IM-7ed-Chapter03.pdf>

**PROMPT:** The following should be textually analyzed and a use case diagram created containing several use cases. Identify the actors, use cases and associations. Please give me the PlantUML code for the use case diagram corresponding to the following text:

***A patient record and scheduling system in a doctor’s office is used by the receptionists, nurses, and doctors. The receptionists use the system to enter new patient information when first-time patients visit the doctor. They also schedule all appointments. The nurses use the system to keep track of the results of each visit including diagnosis and medications. For each visit, free form text fields are used to capture information on diagnosis and treatment. Multiple medications may be prescribed during each visit. The nurses can also access the information to print out a history of patient visits. The doctors primarily use the system to view patient history. The doctors may enter some patient treatment information and prescriptions occasionally, but most frequently they let the nurses enter this information. -- Each patient is assigned to a family. The head of family is responsible for the person with the primary medical coverage. Information about doctors is maintained since a family has a primary care physician, but different doctors may be the ones seeing the patient during the visit.***

ChatGPT

**ChatGPT**

Let's analyze the text and identify the actors, use cases, and associations for the patient record and scheduling system in a doctor’s office.

**Actors:**

1. Receptionists
2. Nurses
3. Doctors
4. Head of Family (implicitly mentioned)

**Use Cases:**

1. Enter New Patient Information
2. Schedule Appointments
3. Record Visit Results (by Nurses)
4. View Patient History (by Nurses and Doctors)
5. Print Patient Visit History (by Nurses)
6. Enter Treatment Information (by Doctors)
7. Prescribe Medications (by Doctors)

**Associations:**

1. Receptionists enter new patient information and schedule appointments.
2. Nurses record visit results, including diagnosis and medications.
3. Nurses can access information to print out a history of patient visits.
4. Doctors primarily use the system to view patient history.
5. Doctors may enter some patient treatment information and prescriptions occasionally.
6. Each patient is assigned to a family.
7. The head of the family is responsible for the person with primary medical coverage.
8. Information about doctors is maintained since a family has a primary care physician.

Now, let's create the PlantUML code for the use case diagram:

plantumlCopy code

@startuml

left to right direction

actor Receptionists

actor Nurses

actor Doctors

actor "Head of Family" as HeadOfFamily

rectangle "System" {

usecase "Enter New Patient Information" as UC1

usecase "Schedule Appointments" as UC2

usecase "Record Visit Results" as UC3

usecase "View Patient History" as UC4

usecase "Print Patient Visit History" as UC5

usecase "Enter Treatment Information" as UC6

usecase "Prescribe Medications" as UC7

}

Receptionists --> UC1

Receptionists --> UC2

Nurses --> UC3

Nurses --> UC4

Nurses --> UC5

Nurses --> UC6

Doctors --> UC4

Doctors --> UC6

Doctors --> UC7

HeadOfFamily --> UC4

@enduml

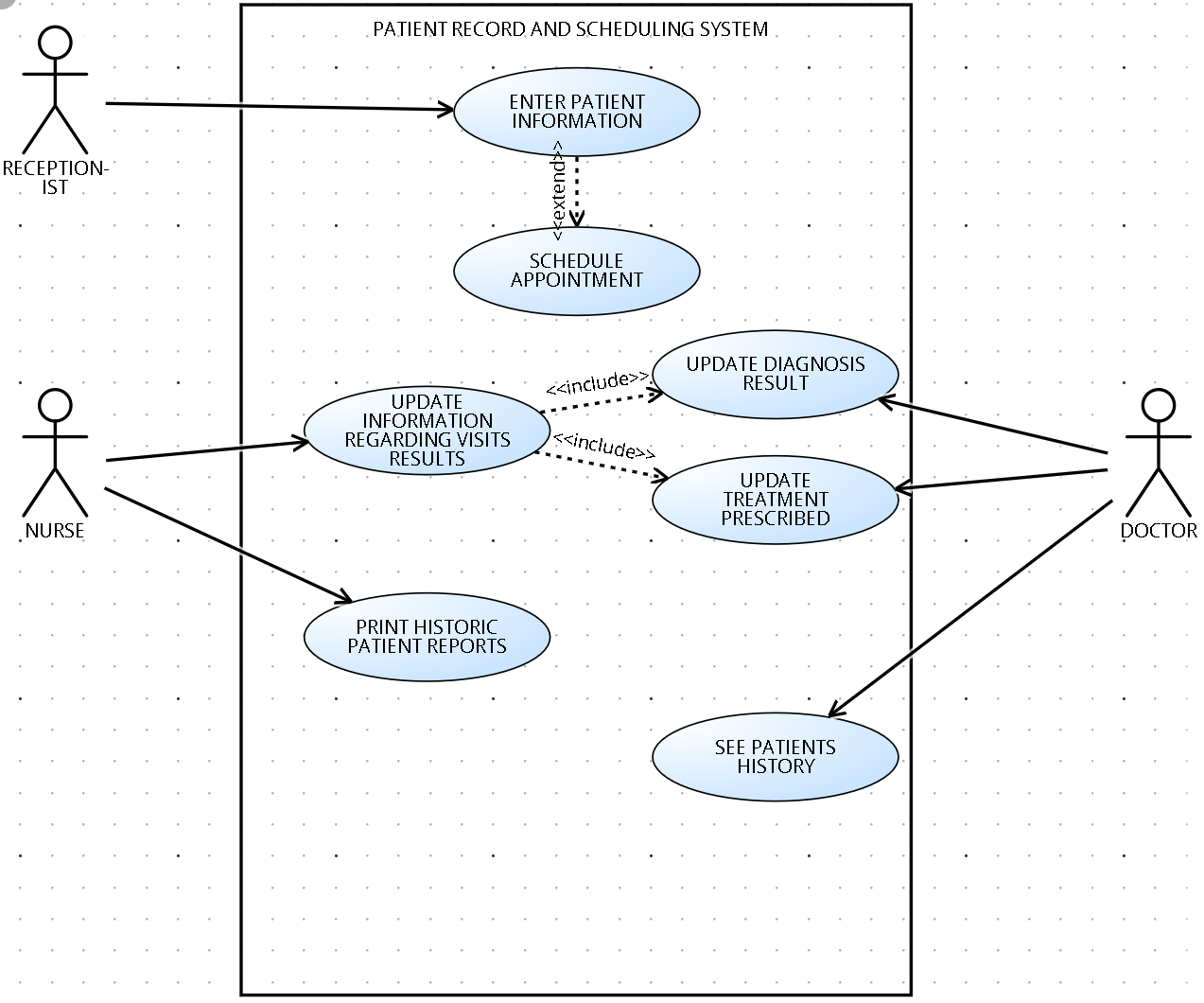
This PlantUML code represents the use case diagram with actors, use cases, and associations based on the provided text. Adjustments can be made according to your specific needs or preferences.

**Analysis:**

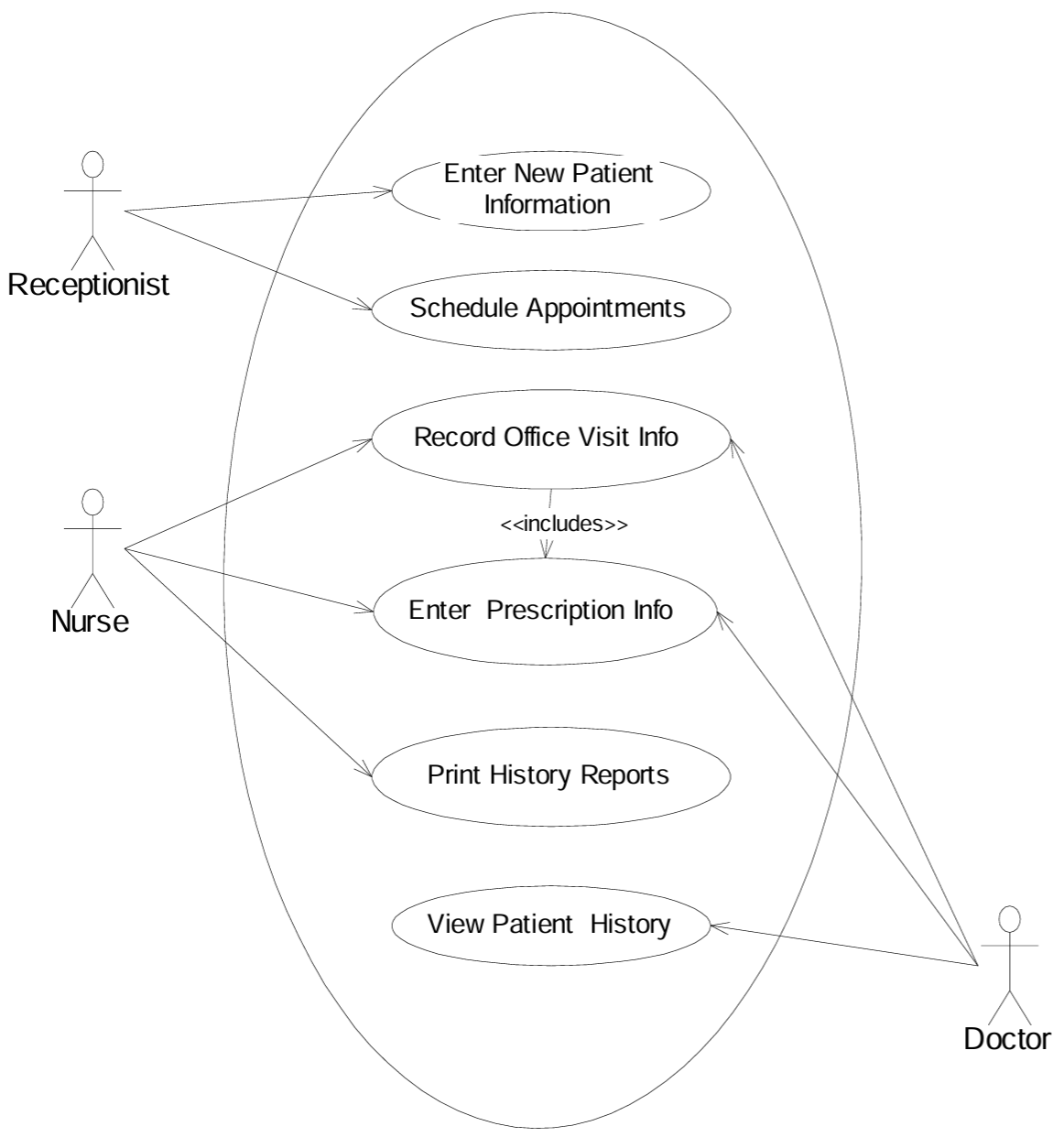
In this exercise, the initial observation from ChatGPT's output is the inclusion of a new actor implicitly stated in the text, namely the "head of family," in the use case diagram. Comparing it with the original answer, both use cases are quite similar and comparable, with a minor difference – the PlantUML code has one additional use case, "enter treatment information." This extra use case appears to be encompassed within the "record visit information" use case in the original answer.

Another noteworthy distinction is absent in the original diagram – an "include" association between the use cases "record visit info" and "enter prescription info." The text's ambiguity leaves room for interpretation regarding the necessity of this association. Consequently, the code and diagrams generated by the Language Model (LLM) in this case are once again substantially correct, complete, and even more detailed than the original, reflecting a nuanced understanding of the textual content.

**MY SOLUTION:**

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**REFERENCE SOLUTION:**

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**LLM SOLUTION:**

